



世界数字教育联盟
WORLD DIGITAL EDUCATION
ALLIANCE

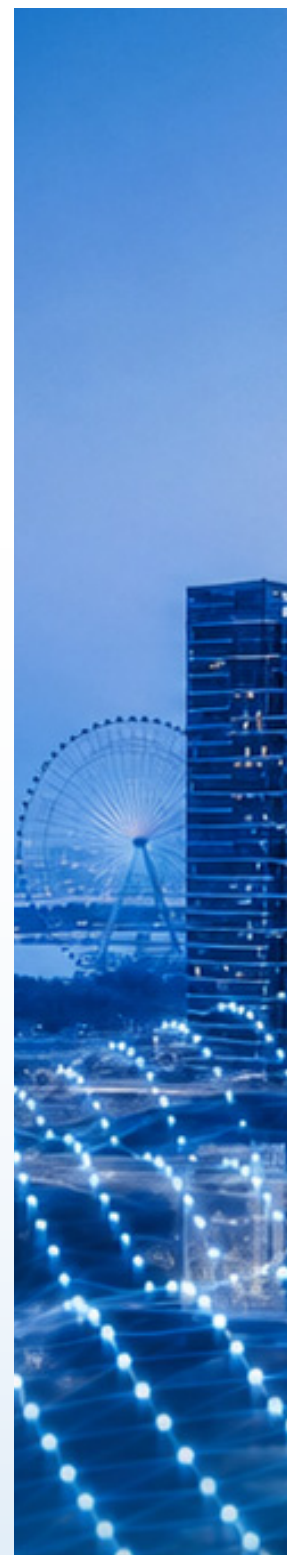


Digital Education Bulletin

Global Insights

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UNESCO

The algorithm in the room: Seeing and confronting the implications of AI for the future of education

We live in algorithmic times. Algorithmic systems, content and infrastructures that underpin artificial intelligence (AI) now impact education systems across the world. The title of this volume is a play on the expression 'the elephant in the room', which refers to any massive and far-reaching issue that is largely avoided or unaddressed. AI and other algorithmic technologies are one of these issues. They are driving profound changes to education but are often insufficiently acknowledged and discussed. This collection of 26 think pieces seeks to see and confront the 'algorithms in the room' at work in education.

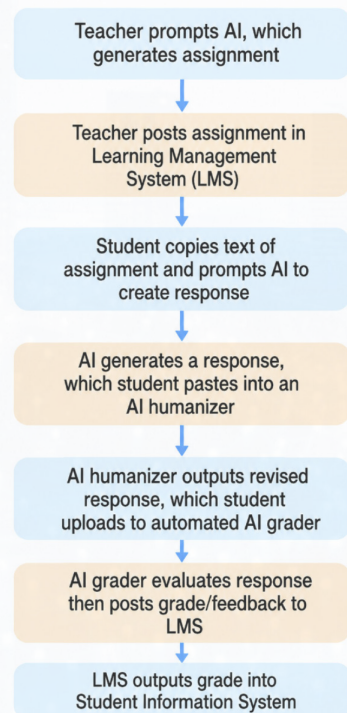
Part I Who will hold agency, autonomy and oversight?

■ Are human beings necessary to the life cycle of knowledge ?

David Ross

A teacher warns of a looming AI crisis in education: without clear guidance, learning risks falling into an uncontrollable doom loop.

The mechanics of the doom loop



© Adapted from David Ross

■ Beyond the loop: Reclaiming pedagogy in an AI age

Daniela Hau

Rethinking 'human-in-the-loop' design logic reveals the need to reassert pedagogy as the foundation of education, not a fallback to automation.

■ AI operators or creators? Two visions of agency and learning

**Kenneth Y T Lim,
Ahmed Hazyl Hilmy and
Bryan Zi Wei Kuok**

When seeking to understand how the notion of agency might evolve as learners interact with AI, scenarios play a useful part.

■ Deepfakes and the crisis of knowing

Nadia Naffi

As deepfakes blur reality, education must go beyond detection, teaching students to navigate truth, knowledge and AI-mediated uncertain.

Part II How will young people develop relationally, emotionally and cognitively?

■ Ghost in the chatbot: The perils of parasocial attachment

Clayton Ramsey

What happens when children form emotional bonds with AI chatbots? This think piece explores the risks of parasocial attachment in digital education and gaming.

■ 'I think we should tell your teacher we used AI'

Alexandra Samur

Parents and educators navigate the promises and pitfalls of AI in education, balancing ethics, authenticity and learning through evolving school experience.

■ Trauma, education and AI in conflict contexts: Care and control

Mariela Sanchez Salas

In crisis, AI promises access yet risks harm. This think piece probes education, trauma and human rights to ask whether tech will heal or contro.

Part III What will be meaningful and relevant for pedagogy and assessment?

■ Bespoke or prescribed? The myth of personalized learning

Bianca Farthing

Personalized learning is AI's promise in education – but who defines what's personal, and does it nurture strengths or just fix what algorithms see as flaws?

■ What's worth measuring? The future of assessment in the AI age

Hrishikesh Desai

The rise of AI tools disrupts traditional ideas of assessment and urges a shift towards promoting and evaluating higher-order thinking, creativity and ethical reasoning.

■ When my students told me I sound like AI'

Claudia Muellauer

When AI enters the classroom, teacher care meets student scepticism, raising questions about trust, collaboration and what meaningful feedback really means.

■ Between wood and algorithms: Crafting AI literacy in TVET

Marianne Haarsbjerg

From woodwork to algorithms, five strategies show how AI literacy in TVET can foster craftsmanship, critical thinking and ethical, future-ready learners.

■ Reimagining entrepreneurship education in the AI age

Efe Imiren and
Katerina
Nicolopoulou

As AI reshapes how we think and decide, entrepreneurship education must evolve: how do we teach opportunity, creativity and human agency in an AI-driven world?

■ AI and accessibility: Abdicating engagement?

Alice Bennett

AI promises new tools for accessibility, but true inclusion needs human engagement. Generative fixes risk masking effort with the illusion of access.

Part IV How will we think, question and express ourselves?

■ The cultural costs of AI in Africa's education systems

James Maisiri
and Solomon
Musonza

AI tools in African education risk erasing Indigenous values; local ownership and culturally grounded AI are vital to preserve knowledge and ensure equity.

■ Simulating the soul: AI and the legacy of Kazakh literature

Zhaiyk Sultan

AI can mimic literary styles, but it lacks the moral depth, historical context and critical thought that define true human creativity and intellectual legacy.

■ AI and the great linguistic flattening

Aristotelis Ioannis
Paschalidis

Default language patterns in AI-generated text raise concerns about authenticity, repetition and the growing need for skilled user intervention.

■ The disappearance of the unclear question

**Victoria Livingstone
and Jeppe Klitgaard
Stricker**

AI speeds up research, but without friction, do students lose the deep thinking that turns bad questions into meaningful learning?

Part V How will we govern education as a common good?

■ Open education principles: Resisting the metrics of AI black boxes

**Tel Amiel
Glenda Cox and
Colin de la Higuera**

As AI tightens its corporate grip, education risks deepening divides. Openness – not black-box metrics – offers a path to equity, transparency and shared progress.

■ Baumol's cost disease: Long-term economic implications where machines cannot replace humans

**Guido Appoldt and
Zhen Gong**

Education faces a cost disease: despite AI advances, productivity stagnates. This piece explores the roots of this paradox and its implications for the future.

■ Who educates the LLMs? The uncertain role of the nation- state

Camille Fabo

AI in education revives old debates on who defines and teaches 'truth'. As LLMs shape how knowledge is built and shared, tech firms, not states, could emerge as new global educators.

■ Environmental contradictions of large language models in higher education

**James O'Sullivan
and Mark Kelly**

Universities are racing to adopt AI, even as its environmental costs remain largely obscured. Can higher education pursue responsible innovation while upholding sustainability and its commitment to the public good?

■ Could zero-rating advance meaningful connectivity in education?

Kevin Martin

Can zero-rating help close education's digital divide? This think piece argues it can, if embedded in policies for meaningful connectivity, equity and governance.

Part VI How might AI affect imagination about the future?

■ AI labs and the great academic migration: A speculative scenario

James Ransom

In 2030, academia has changed. As AI labs rise, universities adapt, and researchers like Professor Wright straddle both worlds in this speculative glimpse into the future.

■ AI and education for collective intelligence: A futures perspective

**Imogen Casebourne
and Rupert Wegerif**

Education plays a vital role in cultivating collective intelligence, the capacity to think and act together to address global challenges. Could AI amplify education for collective intelligence, or undermine it?

■ After AI

Serge Pouts-Lajus

The future of AI is far from settled. This author argues that education should focus on preparing people not only to adapt to the unknown futures that awaits them but also to help change them.



