

Will **teaching and learning** benefit from Artificial Intelligence in the next decade?

A narrative report on the ARC10 Debate Webinar on Rethinking Digital Transformation held on 17 October 2024

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About the 10th ASEF Regional Conference on Higher Education (ARC10)

The [Asia-Europe Foundation \(ASEF\)](#) is an intergovernmental organisation dedicated to fostering bi-regional dialogue, knowledge exchange, and collaboration among its 51 partner countries, along with ASEAN and the European Union. As the only permanent institution within the Asia-Europe Meeting (ASEM) Process, ASEF plays a pivotal role in addressing pressing global challenges through multi-sectoral initiatives in various thematic areas.

A key component of ASEF's work in Education is the [ASEF Regional Conference on Higher Education \(ARC\) Programme](#). Conducted on a biennial cycle, ARC serves as the Official Dialogue Partner of the [ASEM Education Ministers' Meeting \(ASEMME\)](#), making it the only bi-regional, multi-stakeholder dialogue platform that brings together university and student leaders, policymakers, and ministers to shape the higher education landscape in Asia and Europe.

The [tenth edition of ARC \(ARC10\)](#), running from 2024 to 2025, focuses on the future of higher education in response to global trends. Climate change, geopolitical disruptions, social inequalities, rapid digital transformation, and the urgent need to meet the Sustainable Development Goals (SDGs) underscore the necessity for innovative and adaptive higher education strategies. Business-as-usual approaches are no longer viable.

As a launching point for ARC10, ASEF organised the [ARC10 Debate Webinar Series](#) from October to December 2024, structured around three key themes: Digital Transformation, Access & Equity, and Recognition & Balanced Mobility.

Each webinar featured a thought-provoking debate, framed by a compelling prompt and explored by distinguished experts from across Asia and Europe, who engaged in an assigned or chosen stance. Do note that with this, their position during the debates may not reflect their personal or professional opinions on the topic.

This Narrative Report provides a comprehensive summary of the diverse perspectives shared during the [ARC10 Debate Webinar on Rethinking Digital Transformation](#), held virtually on 17 October 2024.

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Overview

The question of whether teaching and learning will benefit from Artificial Intelligence (AI) in the next decade is complex; and while expectations appear to be high, perspectives are increasingly polarised.

On the one hand, advocates claim that AI offers promising ways to personalise content, enrich the learning experience, help with assessment, and support the mental health of students. On the other hand, critics claim that AI undermines equity and human rights, that it can be misleading and deceptive, and that the promises are all speculative with little or no supporting evidence. Either way, there are many assumptions, and much fear (whether reasonable or misplaced), a great deal of hyperbole, and too much misinformation around AI, that together raise important questions centred on ethics, equity, human relationships, and more.

This, then, served as the topic for the ARC10 Debate Webinar held in October 2024; with two sides discussing the question:

“Will teaching and learning benefit from Artificial Intelligence in the next decade?”

The speakers making the case that AI will benefit teaching and learning were:

- **Prof Dr Blaženka DIVJAK**, Head of Learning Analytics Laboratory of the Faculty of Organisation and Informatics at the University of Zagreb as well as former Minister of Science and Education, Croatia; and
- **Ms Fatima AURANGZEB**, Founder of Women in Computer Science, Pakistan.

The speakers putting the opposite position were:

- **Mr Ron SALAJ**, Member of the Expert Group on AI and Education at the Council of Europe, and MA Coordinator for the ‘ICT for Development and Social Good’ Programme at University of Turin, Italy; and
- **Prof Wen WEN**, Director of the Division of Education, Institute of Education at Tsinghua University, China).

This debate session was moderated by:

- **Prof Dr Wayne HOLMES**, Professor of Critical Studies of AI and Education at the University College London; Member of the Expert Group on AI and Education at the Council of Europe; AI&ED Consultant for UNESCO and the UN; and Senior Researcher for the International Research Centre on AI (IRCAI) under the auspices of UNESCO, Slovenia; and
- **Ms Reka TOZSA**, Director of the Education Department at the Asia-Europe Foundation.

It is important to note that the arguments made by the speakers might or might not have represented their real views. In fact, each was allocated randomly to their side of the debate.

