The future of AI in education: 'Personalized teaching'

An in-depth analysis of the role of AI in education and why 'personalized teaching' is the right approach instead of personalized learning.

For many years, one of the most compelling promises of AI in education has been its ability to personalize learning. The idea is simple yet powerful: each student will have their own 'AI tutor,' who understands their strengths and weaknesses and adjusts their learning pace accordingly.

It sounds almost perfect. But reality is showing something different: the very way we envision that future may be going in the wrong direction.

From technological promises to classroom reality

The wave of investment in AI education largely revolves around the 'personalized learning' model. Platforms like Khan Academy and school models like Alpha School place AI at the center of the teaching process, with teachers relegated to a supporting role.

In theory, this is a logical step forward. With each student having their own learning path, AI can optimize knowledge delivery on a scale that humans would struggle to achieve. But the problem lies in the fact that, in practice, this model turns learning into a 'screen-based' experience.

Students interact with devices more than with people. Teachers are no longer facilitators, but supervisors. And this isn't an assumption — we experienced something similar during the online learning phase of the pandemic.

The consequences of that period are still evident: declining academic performance, impaired social skills, and reduced engagement with the learning environment. What happened during COVID-19 was an 'unintended test' for the device-based learning model — and the results show it cannot replace the traditional classroom.

The core mistake: putting AI at the center.

The biggest problem with the current approach lies not in the technology, but in the architecture of the mindset. Personalized learning places algorithms at the center of the educational process, while teachers become a limiting factor. This inadvertently turns teachers into a 'bottleneck' rather than a lever.

Meanwhile, decades of educational research have shown that the factors with the strongest impact on learning outcomes are human-related: the teacher-student relationship, classroom interaction, contextual responsiveness, and collaborative learning processes.

In other words, education is not just about transmitting information. It's a social process. By putting AI at the center, we're optimizing content delivery, but overlooking the elements that make learning truly 'rooted'.

A common misconception is that teachers need more tools to teach better. But in reality, what they lack is not tools, but the right, actionable data.

Teachers need to know where students are in the learning process — not at the end of the term, but right before each lesson. They need to understand whether students have grasped the foundation, and if not, what areas they are lacking.

The problem is that this type of data is very difficult to collect and aggregate. In most schools, learning data is fragmented, lacks coherence, and is not detailed enough to support real-time teaching decisions. Even when data is available, processing it for dozens of students, hundreds of skills, and within a short timeframe is nearly impossible.

The right role of AI: supporting teachers.

This is where AI could make a difference — but not in the way many people imagine. Instead of replacing teachers, AI should act as a 'supportive layer of intelligence,' working behind the scenes to synthesize data, analyze learning progress, and offer suggestions before class begins.

The teacher remains the final decision-maker, but that decision is supported by a level of deep and immediate understanding that previously would have taken years of experience to acquire.

The key point is that AI shouldn't become a 'black box'. Teachers need to understand the reasoning behind the suggestions, be able to verify and adjust them. In that case, AI doesn't replace professional expertise, but amplifies it.

From 'personalized learning' to 'personalized teaching'

The difference between these two concepts may seem small, but it is crucial. Personalized learning focuses on each student following a unique, AI-driven path.
Personalized teaching keeps the teacher at the center, but gives them the tools to understand and tailor their instruction to each student.

In the second model, AI doesn't eliminate the human element, but rather makes it more powerful. The image of a perfect AI tutor for each student is an appealing goal, but it reflects a performance-oriented rather than educational perspective. Education is not just about delivering knowledge faster or more accurately, but about building understanding, confidence, and human connection.

AI can help teachers better understand their students, prepare them better, and respond more quickly. But it cannot replace keen observation, empathy, or pedagogical intuition—core elements of teaching.

The future of AI in education, therefore, lies not in replacing teachers, but in helping them become better versions of themselves.