For more details, please visit the link below:

<https://unesdoc.unesco.org/ark:/48223/pf0000399335/PDF/399335eng.pdf.multi>



Reference:

UNESCO. (2026). *The algorithm in the room: Seeing and confronting the implications of AI for the future of education.*

<https://doi.org/10.54675/PMRO5023>

UNICEF

From Digital Access to Digital Competence: A Comprehensive Analysis of Digital Competence Development in Kosovo's Pre-University System

On 26 August 2026, UNICEF Kosovo in partnership with the Ministry of Digitalization and Public Administration and the Ministry of Education and Science launched the study "From Digital Access to Digital Competence: A Comprehensive Analysis of Digital Competence Development in Kosovo's Pre-University System – Roadmap for Digital Education Reform."

“

At the centre of the digital transformation of education should not be technology, but the student and the teacher. The goal is for technology to help us provide higher-quality, more inclusive education that prepares our young people for the future.

”

Acting Minister of Digitalisation and Public Administration, Mr. Lulëzon Jagxhiu, said

“

We see digitalisation as a necessity of our time, but also as an opportunity: an opportunity to make a leap in quality, access, greater equality and inclusiveness within our education system. The Digital Roadmap provides us with a solid basis for decision-making to make the most of this opportunity.

”

Acting Deputy Minister of Education and Science, Mr. Përparim Kryeziu, said



The study provides a comprehensive assessment of digital competence development in Kosovo's pre-university education system, examining student and teacher digital skills, curriculum integration, policy frameworks, infrastructure, and institutional readiness. It also presents a roadmap with practical recommendations to advance digital transformation across the education sector.

The integration of digital competences into Kosovo's pre-university education system is a strategic imperative for preparing future-ready students and workers capable of thriving in a digital society and economy. Globally, digital literacy has become a foundational skill, and for Kosovo this is a pressing issue as nearly two-thirds of its workforce needs digital upskilling representing the highest proportion in the Western Balkans (World Bank, 2024).

Similarly, student performance in international assessments such as PISA1 (Program for International Student Assessment) and ICILS2 (International Computer and Information Literacy Study) reveals significant gaps in foundational learning and digital readiness.



The objective of this report is to present the current status of digital skills and competences in Kosovo's pre-university education by providing a detailed account of student and teacher digital competences, key barriers and enablers, and the contextual factors affecting digital skills development.

In particular, it provides a detailed account of Kosovo's education system in relation to student digital competence, teacher digital readiness, policy governance, infrastructure; reviews the competency-based curriculum and maps it against EU and international frameworks to identify gaps and areas for alignment; analyzes current tools for assessing digital competence among students and teachers; collects

key stakeholders' perspectives and practical insights on digital skills integration into Kosovo's education system; and finally proposes a Theory of Change (ToC) with an actionable roadmap with clear implementation actions to foster digital competence enhancement for students and teachers.



For more details, please visit the link below:

https://www.unicef.org/kosovoprogramme/media/8291/file/Report_ENG.pdf.pdf



Reference:

UNICEF Kosovo Programme. (2026, August 26). *Ministry of Digitalization and Public Administration and Ministry of Education and Science in partnership with UNICEF present roadmap for digital education reform*. UNICEF.

<https://www.unicef.org/kosovoprogramme/press-releases/ministry-digitalization-and-public-administration-and-ministry-education-and-science>

World Bank (2024). Kosovo: Digital Readiness Assessment of the Education System. <https://hdl.handle.net/10986/42761>

UNESCO

The Launch of Outlook Study on Artificial Intelligence and Gender in South Asia



New Delhi, 9 July 2026: UNESCO's Regional Office for South Asia today launched the Outlook Study on Artificial Intelligence and Gender in South Asia, the first regional assessment of women's participation in artificial intelligence (AI) across Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka. Produced by the UNESCO Women for Ethical AI (W4EAI) South Asia Chapter, the report maps women's participation across the AI ecosystem — from education to entrepreneurship, revealing how barriers accumulate across the AI pipeline and limit access to leadership.

Higher education does not translate into AI careers

Across South Asia, women account for only about one-third of STEM students. Progress in women's access to higher education has not consistently translated into participation in AI-related disciplines. In Maldives, women make up nearly 78 per cent of university students, yet only about 2 per cent enrol in science and technology programmes. In Nepal, women represent just 24 per cent of computing and IT enrolments, while in Bangladesh they account for only one in five STEM graduates. In India, women have reached near parity in science disciplines, but men continue to dominate engineering and technology enrolment.





Women contribute to AI research, but rarely leads it

A bibliometric analysis of AI publications between 2015 and 2025 shows that while 71.76 per cent of publications across the six countries include at least one woman author, women hold only 26 per cent of corresponding or primary authorship positions—roles that typically reflect research leadership and intellectual ownership. Country-level disparities are particularly pronounced: male corresponding authors produce 2.7 times more AI publications than women in India, eight times more in Bangladesh and nearly 14 times more in Maldives. Sri Lanka records the narrowest gap.

Highest-value AI roles remain dominated by men

Globally, women represent 41.2 per cent of the overall workforce but only 28.2 per cent of the STEM workforce. In AI, women are significantly less likely than men to report AI engineering skills on LinkedIn. The study finds that women are concentrated in upstream data preparation and downstream service functions, with limited representation in model development—the stage where technical authority, innovation, intellectual property and higher-value employment are concentrated. LinkedIn data from 2024 show that women account for only 29.92 per cent of LinkedIn users in India who report AI engineering skills, compared with 20.57 per cent in Nepal and 15.64 per cent in Bangladesh.

Women entrepreneurs continue to face barriers to investment

Women's participation in AI entrepreneurship remains constrained across the region, not by lack of ambition but by unequal access to technical expertise, finance and institutional support. In India, only about 10 per cent of AI start-ups have at least one woman founder. In Bangladesh, women account for just 7.2 per cent of entrepreneurs overall. Access to investment also remains limited: fewer than 1 per cent of India's estimated 10,000 angel investors are women.

“

Artificial intelligence is emerging as one of the defining technologies of our time. It could be an accelerator of gender equality — expanding access to knowledge, services and opportunity. But AI systems can just as easily reproduce or even exacerbate existing inequalities when they are built on biased data or exclude diverse voices. This study is UNESCO's contribution to helping South Asia choose the first path, not the second.

— **Tim Curtis**

Director & Representative, UNESCO Regional Office for South Asia

Women and girls in South Asia are being left out of the AI story — not because they lack ability, but because the systems around them have not been designed with them in mind. What we need is a two-pronged approach: AI education alongside scientific temper — critical, analytical thinking built from the school level upwards.

— **Dr. Bhavani Rao**: Dean, School of Social and Behavioural Sciences, Amrita University, and UNESCO Chair on Gender Equality and Women's Empowerment

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For more details, please visit the link below:

<https://www.unesco.org/en/articles/unesco-launches-outlook-study-artificial-intelligence-and-gender-south-asia>



unesco

Digital Learning Week

Education in the age of AI

Facts | Frictions | Frontiers**8-11 September 2026 - Paris, France**

Framing

The influence of artificial intelligence (AI) in education continues to escalate. AI tutors are reaching learners who have never had a tutor. AI schools and universities are opening. 'Agentic' AI systems are now able to browse and act on their own, without human prompts. Synthetic research is flooding peer review pipelines. Ghost learners are faking classroom presence. Meanwhile, between the wonder and the alarm, education leaders worldwide face pressures to respond with urgency, yet with incomplete evidence. Digital Learning Week 2026 offers an annual reckoning with these fragmented realities. This year's programme is built on three themes that map the education terrain in the age of AI: Facts, Frictions and Frontiers.

Aim and objectives

Digital Learning Week 2026 will convene bold conversation about facts, frictions and frontiers in education in the age of AI, weaving together diverse voices and viewpoints, and serving as a compass for collective sense-making and action taking. Throughout the week, governments, private sector actors, researchers, students and educators will shape narratives that promote the public purpose of education.

Digital Learning Week 2026 will engage AI architects directly on the growing autonomy and 'unknowability' of emerging AI models and their implications for privacy, safety and data sovereignty. It will spotlight pioneers of community-led tech models that are breaking barriers of inequality and exclusions, amplifying the voices of students and teachers from diverse contexts, ensuring that lived experience guides policy and practice and helps chart more inclusive, equitable and human-centred futures for education in the age of AI.

Through an engaging programme of ministerial roundtables, multi-stakeholder dialogues, public lectures, workshops and live demonstrations, the objectives of Digital Learning Week 2026 are to:

• **Take stock of emerging evidence, knowledge and actions**

Serving as a global clearinghouse for emerging research, knowledge products, strategies and actions on tech and AI in education. Evidence is openly shared, debated and stress-tested against real-world conditions, policy constraints and classroom realities that participants live and work in every day, alongside the launch of UNESCO-led strategic frameworks for action: from policy briefs to 'readiness' frameworks.

• **Invite critical reflection and creative exploration**

Moving beyond reactive policy and practice to frame the powerful, often hard questions that the age of AI demands. Deliberate spaces for reflection and creative conversation allow participants to challenge prevailing assumptions and collectively design futures where human agency remains the primary architect of education.