Context

Throughout its 60-year history, Artificial Intelligence has been defined in various ways (note that Artificial Intelligence should always be capitalised to make it clear we are talking about a field of inquiry and not an intelligence that is artificial, something that does not exist, Holmes & Tuomi, 2022, p. 5). However, most definitions broadly agree that AI involves machines capable of executing tasks typically associated with human intelligence.

What dominates today is the AI approach known as Machine Learning, which has led to various AI systems becoming common in most aspects of our daily lives. It underpins applications from mobile apps and online shopping to weather forecasting, medical diagnostics, financial and legal services, autonomous vehicles, and Generative AI (GenAI, such as ChatGPT).

This is a key point of which many are either unaware or they choose to ignore. While many say “AI”, they actually mean GenAI, which is just one among many applications of Machine Learning, which in turn is one among several types of AI. While it is more than acceptable to focus on GenAI, given its dramatic arrival and how it is now available in a multitude of tools and application, to avoid confusion and errors, it is important to be clear. GenAI is only one of many examples of AI applications.

AI and education (AI&ED) is itself also complex. First, it is best separated into two distinct but complementary aspects: teaching and learning *about* AI (also known as AI literacy) and teaching and learning *with* AI (also known as AI in education, or AIED). It was AIED that was the focus of this debate webinar.

Teaching and learning with AI (AIED)

AIED itself encompasses a multitude of diverse types, which in turn have been sub-divided into three overlapping groups: institution-focused, student-focused, and teacher-focused AIED (Holmes et al., 2019).

Student-focused AIED (much of which, incidentally, does not use Machine Learning) has received the most attention and investment over forty years. Examples include adaptive tutoring systems, dialogue-based tutoring systems, and automatic writing evaluation. Each of these aims to automate specific aspects of a teacher’s role. In adaptive tutoring systems, which are often misleadingly called Intelligent Tutoring Systems (misleading because they are not intelligent in any meaningful sense), students interact with an online platform that provides them with information, activities, and quizzes. Each student’s interactions and responses, such as where they click and how they answer questions, determine the subsequent content. In this way, every student follows an individualised learning path through the material, an approach often referred to as ‘personalised learning’.

Adaptive tutoring systems and other student-focused AIED tools are now offered by innumerable well-funded commercial organisations and are being taken up by many schools worldwide – either voluntarily by teachers or mandated by school leaderships or policymakers. This growing involvement of the commercial sector in education presents an emerging concern, as commercial entities often exploit the rich student data that they capture, potentially ignoring the ethical and

wider societal issues, particularly those in relation to who owns this data and who should benefit from it.

In contrast to student-focused AIED, **teacher-focused AIED** has received relatively limited attention and so remains largely speculative, with only a few available examples geared toward genuinely supporting educators rather than replacing them. Those few applications that do exist include the automatic curation of learning materials (e.g., X5GON), and e-proctoring tools, which aim to prevent student misconduct in examinations. However, it is important to note that e-proctoring tools have been accused of intrusion, discrimination, preventing students from taking their exams, exacerbating mental health problems, and even failing to work properly (Chin, 2020).

Lastly, **institution-focused AIED** encompasses AI-enabled tools designed to assist educational institutions with tasks such as student recruitment, security, financial management, and other essential administrative functions. While currently less visible, this backend category may in the future have a more noticeable influence.



The Debate

Will teaching and learning benefit from Artificial Intelligence in the next decade?

PRO SIDE | THE ARGUMENT FOR

A synthesis of the case made by

Prof Dr Blaženka DIVJAK and Ms Fatima AURANGZEB

As we move deeper into the 21st century, AI stands poised to revolutionise education in unprecedented ways. While this technological evolution sparks both excitement and concern, the evidence increasingly suggests that AI's potential benefits for teaching and learning far outweigh the risks—provided we approach this partnership carefully and responsibly.

"The genie is out of the bottle," noted Sal Khan (2014), the founder and CEO of Khan Academy, in his recent book 'Brave New Words'. This reminds us that, because we cannot reverse technological progress, we must thoughtfully shape the impact of AI, particularly on education. Meanwhile, Max Tegmark (2019), in his book 'Life 3.0', defines intelligence as the ability to accomplish complex goals. By this definition, AI has certainly demonstrated some narrow intelligence, but it is up to us to ensure that AI systems are aligned with the goals we value in education. In fact, our challenge as educators is to use AI in a way that enhances, rather than detracts from, human learning and growth.

