



International Forum on AI and Education

Steering AI to Empower Teachers and Transform Teaching

5-6 December 2022

#AIED2022

Concept Note

Background

Artificial Intelligence is part and parcel of the infrastructure of the digital transformation of education

The [‘Call to Action: Assuring and improving quality public digital learning for all’](#),¹ launched during the Transforming Education Summit (TES) in September 2022, reaffirmed that the power of the digital revolution must be harnessed to ensure that quality education and lifelong learning is provided as a public good and a human right for all, with a particular focus on the most marginalized.

The realization of the digital transformation of education requires systematic transformation covering various aspects of education, including pedagogy, curriculum content, assessment, social caring and the organization of learning, across educational institutions and in lifelong learning settings. Artificial Intelligence (AI) is part and parcel of the infrastructure of the digital transformation of education, and it plays a unique role in connecting fragmented parts of decision-making processes and enabling the creation of workflow for provision of education as a public good. AI is one of the core technologies in digital transformation, acting as a driving force and enabling the architecture for the transformative upgrading of models on using technology to serve human across sectors. Building AI into digital infrastructure can help make the EdTech architecture more reliable and cost-effective. Infusing AI-assisted solutions into education and learning management systems can enhance intelligent workflows, enable data-based monitoring, and facilitate effective human decisions.

Steer the design and use of AI to transform teaching

From using AI to ensure that the most marginalized have access to learning opportunities, to leveraging AI to enable the futures of learning we want, well-prepared teachers and effective teaching remain the

¹ <https://www.un.org/en/transforming-education-summit/digital-learning-all>

backbone of education systems to deliver the promises of public digital education. The benefits of the digital transformation of education will not be achieved if teachers are not empowered and teaching practices are not transformed. Moreover, AI will only benefit the transformation of teaching practices and education if – by design – it can enhance learner-centred pedagogical approaches and higher-order thinking while respecting ethical norms and standards.

Despite its potential to empower teachers and enhance teaching, the design and deployment of AI for teachers and teaching to date has received far less attention than AI tools designed for learners. If examined by the aims and algorithms behind teacher-facing AI tools, current AI tools are not designed to transform approaches to pedagogy, the organization of learning, and the social and emotional interaction between teachers and students.

As pointed out in the UNESCO publication [AI and Education: Guidance for Policy-makers](https://unesdoc.unesco.org/ark:/48223/pf0000376709),² AI applications designed for teaching have so far focused on replacing low-skill task units and reducing teachers' workloads by automating tasks such as assessment, plagiarism detection, administration and feedback. While this might have some benefits in contexts where teachers in general or certain subject-specific teachers in particular are scarce, the aim of replacing human teachers' functions reveals a fundamental misunderstanding of teacher agency and their essential social role in the learning process. This approach clearly undervalues teachers' unique skills and experiences, as well as learners' social and human needs.

In addition, current AI tools focus mainly on the profiling of learning content. The self-claimed use of AI to enable personalized learning in fact only allows for the assessment of the memorization of factual knowledge and falls short of enabling higher-order thinking and creative pedagogical methodologies. The design of AI algorithms and tools should be steered to open up teaching and learning possibilities that are otherwise difficult to achieve, challenge or even disrupt existing pedagogies, and augment teachers' expertise. Equally important, corresponding ethical issues need to be addressed before AI can be harnessed in real settings.

AI cannot transform teaching and education until AI technologies are designed and used at scale to drive and enable the implementation of “context-responsive learning options, pedagogies and curricula in diverse forms, assessment strategies and expected learning outcomes, from high tech to low-tech, and no-tech contexts.”³ For this to happen, the possibilities of developing and employing AI tools at scale to address more complex educational issues, such as collaborative learning or new ways to assess and accredit, should be fully researched. Relatedly, AI technologies and practices of using AI tools effectively to support innovative teaching methodologies, context-responsive learning options, competency-based assessment across schools, TVET institutions, higher education institutions, and lifelong learning settings remain to be surfaced and shared.

Develop teachers' competencies needed to work with AI to transform learning

It is widely agreed that as AI tools become more available in classrooms and other formal or informal learning settings, it is likely that teacher roles will change. Yet, it is important for policy-makers to ensure

² <https://unesdoc.unesco.org/ark:/48223/pf0000376709>

³ https://www.un.org/sites/un2.un.org/files/2022/09/sg_vision_statement_on_transforming_education.pdf

that the introduction of AI in varied education settings will protect the rights of teachers and teacher agency.