• **Host strategic dialogues and capacity building**

Brokering constructive exchanges between AI architects, private sector actors, education leaders, academics, students and teachers at the classroom frontline. By convening divergent perspectives in high-stakes forums, the event engages and moves beyond debate toward relevant practical.

• **Engage futures and anticipatory strategies**

Employ futures thinking to open up collective imagination to new possibilities for sustaining the public purpose of education in the age of AI.

Participants

Ministers and policy-makers, heads and representatives of UN agencies and international organizations, development partners, private actors, civil society organizations, youth groups, students, teachers, administrators, researchers and education practitioners at all levels.

Programme

	Friday 11 September
All day	Strategy labs



<https://www.unesco.org/en/weeks/digital-learning?hub=83250>



Education Ministers call for education to remain a common good in the age of AI at UNESCO's Digital Learning Week

Over 25 Ministers and designated representatives responsible for education from around the world today adopted a joint statement calling for education to be sustained as a human right and a common good in the age of artificial intelligence (AI).



The Ministerial Statement, presented at UNESCO Headquarters in Paris on 8 September during **Digital Learning Week 2026**, sets out shared priorities for ensuring that the terms on which AI is integrated into education are shaped through deliberative governance, public accountability and respect for the rights of learners and teachers.

Under the theme "Education in the age of AI: Facts | Frictions | Frontiers", Digital Learning Week 2026 is bringing together over 1,500 participants in Paris and thousands more online, including ministers of education, high-level experts, representatives of the technology industry, educators and students.

The **Ministerial Statement** acknowledges the profound shifts AI is creating, including changes in how learners think, how teachers exercise professional judgement, and how learning is assessed. It notes that while AI holds the potential to extend access and support learners, these benefits are conditional on deliberative governance, human support and adequate preparation. Crucially, the statement affirms that learning is not served when AI substitutes for human relationships and human judgement.

“

The Ministerial Statement is a clarion call for sustaining the public interest, critical understanding, teacher agency, and solidarity. How we integrate AI in education is a matter of public decision and public accountability.

— Qun Chen

UNESCO Assistant Director-General for Education

”

Eight priorities for action

The Ministerial Statement outlines eight priorities for action, committing to:

▶ **Restore public-interest conditions** to ensure AI systems are auditable, data portable, and subject to public oversight, even when they reach learners through free tiers, donations, and vendor agreements.

▶ **Protect the development of critical understanding** and using AI that prompts learners to reason and perform cognitive work, and by investing in AI competencies for teachers and students drawing on UNESCO's twin AI Competency Frameworks.

▶ **Cultivate teacher agency** through investment in teacher preparation and professional development, and by ensuring that teachers take part in decisions about which systems enter their classrooms. The statement emphasizes that AI must support and not replace their professional contribution and judgement.

▶ **Promote age and developmentally appropriate AI and safeguard learners**, with approaches grounded in children and young people's rights, evolving capacities and educational needs, and with the ability to pause or discontinue the use of AI where warranted.

▶ **Govern data in education in the public interest** recognizing learners and teachers, and children in particular, as rights-holders over their own data, and involving them in decisions about systems that collect and act on their data.

▶ **Integrate equity and inclusion by design** including through inclusive and multilingual design and the capacity to evaluate AI systems across the languages, abilities and contexts of the learners who will use them.

▶ **Count the total costs** of ownership before adopting AI, favouring interoperability, portability, and open-source systems to ensure that education systems can change course, if needed.

▶ **Build and pool AI governance** capacity both nationally and regionally, to ensure that no education system faces the concentrated supply of AI systems alone.

A call to action

The Statement urges providers of AI systems to provide evidence of educational benefit before deployment, make their systems explainable and auditable, and accept accountability for harm. It also calls upon the international community to support education systems where capacity is least developed, and invites UNESCO to continue to convene global dialogues, monitor how AI is reshaping education's public purposes, and report on progress and inform policy.



For more details, please visit the link below:

<https://www.unesco.org/en/articles/education-ministers-call-education-remain-common-good-age-ai-unescos-digital-learning-week?hub=83250>

OECD

PISA 2025 Results (Volume I): Future-Ready Students



PISA 2025 Results (Volume I)

Future-Ready Students



At 9:30 a.m. Paris time on 8 September 2026, the Organisation for Economic Co-operation and Development (OECD) officially released *PISA 2025 Results (Volume I): Future-Ready Students*.

46%

of students in OECD countries use AI chatbots weekly or more to help them learn

28%

of students in OECD countries say their fellow students are distracted by the use of digital devices during most or every science class

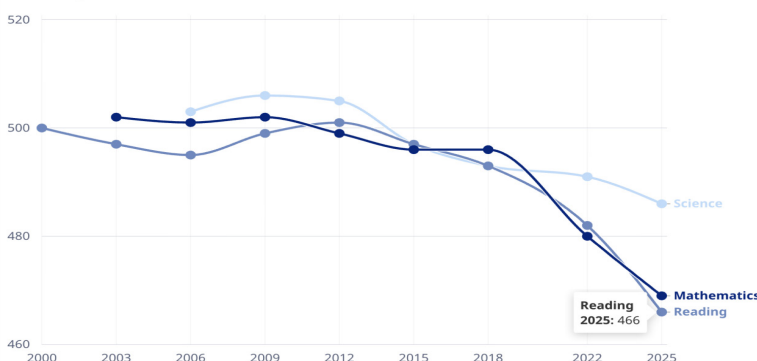
76%

of students in OECD countries feel they belong at school

Education performance continues to decline, with huge drops in reading

The PISA results reveal an uneven picture of educational performance, with learning outcomes largely stagnating or continuing to decline in many countries. In science, the main focus of PISA 2025, average scores fell modestly across OECD countries between 2015 and 2025, while remaining broadly stable in other countries and economies. In mathematics, average scores fell by 22 points between 2015 and 2025 across the OECD, with performance also declining among non-OECD members. Reading recorded the steepest drop, with scores falling by 28 points across OECD countries and by 16 points among other countries and economies between 2015 and 2025.

Trends in performance over time in science, reading and mathematics
OECD average



All mean-performance estimates are statistically significantly different from the PISA 2025 estimates, except for science in PISA 2022.
Source: OECD (2026), *PISA 2025 Results (Volume I)*

The relationship between AI use and student performance is complex

How AI use relates to student performance is complex, varying with how students use it and what for. PISA data show that students who use AI for specific schoolwork tasks, such as summarising texts, drafting or conducting research, attain lower scores in science than students who do not use AI. In these scenarios, students who do not use AI outperform those who do, on average, by

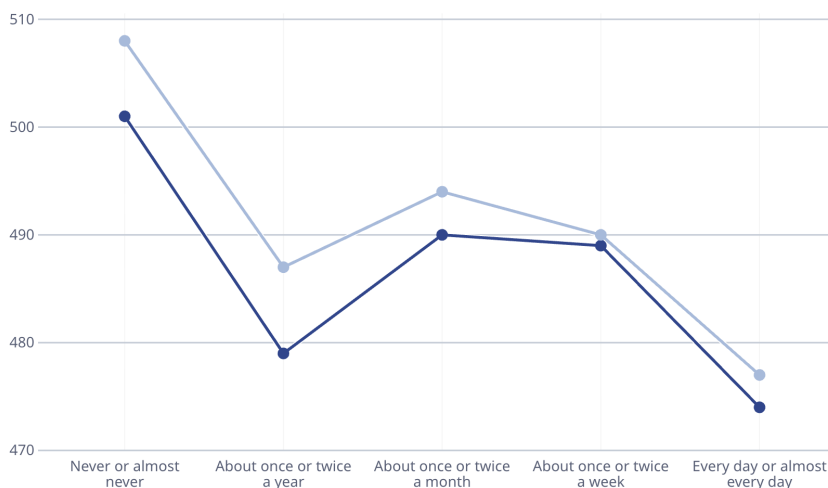
around 20 points – equivalent to being around one year of schooling ahead of their peers. However, weekly users of AI for general purposes have similar performance outcomes to non-users. Students who regularly use AI for general purposes, and have learning opportunities at school to develop AI literacy skills, tend to have slightly higher scores in science. However, these opportunities are more common among socio-economically advantaged students, risking a growing AI divide.

Mean score in science, by frequency of AI use for schoolwork

Based on students' reports, OECD average

To summarize a text I had to read ▼

■ Mean science score (unadjusted) ■ Mean science score (adjusted for socio-economic status)



Mean scores adjusted for socio-economic status are predicted science scores obtained from separate regressions of science performance on the frequency of each type of AI use, after accounting for students' socio-economic status.