It is great that learning is a hot topic in public debates; and it is encouraging that educators are actively engaging with AI—because the ostrich approach, in which educators close their eyes and pretend that nothing is changing, is the worst. In fact, instead of seeing AI predominantly as a threat, many educators are proactive and evaluating how AI can be a tool for positive change in

education. According to a Forbes Advisor (2023) survey of 500 U.S. educators, more than half expressed support for AI, recognising its role as a tool for enhancement rather than replacement.

The real questions are where the boundary is between human and machine capabilities and how educators can use AI with low risks. These decisions are still in our hands, and with that comes a great deal of responsibility. Where do we, as educators and learners, draw the line between tasks that should remain in the domain of human intelligence and those that can be enhanced or automated by AI? To answer this, we must cultivate a human-machine partnership and use AI to make the learning process engaging for educators and learners. For example, with the help of AI, we can share learning materials without worrying how to distribute scarce resources and how to make related ethical and moral decisions.

■ Empowering educators, not replacing them

A major concern often raised is that AI could replace teachers. However, AI should be modelled as a tool to empower, not replace, educators.

Teachers bring contextual knowledge, emotional support, and advice for students that cannot be replaced by AI. AI should be viewed as a tool to lighten a teacher's burden by handling repetitive tasks, freeing up time for more educational activities like creating engaging classes and offering individualised guidance. In fact, AI can handle dull data-driven tasks, assist with routine grading, administration, and content delivery, allowing teachers to focus on their irreplaceable human roles and core tasks: guiding, mentoring, and inspiring learners. AI also reduces teachers' burdens by taking on tasks such as grading assignments and exams.

In short, the dignity and professional autonomy of teachers is not diminished by AI. Instead, it's enhanced. It is only creative teachers who can inspire students to be innovative and to take new roles, and who can provide students with the social aspects of learning, supporting them in acquiring human values. To achieve that, to enable the successful integration of AI into education, educational decision-makers should provide educators with opportunities for professional development, to support systemic positive change.

■ Personalisation

One of AI's most compelling advantages is its ability to provide personalised learning experiences for students. Traditional classrooms often follow a one-size-fits-all approach, where students receive identical material at the same pace; and if a student misses a concept, they will likely struggle to grasp later topics that build on it. In fact, research consistently shows that students each have unique strengths, weaknesses, and learning patterns, and that one-on-one tutoring provides the best results. However, this has long been impractical for large-scale education.

With AI, however, personalised tutoring is not only feasible but also scalable. AI-enabled adaptive learning can tailor educational content to each student's unique approach to learning and pace, allowing learners to either skip mastered content or spend additional time on challenging topics.

Imagine a virtual personal tutor that can spend as much time as needed on a specific topic without getting frustrated or impatient – this could be an educational game-changer. AI-enabled adaptive tutoring systems detect patterns in student data and, so, offer personalised support where needed. For example, if a student is struggling with a particular concept, AI can flag this early, allowing for

targeted interventions. In this way, AI serves as a partner in providing timely, customised support for each learner.

However, this personalisation extends beyond basic content delivery. Through predictive analysis, AI can identify students at risk of failing courses, enable early interventions before academic problems escalate, provide advanced students with challenging exercises, and analyse patterns in student data to forecast educational outcomes. In fact, AI aids students by identifying those who are at risk of failing a course and providing them with early intervention before it is too late.

By predicting the performance of the students, teachers can empower advanced students with challenging exercises, allowing them to progress without waiting for the rest of the class. This process, known as Predictive Analytics, begins with data collection (student attendance, grades, behaviour, and online activity) which are analysed by advanced algorithms to detect patterns. These patterns enable predictive models to forecast future outcomes, such as a student's likelihood of passing a course or the areas they might find challenging.

Finally, through personalisation, AI can make learning more engaging and interactive, significantly boosting student motivation. Learning can become an immersive, exciting process, where students feel empowered and curious to explore new topics.

