

# Effective application of AI in education requires a national strategy: Lessons from Shanghai.

Many countries are deploying AI as part of their national education infrastructure. The lessons from Shanghai show that artificial intelligence can transform entire learning systems, from teachers to students.

Last January, Elon Musk's artificial intelligence company xAI announced it would use its chatbot to build an AI tutoring system for over one million students in El Salvador. This announcement came shortly after OpenAI launched its **ChatGPT Edu** service for students in Kazakhstan, and Microsoft also provided AI tools and training programs for teachers and students in the United Arab Emirates.

While many countries are implementing national infrastructure projects for the AI era and treating it as an economic priority, in some countries, including Vietnam, the discussion seems to still revolve around concerns that AI will make it easier for students to cheat. The enthusiasm for how AI and new technologies can support the education system seems rather subdued. Innovative collaborative initiatives, research and development groups, and programs to help teachers adapt to new technologies are not yet widespread.

Of course, any major change in how we learn and work comes with risks, but in general education, we seem to be focusing on concerns that aren't the most important.

## Shanghai's approach

Recently, a friend of mine had the opportunity to visit Shanghai and join an international learning community comprised of high-ranking officials from the city's education system and government. This group collaborates to identify pressing educational issues, study best practices worldwide, and develop practical solutions applicable across diverse cultural and political contexts.

The goal of this trip was to understand the policies, implementation methods, and teaching approaches related to AI in China, and then draw lessons from it. What my friend quickly realized was that the concept of '**AI in education**' that we often talk about is almost completely different from how it's being implemented in Shanghai.

Here, AI is not simply a tool introduced into the classroom, but a systemic and philosophical approach. While in the US, AI is often seen as a new subject in the curriculum or an additional technological tool, in Shanghai, it is considered critical national infrastructure, similar to a high-speed rail system. The gap between these two approaches lies not only in differences in implementation, but also in differences in strategic thinking.

The strength of Shanghai's approach lies not in the technology itself, but in how it's integrated into the entire educational ecosystem. Instead of just focusing on 'AI literacy'—that is, basic understanding of AI—they've moved towards 'AI infusion,' where artificial intelligence becomes the underlying operating layer for the entire educational experience.



## Each teacher has an AI assistant.

In Shanghai, **every teacher has an AI assistant** – not as an add-on, but as a standard tool. These assistants support lesson planning, grading, analyzing learning data, and even professional development for teachers. The goal is not to replace teachers, but to amplify their capabilities, so that teachers can focus more on guiding, innovating, and connecting with students.

In parallel, **each student has a 'digital profile'** – a comprehensive profile built from multidimensional data and continuously updated in real time. The purpose of this system is not to monitor, but to diagnose and support a personalized learning process.

Teachers receive specific feedback on their teaching methods, and the curriculum is redesigned to emphasize the connections between concepts, helping students understand the system rather than simply memorizing facts. At the same time, each school becomes part of a larger online educational ecosystem that extends beyond the traditional classroom.

Many people still haven't grasped how AI can enhance teaching methods, spark curiosity and creativity, or enrich the curriculum. **AI could even help implement personalized learning** – something the education system has been pursuing for years. But if we only focus on students being able to use AI to cheat on essays, these potentials will be difficult to realize.

One of the highlights of the trip was a visit to *East China Normal University*, where educational psychologists and computer scientists from the Shanghai Institute of AI in Education built a complete development system, from engineering and model testing to performance evaluation.

This is not just a theoretical research institute, but also a true R&D center creating large-scale products for the education system. They address specific problems such as AI-powered math tutors that can analyze handwritten assignments and accurately identify students' logical errors, essay grading systems that can offer insightful comments on classical Chinese poetry, or chatbots that provide psychological counseling using cognitive behavioral therapy techniques.

In many countries, AI is being widely applied in fields such as clean energy, space exploration, and biotechnology. However, a significant gap still exists in general education.

If we want to transform the approach to AI in education from fragmented to a unified strategy, coordinated leadership at all levels is needed. Only by building a link between policy and implementation can we create a truly AI-driven educational infrastructure, instead of continuing with disjointed experimental projects.

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