Source: OECD (2026), [PISA 2025 Results \(Volume I\)](#)

Student sense of belonging at school improves

The extent to which learners feel included, accepted and connected to others is related to learning outcomes. According to PISA, students' sense of belonging at school has improved since 2022. In 39 education systems, a larger share of students reported feeling that they belong at school. On average across OECD countries, 76% of students reported feeling that they belong at school. The share reached 90% in Spain, followed by Japan. At the other end of the scale, 64% or less felt they belong at school in Denmark, Poland, Italy and Lithuania. Girls reported a significantly weaker sense of belonging than boys, and socio-economically disadvantaged students report feeling less like they belong than advantaged classmates.

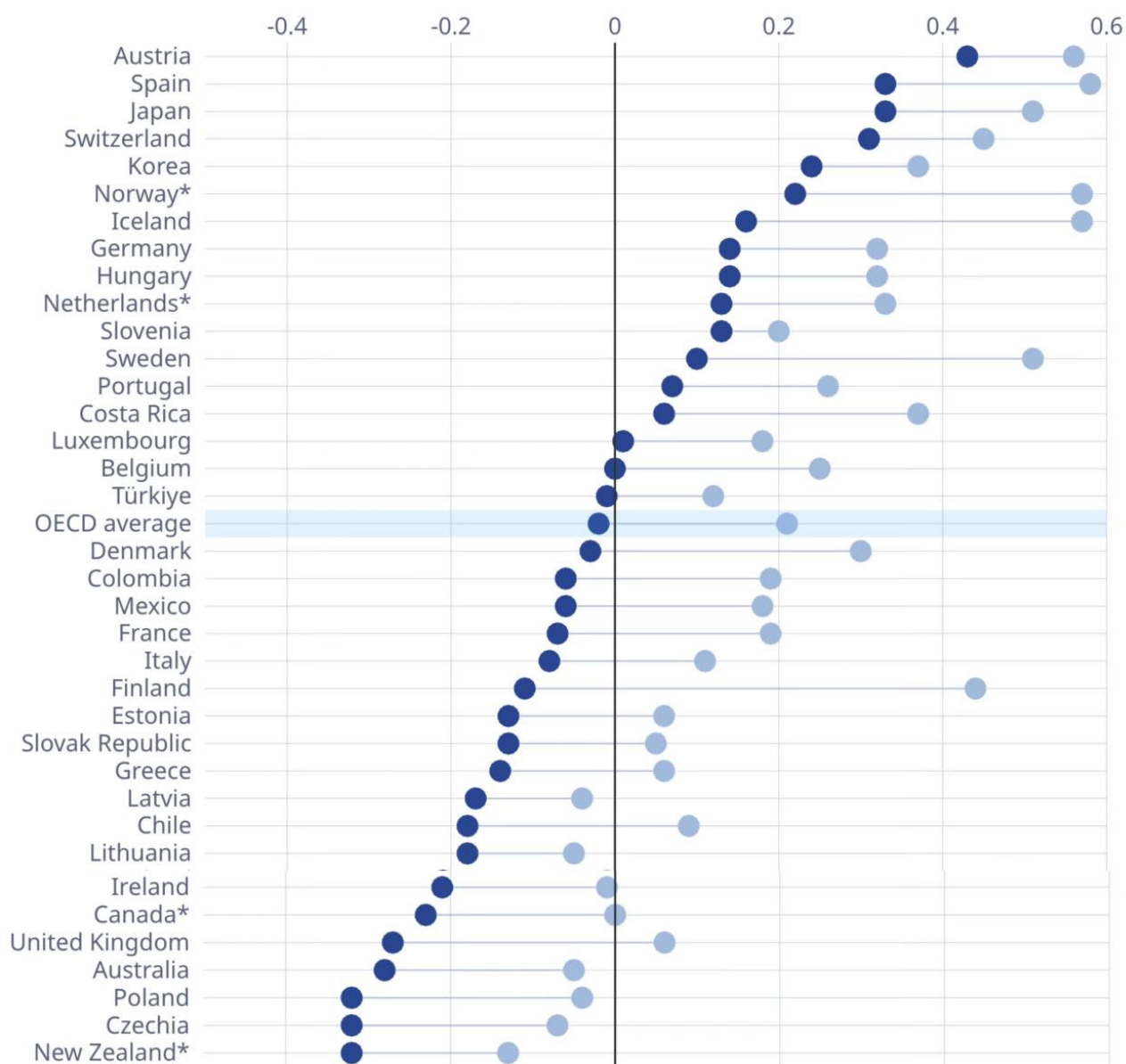


Students' sense of belonging

Mean index of sense of belonging at school, by gender

OECD ▼

● Girls ● Boys



0 is a mean and 1 is standard deviation across OECD countries. B-S-J-Z: Beijing, Shanghai, Jiangsu and Zhejiang.

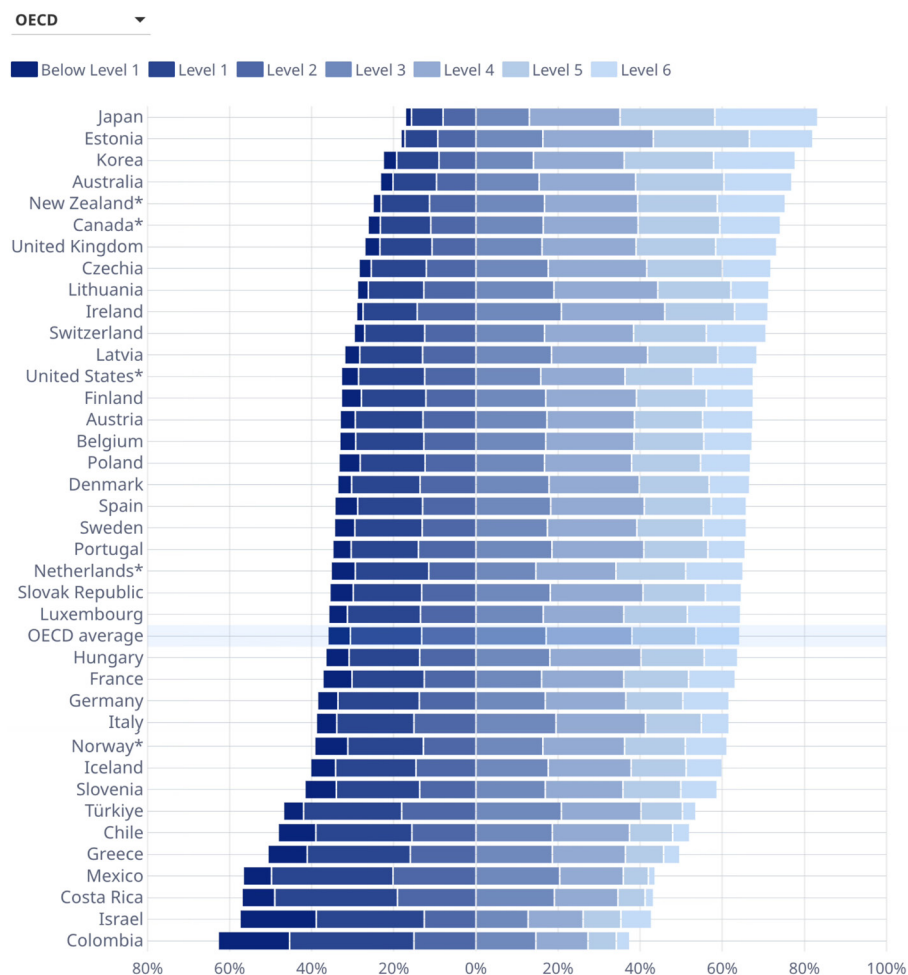
* Caution is required when interpreting estimates because one or more PISA sampling standards were not met.

Source: OECD (2026), [PISA 2025 Results \(Volume I\)](#)

Solid computational problem-solving skills are widespread

PISA 2025 introduced a new assessment focusing on 15-year-olds' computational problem-solving skills, examining their capacity to use modelling and programming tools, conduct experiments and build, design and develop digital products. Although there is no formal baseline proficiency threshold on this scale, Level 3 marks the point at which students begin to demonstrate sufficiently solid knowledge and skills to progress rapidly. About two-thirds of students across OECD countries performed at Level 3 or above, and around a quarter reached the two highest proficiency levels (Levels 5 or 6). Students in Macao (China), Singapore and the Chinese provinces/municipalities of Beijing, Shanghai, Jiangsu and Zhejiang had the highest mean scores (572, 563 and 560 mean score points, respectively). The average score among OECD countries is 500 score points.

Students' proficiency in computational problem-solving



B-S-J-Z: Beijing, Shanghai, Jiangsu and Zhejiang.

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met.