Evidence-based decision-making

AI's predictive analytics (which when applied in education is often known as Learning Analytics) can also be used to assist educators in making more informed, evidence-based decisions. Learning Analytics' ability to process and interpret large amounts of data allows educators and other decision-makers to track learning outcomes more accurately and adjust their teaching strategies and policies accordingly. Nonetheless, despite the power of Learning Analytics, it remains crucial for humans to remain in control of the decision-making process. While Learning Analytics can provide valuable insights, it should not dictate the course of education, and final decisions should always be made by humans who can consider the broader context and ethical implications of their choices.

Promoting inclusivity and accessibility

As Kissinger (2021) and his colleagues argue in 'The Age of AI', inclusion and equity should be core principles when implementing AI in education. In fact, AI has the potential to democratise access to high-quality resources, reaching students in remote areas and detecting those at risk of falling behind.

For the 240 million children with disabilities globally who may lack access to inclusive technologies, accessible learning materials, and other essential educational support, AI offers crucial support (UNICEF, 2021). This can include natural language processing for text-to-speech conversion, translation services for multi-lingual support, adaptive technologies for various learning needs, and remote learning opportunities for geographically isolated students.

AI is particularly valuable for marginalised groups such as women in countries with restricted educational access. AI is particularly valuable for women in countries like Pakistan who do not have the luxury to leave their houses for education due to societal restrictions. Through AI-powered online programs, these individuals can access quality education and receive immediate feedback,

even without formal academic support. In online programs, AI can serve as a virtual tutor, offering resources, practice exercises, and immediate feedback, enabling these women to grow and develop even without formal academic support.

Addressing key challenges

While the benefits for education of AI are significant, we acknowledge that there does remain various challenges. However, each of these challenges may be addressed. One such challenge is fairness. It is crucial to include diverse perspectives in the development of AI, by empowering more women and underrepresented groups to enter the field. According to the Global Gender Gap Report (2023), only 30% of those working in AI are women, highlighting the need for greater diversity to ensure AI technologies are fair and inclusive. A second issue is data privacy. Before any AI technology is released, thorough testing is imperative to ensure data privacy. Transparency should also be provided to all stakeholders about how their data will be used and to what extent. A third example is cheating. Given that students may misuse AI to cheat on assessments, human insights remain invaluable when developing solutions for real-world problems where critical thinking, contextual understanding, and creativity are vital. Meanwhile, tools like GPTZero can help detect AI content, ensuring academic integrity. Finally, isolation. To combat the risk of social isolation, we need hybrid learning systems in which students take academic support from AI but are also encouraged to engage in class discussions and group projects with their classmates, fostering collaboration and the development of interpersonal skills.

Final thoughts

AI is an extremely powerful tool that has already begun to revolutionise the educational system and promises even more impact in the coming decade. The future of education looks promising. Imagine learning environments where every student receives personalised attention and support, freeing teachers to focus on meaningful interaction and mentorship, while Learning Analytics provides real-time insights into how students learn, enabling wider access to quality education for all.

Meanwhile, students can receive feedback almost straight away which helps enhance the educational process, giving them a chance to understand their mistakes and areas for improvement. This AI-generated feedback can be more accurate and without any biases that may arise from the subjectivity of human graders. In short, AI ensures evaluations are consistent and fair, mitigating the influence of personal preferences, mood, and unconscious prejudices.

In the next decade, AI will undoubtedly play an increasingly important role in teaching and learning. While challenges remain, the potential benefits far outweigh the risks—if we approach this partnership with wisdom and responsibility. By embracing AI, we can empower educators, support learners with personalised assistance, and enhance the overall learning experience.

As AI continues to evolve, so must our educational practices, to support effective learning and relevant skills for the AI era. Educators should not be afraid to innovate and experiment with AI-driven tools to create more dynamic and impactful learning environments, and to enhance and reshape the educational system and simplify life for both teachers and students.

As we have mentioned, the key to success lies in viewing AI not as a replacement for human education but as a powerful tool to enhance it. We must never lose sight of the fact that education is a deeply human endeavour, and AI should serve to complement, not replace, the human element. However, together, humans with the support of capable machines can create a future where education is more inclusive, engaging, effective and enjoyable than ever before. Through this partnership between human wisdom and machine capability, we can unlock unprecedented opportunities for learning and growth in the next decade, and beyond.