The [Vision Statement released by the UN Secretary-General during the Transforming Education Summit](#)⁴ envisaged the transformation of teachers' roles and recommended key trainings and support needed for the transformation: "Teachers must become knowledge producers, facilitators, and guides in the comprehension of complex realities. They must be trained and empowered to transcend from passive to active, from vertical and unidirectional to collaborative. They must promote learning based on experience, enquiry, and curiosity ...". To spark such a transformation, the first action required is that the capacity, agency and autonomy of teachers must be broadened.

However, when AI technologies for teachers are designed with the aim of relieving teachers of time-consuming activities such as marking assignments and repeating answers to the same academic questions, AI tools actually interfere with the teacher-student relationship and can undermine teacher agency. Teachers may, for example, lose key opportunities to learn about their students' formative strategies and capabilities with the use of AI tools to automate formative assessment and grading. In addition, when adopting intelligent tutoring systems, teachers often need to spend a great deal of time monitoring the dashboard that presents the data on students' learning processes rather than moving around classrooms to interact with students. This tends to reduce human interaction between students and teachers.

AI for teachers should be more of a technology working behind the scenes and should not disrupt human behaviours and the workflows of teaching and teacher-student interaction. Teachers will therefore also need to build new competencies to work effectively with AI especially the new skills needed to make AI-assisted decisions on effective strategies for teaching and social caring. In response to this emergent need, the [Beijing Consensus on Artificial Intelligence and Education](#) recommends that governments should "be mindful that while AI provides opportunities to support teachers in their educational and pedagogical responsibilities, human interaction and collaboration between teachers and learners must remain at the core of education. Be aware that teachers cannot be displaced by machines, and ensure that their rights and working conditions are protected." It further calls on governments to "dynamically review and define teachers' roles and required competencies in the context of teacher policies, strengthen teacher training institutions, and develop appropriate capacity-building programmes to prepare teachers to work effectively in AI-rich education settings."

International forums on AI and education: A global platform for knowledge-sharing

Since 2019, UNESCO, in cooperation with China, has been leading global efforts centred on the twin strands of AI and education, aiming to ensure that (i) the introduction of AI in education serves education as a public endeavour and a common good, and (ii) education develops the competencies needed for the AI era. The first International Conference on AI and Education⁵ was co-organized by UNESCO and the Government of the People's Republic of China in Beijing in 2019. It was during this Conference that the *Beijing Consensus on Artificial Intelligence and Education* was adopted. To follow up on the

⁴ Transforming Education: An urgent political imperative for our collective future:

https://www.un.org/sites/un2.un.org/files/2022/09/sg_vision_statement_on_transforming_education.pdf

⁵ <https://unesdoc.unesco.org/ark:/48223/pf0000370967>

implementation of the *Beijing Consensus*, the second international forum was held both online and in person in Beijing in December 2020.⁶ In December 2021, the third forum took place online and in person in Beijing,⁷ under the theme ‘Ensuring AI as a Common Good to Transform Education’. Together, the three international forums featured more than 200 interventions and presentations, and reached more than 8,000 real-time international participants and viewers from more than 150 countries. This series of the forums has aimed to become a sustainable platform to promote knowledge sharing and the achievement of international agreements in the field of AI and education.

The *Beijing Consensus* recommends that UNESCO reinforce its lead role in steering the use of AI in education across concerned sectors and mobilize the Organization’s institutes and networks, and further expand its external networks in the field of AI and education with relevant partners.

While the TES ‘Call to Action: Assuring and improving quality public digital learning for all’ focuses on assuring public digital learning opportunities for all, it is silent on how AI and big data can be used as a common good to enable the digital transformation of education. The design and use of relevant AI technologies to support the transformation of education is a convergence of two frontier areas: (1) the next-generation of AI algorithms and tools to trigger and support innovative pedagogy; and (2) the planning of prospective strategic directions and actions on the digital transformation of education. The pioneering exploration of these frontier fields of policies and practices will require collaborative deliberation, forward-looking opinions, and sharing of lessons learned from early pilot tests. There is a mounting need for a venue to facilitate thematic knowledge sharing and international cooperation in this domain.

Aim

In response to this need, the fourth edition of the UNESCO International Forum on Artificial Intelligence and Education aims to convene debates and foster knowledge sharing specifically on how to steer the design and use of AI to empower teachers and to transform teaching methodologies within the broad framework of digital transformation of education. UNESCO, China, representatives of large population countries with some of the largest public education systems, and interested international or regional organizations will co-organize a hybrid edition of the International Forum on AI and Education on 5 and 6 December 2022 under the theme *Steering AI to Empower Teachers and Transform Teaching*.