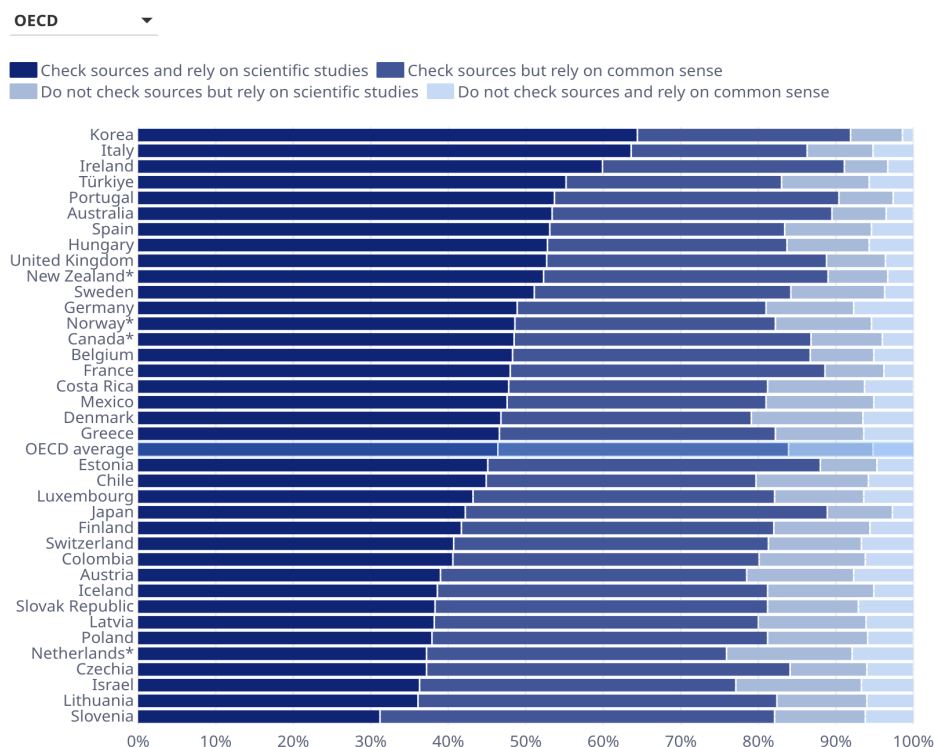
Source: OECD (2026), [PISA 2025 Results \(Volume I\)](#)

Over half of students may be vulnerable to misinformation and disinformation

Students live in environments in which information from unreliable sources is abundant and often difficult to distinguish from trustworthy evidence. In this context, it is not enough for students simply to endorse fact-checking in the abstract. They also need to learn when and how to weigh evidence, question intuitive claims and judge the reliability of different types of information. On

Students' epistemic profiles

% of students, by epistemic profile



B-S-J-Z: Beijing, Shanghai, Jiangsu and Zhejiang.

* Caution is required when interpreting estimates because one or more PISA sampling standards were not met.

Source: OECD (2026), *PISA 2025 Results (Volume I)*

average across OECD countries, fewer than half of students (46%) reported both checking the credibility of information sources and placing greater trust in scientific evidence than in common sense. By contrast, 37% reported checking sources but relying on common sense, while 11% reported trusting scientific evidence without verifying sources. A further 5% reported neither checking sources nor prioritising scientific evidence. This suggests that a large share of 15-year-olds may be vulnerable to misinformation and disinformation.



For more details, please visit the link below:

https://www.oecd.org/content/dam/oecd/en/publications/reports/2026/09/pisa-2025-results-volume-i_5265bfb1/73451bc5-en.pdf



Reference:

OECD (2026), *PISA 2025 Results (Volume I): Future-Ready Students*, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/73451bc5-en>.

Best Practices in AIED (2026)

"Minzhi Xinyu" AI-Powered Mental Health Support System: A ScenarioDriven Approach to Adolescent Psychological Well-being

▷ Minhang District Institute of Education, Shanghai, China

Background

Adolescent mental health has emerged as a critical global concern. In China, the detection rate of depression among teenagers reaches 14.8%, with overall psychological issue prevalence at 17.3%. Minhang District, serving approximately 208,000 K-12 students across 147 schools, faces a significant resource gap: only 213 full-time and 806 part-time mental health teachers, with nearly half dedicating less than 50% of their work time to psychological services. Traditional counseling models struggle with limited coverage, slow response times, and insufficient professional depth. Students often hesitate to seek help due to stigma, privacy concerns, or lack of accessible channels, while teachers face challenges in early identification and timely intervention.

● The "Minzhi Xinyu" initiative was launched to address these pain points through digital transformation. Implementation objectives include:

(1) Expanding accessible, low-threshold psychological support to break help-seeking barriers

(2) Enhancing screening accuracy and early warning capabilities through data-driven approaches

(3) Empowering teachers with intelligent tools to improve intervention efficiency

(4) Fostering a collaborative ecosystem involving schools, families, and medical institutions. By integrating AI large model technology with professional psychological expertise, the project aims to shift from reactive crisis management to proactive, development-oriented mental health promotion, ensuring every student receives timely, personalized support

Case Implementation Status

1. Demand Analysis and Co-Design

In 2025, Minhang District conducted a comprehensive survey among 122 full-time mental health teachers to inform system design. Key findings revealed three priority needs: (1) 92.62% of teachers requested intelligent assessment support to integrate multimodal behavioral data for dynamic psychological profiling; (2) 79.51% emphasized the need for machine learning-based crisis recognition models with tiered early warning mechanisms; (3) 77.87% advocated for AI psychological assistants with natural language interaction capabilities to provide 24/7 emotional support while respecting student privacy. These insights directly shaped the functional architecture of "Minzhi Xinyu".

2. Technology Development and Personalized Customization

Collaborating with iFLYTEK and East China Normal University (ECNU), the project developed three core technological components:

- **Adolescent Mental Health Vertical Large Model:** Built upon the Spark Large Model, fine-tuned with 1B+ professional psychological data, including 400K+ journal articles, 1,500+ specialized books, and 1M+ anonymized counseling dialogues. The model can identify over 100 typical adolescent psychological issues (e.g., depression, academic anxiety, social anxiety) and provide evidence-based intervention strategies.
- **AI Multimodal Screening Digital Avatar:** Co-developed with depression experts from Beijing Anding Hospital, this tool integrates 18 data modalities (speech, language, facial expressions, heart rate) to conduct interactive psychological assessments. Validation studies showed 95.5% consistency with specialist diagnoses in clinical settings and 89.4% accuracy in school-based screening, outperforming traditional scales by 25.6%.
- **"AI Psychological Partner" Chatbot:** Designed with input from ECNU's psychology faculty, this 24/7 accessible virtual companion supports students through voice, text, and video interactions, offering empathetic listening, cognitive reframing, and stress management techniques.

3. Application Optimization and Pilot Implementation

The system was first piloted in 40+ schools, with iterative optimization based on user feedback:

- **Screening Workflow:** 21 schools conducted 34,017 student screenings, with 791 flagged for follow-up. AI-generated preliminary reports reduced manual analysis time, enabling teachers to focus on high-risk cases. Schools like Qibao Xindu established a three-tier assessment mechanism: universal screening, individual assessment, and developmental evaluation.
- **Counseling Integration:** The "AI Psychological Partner" was introduced as a supplementary channel alongside traditional counseling. In pilot schools, weekly counseling sessions increased from 3-5 to 9-15 per school, with coverage expanding from <10% to 30%. The system's "online appointment + offline follow-up" model reduced help-seeking barriers.
- **Multi-Endpoint Accessibility:** Students access self-help resources via web, tablet, mini-program, and physical "psychological corners", completing 6,440 self-assessments, 4,996 stress-relief exercises, and 3,365 course modules independently.
- **Early Warning System:** A multi-source integration framework combines scale results, teacher/parent reports, AI monitoring, and hotline data to trigger automated risk alerts and intervention workflows, improving closed-loop intervention rates.

校名称	覆盖学 生数	学生使用次 数 (通数)	与小星对话 (问答) 次数	用户会话总 时长 (分)
上海市闵行区田园外国语中学	553	554	2549	755
华东理工大学附属科技高中	131	555	2244	856
上海市七宝中学附属鑫都实验中学	2732	255	1082	280
上海市闵行区七宝文来学校	1230	83	339	91
上海市闵行区马桥复旦万科实验中学	1300	42	249	215
华东师范大学第二附属中学紫竹校区	1391	39	133	26
上海市七宝中学附属闵行金都实验中学	942	18	130	48
上海市闵行区七宝第三中学	1672	12	129	141
闵行中学附属实验中学	1	34	125	27
华东师范大学第二附属中学附属初级中学	1605	17	101	28
七宝中学	2542	7	51	19
上海市罗阳中学	1021	19	40	5
上海市闵行区君莲学校	20	8	39	34
上海市闵行区教育学院	20	6	22	4
上海市航华中学	1190	6	22	5
华东师范大学附属闵行永德学校	1027	4	16	5
上海中医药大学附属闵行晶城中学	1336	3	5	0
上海市闵行区浦江第一中学	302	2	4	0

Figure 1 Pilot schools

4. Teacher Capacity Building

Recognizing that technology alone cannot replace human expertise, the project implemented a tiered training program: specialized workshops on AI tools and crisis intervention for mental health teachers; general literacy training for homeroom and subject teachers; and regular case-sharing sessions to promote best practices. By 2026, the plan includes launching an "AI Psychological Consultant" module to further support all teaching staff.