CON SIDE | THE ARGUMENT AGAINST

A synthesis of the case made by Mr Ron SALAJ and Prof Wen WEN

AI is everywhere: from autonomous vehicles and digital assistants to facial, voice, and emotion recognition technologies; from social media platforms to banking, healthcare, education, and public services. It even extends into matters of love (Samuel, 2024) and death (Roose, 2024).

AI is emerging during a moment of multiple crises. New wars, conflicts, and military coups are occurring on almost every continent, with a quarter of humanity involved in global conflicts (Al Jazeera, 2022). Meanwhile, the rapid increase of natural disasters caused by climate change made 2023 the warmest year on record (World Meteorological Organization, 2023). At the same time, the COVID-19 pandemic led to a severe global recession, the effects of which are still being felt today, especially among poorer social classes. Additionally, we are witnessing the rise of far-right politics, increasingly taking control of governments in Europe and beyond, challenging the core values of democracy.

AI is inseparable from these multiple simultaneous crises; times marked by chaos, complexity, and contradictions. In fact, AI is a “layered and interdependent arrangement of technology, institutions and ideology” (McQuillan, 2021, p. 1), a techno-political project that cannot be considered neutral. The origins of AI and its imperatives can be traced from 19th century eugenics to the Mont Pelerin Society of neoliberals and ultra-libertarians (Gebru & Émilie, 2024). For instance, Friedrich Hayek's ideas on market self-organisation resonate with the early development of connectionist AI, including the work of Frank Rosenblatt.

However, AI is neither truly artificial nor genuinely intelligent (Morozov, 2023). Its power depends on human labour—artists, writers, musicians, journalists, researchers, students—whose intellectual work is appropriated without consent or compensation and used to train AI systems. AI, too, is an illusion, as maintaining it requires significant human labour, especially for error correction and continuous adjustments (Gray & Suri, 2019).

AI may one day be remembered as the largest project built upon ‘*theft-ploitation*’, the convergence of theft and exploitation within the techno-political apparatus of AI. This includes the theft of intellectual output produced by scientists, researchers, artists, journalists, and others, and the exploitation of intellectual, cognitive, and maintenance labour. Additionally, AI relies heavily on natural resources, from minerals essential for producing chips and semiconductors to the immense water and energy consumption demanded by data centres (Crawford, 2021).

AI tools for education

Precursors of AI-driven educational tools like Pressey's and Skinner's teaching machines were deeply influenced by eugenic and behaviourist ideas of prediction, exclusion, optimisation, control, reinforcement, punishment, and reward. For example, Pressey's Teaching Machine included an optional feature that dispensed candy whenever a student answered correctly (Watters, 2021), much like contemporary AIED and EdTech platforms that reinforce "the right kind of learning behaviour" through gamification and instant gratification.

Given this backdrop, when we call for the endorsement of AIED, we must recognise and acknowledge the ideological foundations that have shaped it. AIED is not merely a neutral tool for learning enhancement; it is embedded within the same layered apparatus of technology, institutions, and ideologies that influence AI at large. Integrating AI into educational systems without critically examining these foundations risks perpetuating at scales unforeseen before existing biases and inequities in society.

Personalisation

One of the biggest promises of AI in education is personalisation through so-called 'intelligent' and adaptive tutoring systems, dialogue-based chatbots, and other forms of AI-enhanced technology. The narrative of personalisation is dominating discourse in education. AI promises to deliver cost-effective, personalised learning to children and students worldwide. However, we should recognise the '*AI hype-reality gap*': a discrepancy between the expectations and promises created by the hype surrounding new AI and the actual, empirical, tangible outcomes and independently evidenced impacts they achieve in real-world applications. Despite the ambitious promises and assertions of the commercial AIED sector, there is little robust independent evidence supporting the efficacy or safety of AI-enabled technologies in educational settings (Holmes, 2023). Conversely, an increasing body of evidence shows the serious threats and harms that AI poses to education specifically, and to democratic civil society and individual freedoms more broadly (see Williamson, Molnar, & Boninger, 2024).