Subthemes

The Forum will be structured around the following sub-themes:

1. **Strategies for leveraging AI to enable the digital transformation of education:** The novelty and complexity of leveraging AI to enable digital transformation of education calls for the planning of forward-looking strategic directions and inter-disciplinary evidence. This session will examine the value of AI in the transformation of education as a public endeavour and share national strategies on how AI will be leveraged to transform learning, teaching, education management and provision of education while ensuring the protection of human rights, data privacy, digital inclusion and digital well-being of both teachers and learners.

⁶ <https://unesdoc.unesco.org/ark:/48223/pf0000377251>

⁷ <https://unesdoc.unesco.org/ark:/48223/pf0000381226>

2. **Steering AI by design to empower teachers and transform teaching and learning:** The transformation of education needs teachers to become micro-curriculum designers as well as facilitators and guides of “context-responsive learning options”, and AI should be designed to empower teachers in doing so. This session will share innovative AI tools designed to trigger and support the planning and organization of innovative teaching methodologies, context-responsive learning options, and competency-based assessment. It will also share innovative practices of using AI to transform teaching in school education, TVET, higher education institutions and adult education settings.
3. **Defining and developing teachers competencies needed to work in AI-rich education settings:** As AI is revolutionizing digital technologies and the digital infrastructure of education, the requirement for teachers’ capacities in using AI tools especially in making choices between machine decision and human decision, and between human-machine interaction and human interaction with students, will also revolutionize the definition of digital competencies for teachers. The session will share national and institutional frameworks, standards or training programmes on AI competencies for teachers, drawn from a global survey and call for proposals. The conceptualization of a global AI competency framework for teachers will be examined.
4. **Global partnership for centring the most marginalized with priorities for Africa:** The most fundamental commitment of digital transformation is to ensure that AI will be a common good for all to advance equity, inclusion and gender equality. AI will not transform education if it only benefits the privileged groups exclusively and widens educational inequity. This session will ally policy-makers and partners to steer policies, actions and resource mobilization to centre the most marginalized. Priority focuses will be given to Africa, Small Island Developing States (SIDS), and other marginalized learners. The session also seeks to launch or announce global partnerships for steering AI to empower teachers and transform teaching to facilitate knowledge and resources sharing.

Target Participants

The participants will include Ministers of Education and/or ICT, high-level representatives of UN agencies or international organizations, senior policy-makers, representatives of private sector partners and civil society organizations, prominent academic researchers, and managers of selected AI in education projects.

Co-organizers

The Forum is co-organized by:

- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- Ministry of Education of the People’s Republic of China
- National Commission of the People’s Republic of China for UNESCO

Working Languages

Interpretation services will be provided in English, French and Chinese.

Technical specifications

The event uses Zoom applications to support the live sessions, and uses an online conferencing website to support the registration, the update of live sessions and networking among participants. Live streaming platforms will be used to expand real-time participation.

Provisional Programme Structure

(CET Time, Paris Time)

Day 1 (5 December 2022)		Day 2 (6 December 2022)	
09:00-10:30	Opening Session and Plenary Session 1: Strategies for leveraging AI to enable digital transformation of education Sign in	09:30-11:00	Plenary Session 3: Defining and developing teacher competencies needed to work in AI-rich education settings Sign in
10:30-10:40	Break	11:00-11:20	Break
10:40-12:00	Plenary Session 2: Steering AI by design to empower teachers and transform teaching and learning Sign in	11:20-12:40	Parallel Session 3.1: Development of AI competencies for teachers Sign in
			Parallel Session 3.2: AI innovations to support teacher professional development and collaboration Sign in
			Parallel Session 3.3: Empowering women and women teachers in the digital age Sign in
12:00-13:30	Break	12:40-13:00	Break
13:30-15:00	Parallel Session 2.1: AI innovations and best practices on the use of AI in teaching, learning and learning assessment Sign in	13:00-14:30	Plenary Session 4: Global partnership for centring the most marginalized with priorities for Africa and Closing Session Sign in
	Parallel Session 2.2: AI innovations and best practices on the use of AI for learners with special needs Sign in		
	Parallel Session 2.3: Youth Forum on AI-assisted pedagogical innovations Sign in		

Stay in touch

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aied@unesco.org; literacy@moe.edu.cn



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