Figure 2 "AI Psychological Consultant" module

Case Innovation and Breakthroughs

1. Main Innovation Content

- **Paradigm Shift in Service Delivery:** Transitioning from passive problem identification to proactive developmental guidance, from experience-based judgment to data-driven decision-making, and from school psychologist-centric to whole-school mental health promotion.
- **Scenario-Based AI Integration:** Rather than deploying generic chatbots, the system embeds AI into specific educational scenarios (e.g., post-screening follow-up, break-time counseling, exam stress management), ensuring contextual relevance and pedagogical alignment.
- **Human-AI Collaborative Workflow:** Establishing clear role boundaries where AI handles initial engagement, routine support, and data aggregation, while human psychology teachers focus on complex cases, ethical oversight, and relationship-building.

2. Technology Breakthrough Content

- **Multimodal Emotion Recognition:** Students using self-reported scales may have a sense of avoidance, with an average accuracy rate of only 63.8%. And AI multimodal screening, through real-time face-to-face interaction between digital humans and students, comprehensively evaluates and analyzes 18 types of information generated, including text, speech, and facial expressions. The accuracy of AI enabled psychological screening has increased by 25.6% compared to traditional scales.
- **Domain-Specific Large Model Fine-Tuning:** Personalized psychological companionship is achieved through fine-tuning and engineering iteration training of multi personality MBTI virtual characters. The coverage rate of personalized psychological counseling for students has increased from 10% to over 70%.
- **AI Psychological Crisis Warning and Intervention:** The "Minzhi Xinyu" system integrates a dynamic early warning algorithm capable of real-time detection of psychological crisis signals in students. It enables proactive prevention and continuous risk monitoring, significantly reducing the likelihood of psychological crises. The system automatically triggers alerts and intervention workflows, promptly notifying school psychological counselors to provide timely emotional support and psychological intervention.

These technological innovations contribute to educational digital transformation by demonstrating how AI can augment—not replace—professional judgment, while providing scalable solutions to resource-constrained environments.

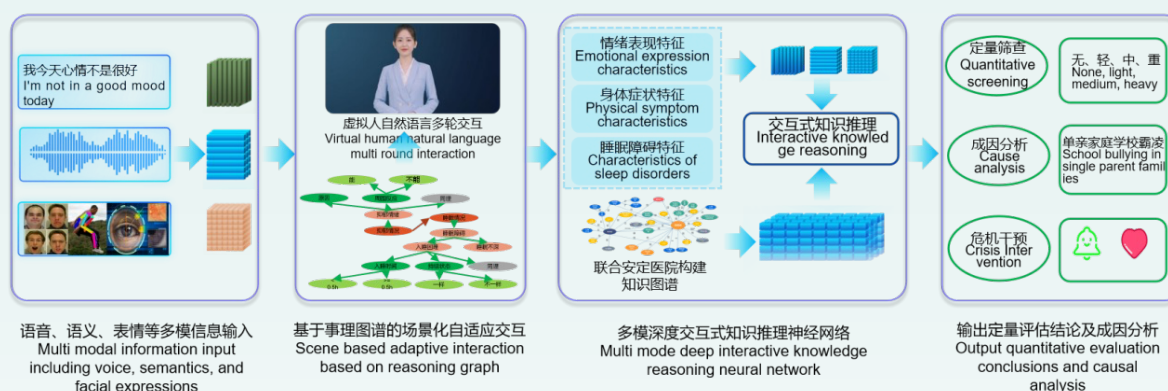


Figure 3 Technology Roadmap of "Minzhi Xinyu" system

3. Application Practice Breakthrough Content

- **Breaking Help-Seeking Barriers:** By offering non-judgmental AI interactions with imperceptible student assessments, the system addresses adolescents' reluctance to disclose struggles to adults, particularly for stigma-sensitive issues.
- **Data-Informed Resource Allocation:** Aggregated, anonymized usage data helps administrators identify school-level trends (e.g., exam-period anxiety spikes) and allocate counseling resources proactively.



心理资源推荐 Psychological Resource Recommendation

Figure 4 Psychological Resource Recommendation

- **Family-School-Medical Collaboration:** The platform's shared data framework (with appropriate privacy safeguards) enables coordinated care, reducing fragmentation in student support services.

These practices offer valuable insights for basic education development in China and beyond, particularly in scaling personalized support within large, diverse school systems.

4. Intellectual Property Status

The "Minzhi Xinyu" system is developed through a public-private partnership between Minhang District Education Commission and iFLYTEK Co., Ltd. Core intellectual property rights are distributed as follows:

(1) The underlying Spark Large Model and related AI technologies are owned by iFLYTEK

(2) The adolescent mental health vertical model and application-specific adaptations are jointly developed, with usage rights granted to Minhang District for educational purposes

(3) All student data collected through the system remains under the governance of Minhang District Education Commission, in compliance with China's Personal Information Protection Law and educational data security regulations. No third-party intellectual property is used without proper licensing



For more details, please visit the link below:

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Pages 560–567



Best Practices in AIED (2026)

An Applied Educational Case Study on Artificial Intelligence Literacy for NonTechnical University Students

▷ Nofe Ateq Alganmi

Faculty of Computing and Information Technology, King Abdulaziz University,
Saudi Arabia

Case Background

This paper describes a national AI-for-All educational intervention initiated by King Abdulaziz University (KAU), in strategic partnership with the Saudi Ministry of Communications and Information Technology (MCIT) and international industry partner Microsoft, to promote artificial intelligence (AI) literacy among non-technical university students. The challenge aims to fill a fundamental gap in education: despite AI being well on its way to penetrate all professions, there are virtually no opportunities for students not majoring in computer science to receive systematic AI education.

Consistent with the directions of Saudi Vision 2030 and national digital transformation initiatives, the project embeds Microsoft AI-900: Azure AI Fundamentals into accredited university elective courses (CPCS-335 and CPCS-336) so as to prepare students from science, medical, humanities, and arts colleges to acquire a basic understanding of AI, its applications, and ethical considerations without requiring a programming background. The pedagogical model is explicitly based on Bloom's Taxonomy, reinforcing cognitive understanding through hands-on application and responsible AI values.

In the cloud-based no-code learning environment, students work with real AI services such as computer vision, natural language processing, document intelligence, and generative AI. The impetus is on project-based learning, transdisciplinary cooperation, and ethical reflection, enabling verifiable learning objectives and real-world applicability.

The program has already engaged 7,298 students at KAU, with the adoption or preparation of nine other Saudi universities actively supported by faculty capacity-building across the country. Operating under a comprehensive, all-in-kind, zero-cost scheme, the model is scalable, sustainable, and nationally replicable. This is a case study on the design, implementation, and impact of a public-private-academic partnership that has developed a scalable model for realizing inclusive AI education and workforce preparedness.

Background

Higher education systems worldwide face a critical challenge: Artificial Intelligence (AI) is reshaping every discipline, yet AI education remains largely confined to computing majors. This is the critical problem that universities across the globe have started to tackle. By aligning AI capability development with the substantive needs of future professionals across medicine, education, business, humanities, and engineering. This was done as part of a larger national collaboration between King Abdulaziz University, the Ministry of Communications and Information Technology (MCIT), and Microsoft, with the goal to drive AI capacity building and digital skills development for higher education in Saudi Arabia.

At King Abdulaziz University (KAU), this need became more apparent through national priorities aligned with Saudi Vision 2030, digital skills, AI literacy, and workforce readiness. Traditional pedagogical, lecture-based models were not enough to prepare non-technical learners to master concepts, use skills, and understand the ethical considerations of AI systems. To tackle these pain points, KAU introduced an AI-for-All education reform initiative by integrating Microsoft's AI-900: Azure AI Fundamentals into an elective course at the university level (CPCS-335 for science and medical colleges and CPCS-336 for Art colleges). The purpose of the program was to break down conceptual walls, from stage one: abstraction, to apply and provide a three-way look at the topic or content (cognitivism, skills & attitude), reflected upon Bloom's Taxonomy.

The need was not simply curricular but systemic: ensuring that all students had equitable access to AI, promoting a culture of interdisciplinary innovation, and preparing graduates to use, assess, and govern AI responsibly in their professional fields. The implementation goals targeted scalability, inclusivity, learning outcomes that could be measured, and national replicability across Saudi universities.

Case Implementation Status

Starting Fall 2024 through Fall 2026, nearly 7,298 full-spectrum-trained students from King Abdulaziz University (KAU) and nine Saudi universities have adopted this developed AI course, or are currently preparing to implement such a system. At King Abdulaziz University, a dedicated group of faculty members was trained to co-teach the course and oversee student projects. At the national level, over 1,500 faculty members were reached through AI literacy seminars, dissemination workshops, and implementation briefings to support widespread institutional uptake. The initiative was delivered at zero financial cost through a fully in-kind model, confirming its maturity, stability, and scalability. The initiative was made feasible by the complementary roles played within the partnership, with MCIT providing national direction and facilitation, Microsoft bringing cloud-based AI platforms and training materials to the table, and King Abdulaziz University driving academic design, delivery, and assessment.