Paradoxically, this push for "individualised precision" through AI personalisation reduces students to isolated data points within a neoliberal framework that undermines genuine human connections. Jean-Paul Sartre (1960) describes this as a social condition where individuals coexist in a "plurality of isolations," lacking meaningful interaction or a sense of collective identity. In many ways, the narrative of "personalisation of education" through AI-enabled tools offering data-driven, tailored learning experiences—such as the so-called intelligent tutoring systems—reproduces Sartre's concept of plurality of isolations within schools, universities, and classrooms.

Students are placed side by side, with each individual's subjectivity reduced to a series of data clusters and behaviour patterns. AI-driven tools treat them as interchangeable units within a larger AI infrastructure. Under the tyranny of AI, students and educators are compelled to perform prescribed actions within an AI system that demands conformity to AI-determined metrics, schedules, data points, classifications, labels, assessments, and automated feedback. This subjective alienation experienced by students and educators is exemplified by increasing cases of students being unjustly flagged by AI plagiarism detectors like Turnitin, even when they have not

used any AI tools (Davalos & Yin, 2024). Instead of nurturing and cultivating their intellectual curiosity, students are being subjected to new, obscure forms of intellectual humiliation.

■ Resistance

Public education must resist the narrative of personalisation in specific, and of the inevitability of AI in general. As democratic sites for social transformation, schools and universities should prioritise the agency of students and educators, rather than succumbing to the logic of AI. They should emphasise relationality and collective engagement over individualised metrics, as well as develop a new language of democracy (Giroux & McLaren, 1986) that critically examines the present and future dangerous spectres of AI looming over public education. We should also ask to which institutional spectrum should schools, as public social institutions, belong, and what future should they serve? Should they align with the manipulative institutional spectrum that prioritises the life of consumption, reduced to mere activities of produce and consume, or should they embrace the convivial institutional spectrum that encourages a life of action, fostering spontaneous, independent, and relational subjectivities (Illich, 1971)?

■ Envisioning a future

In envisioning a future for education and recognising the need for an immediate form of resistance by learners and educators, we might draw inspiration from Herman Melville's character Bartleby, whose simple yet existential refrain, "I would prefer not to," serves as an act of passive resistance against dehumanising systems (Melville, 1853). Adopting a Bartleby stance in education symbolises a collective refusal to uncritically accept AI technologies that undermine human agency and relationality. It is an immediate form of resistance that empowers students and educators to assert their autonomy against the encroachment of AI-driven standardisation.

By declaring "We would prefer not to," educators and learners can challenge the reduction of education to algorithmic personalisation and data-driven metrics, and to commercialisation, datafication, and dashboard-ification. By asserting "I would prefer not to," we choose to prioritise agency over alienation, autonomy over automation, the human over the algorithmic, the collective over the individualistic, democracy over market logic, and the transformative over the transactional. Only like this can we open new possibilities to reimagine education as an emancipatory praxis rooted in solidarity, mutual support, and critical thin.

Conclusion

As is clear from the debate, whether AI is likely to benefit education remains a polarising question. What, then, while there are such stark differences of opinion, are teachers supposed to do? Here, we make two proposals.

First, **teachers and all educators should demand better evidence for the AI tools they are being asked to integrate in their classrooms** (and not just rely on the marketing): evidence not just about whether the tool is genuinely effective (e.g., does it genuinely save teacher time, personalise learning, and enhance creativity, or the opposite?) but also evidence about the tool's safety (e.g., does it undermine student agency or mental health) and evidence for its positive impact on the

classroom (e.g., does it enhance or undermine relationships between teachers and students and between students?). To achieve this, it is likely that there needs to be clear regulation, to protect students and teachers when AI tools are being used in education, without undermining innovation. This is the approach being taken at the Council of Europe, Europe's leading human rights organisation.

Second, **teachers and all educators should demand high quality professional development and support from their governments:** training that provides them with a holistic understanding of AI; both the technological dimension of AI (how it works, to an appropriate level, and how to use it safely) and the human dimension of AI (its impact on humans, on human rights and social justice, and on the environment). In other words, all teachers and educators need to be supported to achieve an appropriate level of critical AI literacy. Only then, will they be empowered to make informed decisions about whether to use AI-enabled tools in their teaching, what tools to use, and when and how to use them; and only then, will they be empowered to support their students who are living in a world increasingly dominated by AI.



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