The implementation followed the steps outlined below

(1) Identify Educational Requirements

Despite this diversity of disciplinary backgrounds and the AI literature becoming increasingly rich, we identified significant untapped demand for AI literacy among non-computing students across medical, health sciences, education, business studies, and humanities faculties. Students were interested in learning about AI applications in their fields, but wanted paths that bypassed programming prerequisites.

(2) Design of the Curriculum and the Learning Outcomes

Two university elective courses (CPCS-335 and CPCS-336) were established in the computer science department as university-level electives targeted at non-CS degree holders. During the process, it is explicitly stated that there were no prerequisites. Their learning goals cover all three domains of Bloom's Taxonomy:

- Knowledge (Remember, Understand): AI concepts, history; AI agents; ML: types of learning; NLP, Computer vision & generative AI.
- Skills (Apply, Analyze): Practical Azure AI labs, Hands-on (Vision, Language, OCR, Generative AI).
- Values (Evaluate): Ethics, bias, explainability, responsible AI, and regulation.

Individual learning objectives are correlated with specific teaching and assessment methods, such as quizzes, graded labs, projects, and final examinations. Figure 1 illustrates the overall structure of the developed curriculum, highlighting the progression of AI concepts, hands-on laboratory components, and ethical considerations, as well as their alignment with Bloom's Taxonomy learning domains and the Microsoft AI-900 framework.



Figure 1 Overview of the course structure mapping foundational AI concepts, Azure AI labs, responsible AI and ethics, and Bloom's Taxonomy outcomes with alignment to the Microsoft AI-900 framework.

(3) Labs and Hands-on

The initiative used the following Microsoft Azure AI services as a teaching tool:

- Azure AI Vision for images.
- Azure AI Language for sentiment analysis and entity extraction.
- Azure Document Intelligence for OCR and document processing.
- Azure Generative AI for prompt engineering and ethical exploration.

Using the Azure cloud solution from Microsoft, no lab environments need to be set up (so no technical background is required), there is no unfair infrastructure inequality, and it is accessible from every device. Figure 2 illustrates a guided Azure AI Vision laboratory, where non-technical students interact with real-time image analysis services through a no-code interface.

Lab 2: Analyze images in Azure AI portal

Generate captions for an image

4. Upload the store-camera-1.jpg image by dragging it to the Drag and drop files here box, or by browsing to it on your file system.
5. Observe the generated caption text, visible in the Detected attributes panel to the right of the image. The Caption functionality provides a single, human-readable English sentence describing the image's content.
6. Next, use the same image to perform Dense captioning. Return to the Vision + Document page by selecting the back arrow at the top of the page. On the Vision + Document page, select the Image tab, then select the Dense captioning tile.
7. Hover over one of the captions in the Detected attributes list and observe what happens within the image.



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Figure 2 Azure AI Vision lab hands-on

(4) Project-Based Learning

Students collaborated in multidisciplinary teams to develop domain-specific AI applications, including:

- Mental-health sentiment analysis
- Educational feedback analytics
- Visual inspection tasks
- Text and document automation workflows

Each project required problem formulation, selecting an AI service from the Azure platform, applying the tool to a real dataset, interpreting the output, and ethical reflection.

This framework ensured that advancement from knowledge to application to evaluation is perfectly aligned with Bloom's higher-order learning outcomes. Figure 3 presents examples of interdisciplinary student project presentations, demonstrating applied AI use cases developed using Azure AI services.



Figure 3 Student project presentation demonstrating applied AI use in domain-specific contexts.

Case Innovation and Breakthroughs

1. Main Innovation Content

Pedagogical Innovation

The pioneering initiative upends the classic "learn-to-code-first" model with a groundbreaking AI literacy-first, application-led model. This new model aims to enable non-experts to learn an approach and think critically about state-of-the-art AI systems, creating a more inclusive and accessible learning process.

Curricular Innovation

CPCS-335 and CPCS-336 provide a structured course of instruction leading to the Microsoft AI-900 industry certification. Such innovative integration benefits both teaching and learning experiences and ensures that academic standards are maintained throughout, ultimately enhancing students' perceptions of educational value.

Equity Innovation

It is the process of systematically removing barriers to entry in hardware and coding, effectively democratizing AI education and enabling a wide range of learners to participate in and benefit from unleashing AI's transformative potential.

2. Technology Breakthrough Content

This work was not intended to develop new AI algorithms, but it did take a major step forward in educational technology, the pedagogical re-engineering of enterprise-level artificial intelligence infrastructure for non-technical learning at scale. In particular, Microsoft's Azure AI services (which were developed for professional developers and data scientists) have been methodically repurposed as no-code student-centred learning environments.

This re-engineering was implemented in a variety of concrete ways. To start, all AI interactions are low-code, allowing students with non-computational backgrounds to configure, run, and interpret AI models directly through graphical interfaces rather than programming. The second was that the Azure platform and its contained services were an appropriate classroom for students to use as a sandboxed student learning environment where they could experiment with actual AI systems while managing ethical, data security, and operational spill risks. Third, ethical and responsible AI principles were embedded in the lab workflow itself, meaning students were forced to consider bias, fairness, explainability, and societal impact as they used computer vision, language, and generative AI services. And finally, real-time AI feedback (such as live image analysis results, text sentiment outputs, and generated responses) surfaced the time-honored static demonstration model with instant learning reinforcement and further conceptual depth. In combination, these aspects constitute a relevant technical and pedagogical innovation, situating the case at an advanced applied-educational level that addresses the traditional schism between theoretical AI concepts in academic education arenas and practical applications in AI laboratories, reflecting broader educational objectives of informatization and digital transformation.

3. Application Practice Breakthrough Content

Major achievements include breakthroughs, such as the large-scale national deployment of AI technologies without a cost explosion, so we will not be burdened by it. Furthermore, there is a significant increase in transdisciplinary diffusion of AI across domains, including medicine, education, and business, indicating the flexibility and relevance of the AI course across an array of sectors. Moreover, a scalable template has been carefully crafted and is now implemented across institutions to enable a harmonized approach to AI integration. And in the end, this ambitious project creates a solid foundation at the national level for developing AI literacy in higher education, serving as a model for educational challenges in ever-changing technological contexts.

4. Intellectual Property Status

All teaching materials, full lab guides, and multiple assessments are the property of King Abdulaziz University and are under the university's control to protect IPR and educational resources. In addition, the latest Microsoft Azure tools are used in compliance with educational licensing agreements to provide dynamic, technology-integrated learning. No student proprietary information or complex algorithms are claimed to be owned, thereby guaranteeing students' privacy. The educational materials are also distributed through formal institutional agreements, allowing duplication and sharing, fostering cooperation, and expanding education across multiple formats.



For more details, please visit the link below:

<https://wdea.bnu.edu.cn/docs/2026-06/b54cb478d3fa413491e524ba75110288.pdf>

Pages 255–262

Best Practices in AIED (2026)

Seeing Every Child: Personalized Learning Companion Practice of Information Technology in Primary Schools with AI Support

▷ Changjun Sun

Hangzhou Chunhui Primary School, Zhejiang, China

Background

Primary school information technology lessons are mainly task-driven and practice-oriented. Student differences first emerge in process performance such as task comprehension, help-seeking, collaborative participation, and self-revision, rather than only in final products. Through sustained classroom observation, sample analysis, and teaching reflection within the school, we found that relying solely on teacher walkthroughs and experience-based judgment makes it difficult to identify these process-level differences in time and even harder to provide timely in-class intervention. In response to this need, the school teacher team independently developed Huibao Learning Companion, an AI learning companion tool that identifies key nodes in the learning process and provides immediate feedback and learning-status prompts, enabling teachers to detect differences earlier and offer targeted support.

Case Implementation Status

1. Process Data Collection: Building an Immediate Classroom Learning Feedback Mechanism

To compensate for the limitations of traditional walkthroughs in capturing learning details, the teacher team used Huibao Learning Companion to build a back-end data collection system. As students complete tasks, the system automatically records task progress, help-seeking frequency, collaboration traces, and revision versions without disrupting normal classroom order. Teachers clarify observation priorities before class, call up the data dashboard during class to understand overall class status, and use the records for post-lesson reflection. The student interface provides only prompts and revision suggestions matched to the current step and does not provide standard answers. This helps teachers move beyond subjective experience, bring support earlier, and conduct timely diagnosis based on objective records.

2. Individual Progression Mode: Tiered Guidance Strategies for Independent Inquiry

During independent task completion, teachers use the data dashboard to understand the distribution of class progress. In programming exercises, for example, the dashboard clearly shows that some students repeatedly attempt the same node, while others have already completed the basic requirements ahead of time. Teachers then adjust the pace of explanation, give brief whole-class prompts on common difficulties, and devote most of their attention to individual guidance. Students go through a learning cycle of attempt, encountering difficulty, receiving a prompt, and revising, gradually developing the habit of asking questions proactively and revising independently. The teacher's role shifts from uniform instruction to on-demand guidance, so students with different starting points can maintain learning momentum at an appropriate level of challenge.



Figure 3 Student project presentation demonstrating applied AI use in domain-specific contexts.

3. Group Collaboration Mode: Role-Based Intervention in Group Tasks

After students enter the collaborative learning stage, the system automatically records within-group speaking frequency, task claims, and contribution to submissions. Teachers use these detailed data to intervene in time, reassign roles, or break tasks into smaller steps, reducing

the chance that a few students will take over the entire task. For temporary grouping scenarios such as open lessons, the system provides a temporary cross-school grouping configuration that supports temporary group formation across schools and independent scoring while ensuring data isolation and process records. Clear division of labor and sustained interaction help students fulfill collaborative responsibilities, while teachers can more accurately judge whether effective collaboration is taking place and provide process scaffolds in time.

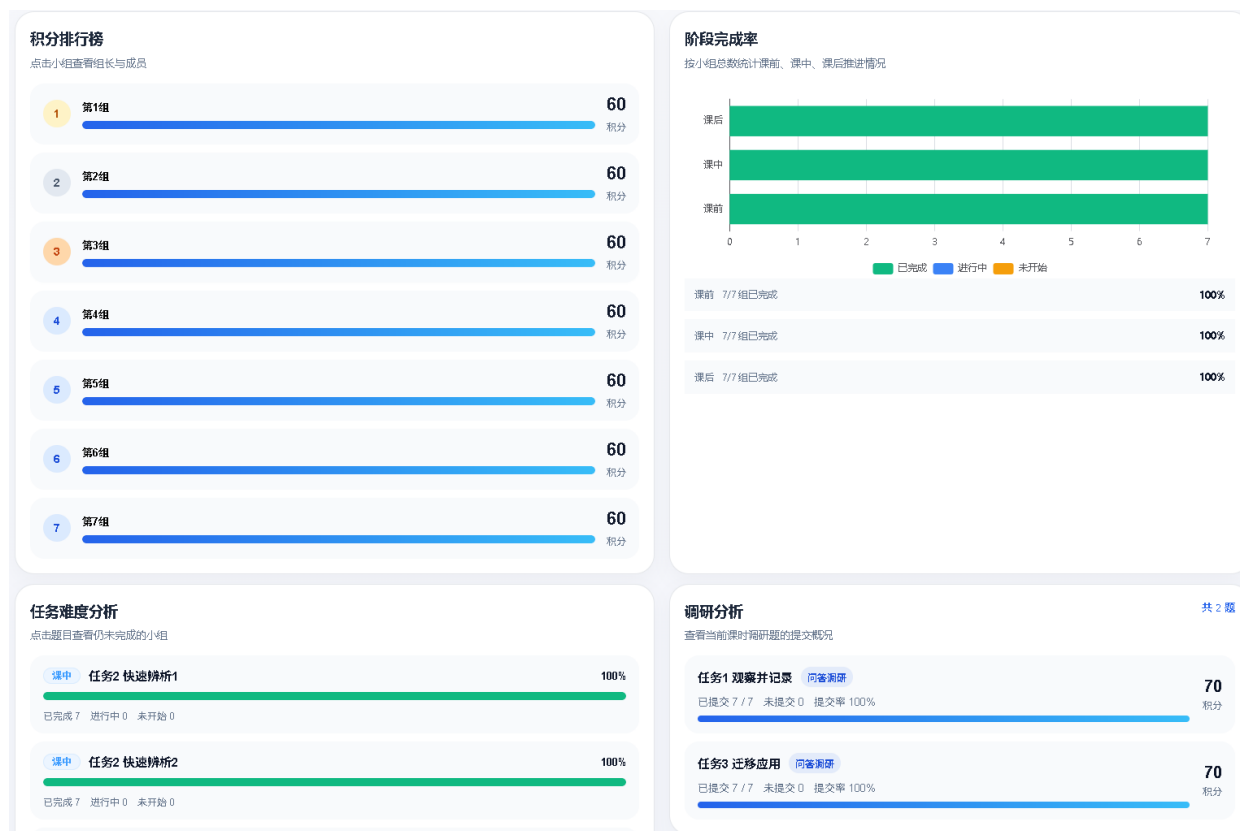


Figure 2 Group Collaboration Analysis

4. Multi-Scenario Extension: Supporting Personalized Learning in Information Technology

Information technology learning needs to unfold in authentic and diverse contexts. The system integrates a virtual science and technology museum, digital books, and the Pet House module, allowing students to choose learning pathways according to their interests. In virtual simulations, students understand abstract technical principles through interactive experiments. In the digital reading area, they broaden their technological horizons through self-directed reading. The Pet House interaction module focuses on cultivating daily digital behavior habits and awareness of information ethics. Participation traces and behavioral data from these scenarios are all

brought into the same platform foundation to form continuous cross-module records. Based on multi-source data, teachers can identify students' interest tendencies and development needs and provide differentiated guidance. In this way, AI-supported learning moves beyond single-point operational guidance and becomes long-term companionship that supports students' independent inquiry across multiple contexts.

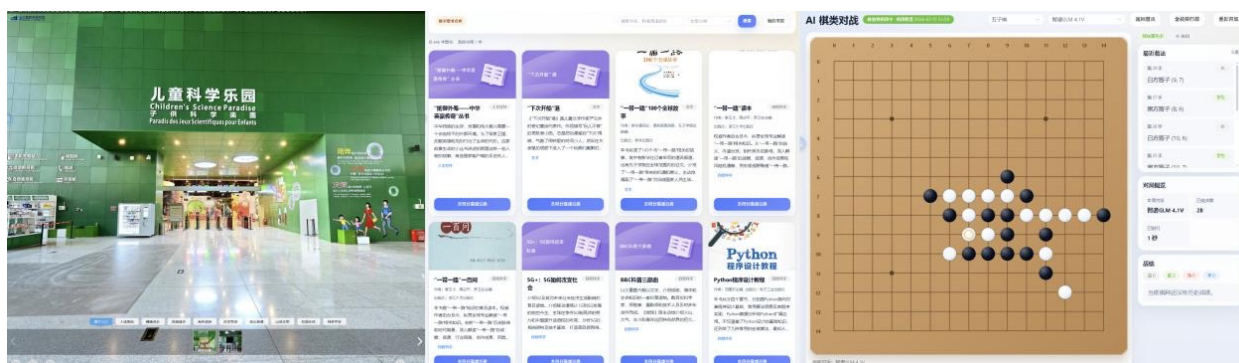


Figure 3 Digital Library and Virtual Science and Technology Museum Resources

Case Innovation and Breakthroughs

1. Classroom Support Driven by Process Evidence

This case limits AI to the identification of and feedback on learning processes. It does not replace teacher instruction or directly provide ready-made answers. Evidence of task progression, help-seeking, collaborative participation, and revision records is continuously retained, allowing teachers to judge where students encounter difficulties, what kinds of problems they face, and when intervention is needed. Compared with approaches that rely mainly on walkthroughs and experience-based judgment, the basis for classroom support becomes more concrete, and individualized support shifts from after-class remediation to in-class diagnosis and timely intervention. Its significance lies not in adding another technical tool, but in providing teachers with stable and usable classroom process evidence.

2. School-Based Iteration Supported by Independent Development

Huibao Learning Companion is independently developed, deployed, and maintained by the in-school teacher team. Through continuous iteration, it has undergone more than 500 version updates. Each iteration has remained focused on authentic classroom needs in task organization,

help-seeking feedback, collaboration observation, and learning records, rather than pursuing display-oriented functions. Ongoing iteration has not increased the operational burden. Instead, it supports teachers in continuously proposing needs around classroom problems, quickly testing new functions, and making timely adjustments.

3. Evaluation Optimization under Reorganized Classroom Structures

The individual growth mode, real-name group mode, and cross-class collaboration mode correspond to three types of classroom organizational relationships and together form an organically connected functional system. These three modes respectively support individual task progression, effective group collaboration, and cross-class exchange and co-creation. As a result, the evidence teachers use to observe student learning extends from final products to process performance such as task comprehension, collaborative participation, and sustained revision. Evaluation shifts from outcome judgment to process diagnosis, and teaching organization can make dynamic adjustments more effectively in response to learner differences.



For more details, please visit the link below:

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Editing & Compilation: WANG Menghan, WANG Junyi
Reviewed by: ZENG Haijun

Contact us

Joint Secretariat for WDEA:

China Education Association for International Exchange(CEAIE)
Beijing Normal University(BNU)

Tel:

010-66090069
010-58807205

Email:

wdea@bnu.edu.cn

Website:

<https://wdea.bnu.edu.cn>