

AI-Powered Learning: Transforming Education with Personalized and Engaging Tools

By Kajal Mehra - July 17, 2024

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In an exclusive interview with TimesTech, [Dr. Sanjeev Kumar](#), Professor of Computer Science, explores how AI-driven adaptive learning platforms are revolutionizing education. He discusses the benefits for students and educators, the role of intelligent tutoring systems, and the future potential of AI in creating personalized and interdisciplinary learning experiences.

Read the full interview here:

TimesTech: How do adaptive learning platforms using AI transform education, and what benefits do they offer students and educators?

Sanjeev: These are potential benefits of AI platforms as AI assistants that will help to find how students learn, which unique problems he/she is facing while studying and many more. The complexity levels will also be adapted automatically, resources wherever they are required and preferred way of learning recommended, all tailored to individual requirements. Item-level feedback is available in real-time from [AI](#), highlighting where the knowledge gaps lie and ensuring swift intervention.

No More Bored and Overwhelmed Students: They are excited and inspired to learn because it makes sense. With personalized learning, they can concentrate on the areas where they are less strong and improve in these whilst at the same time developing their existing strengths leading to enhanced depth of understanding as well as better advances toward mastery. Suddenly they are enthusiastic investigators, learning important self-learning skills and in charge of their educational path.

AI is empowering educators also! AI can automate personalised learning paths and free educators from tedious administrative tasks, so they have more time to help individuals, which contributes to a friendly environment that helps students better understand their own capabilities. This kind of student progress data can be game-changing for educators as they are able to pinpoint where students might be most challenged and how teaching methods can yield the greatest results. Educators are freed from repetitive duties to focus more on higher level, project-based learning and individualized instruction. AI enables educators to embody what they also say matters the most to their students.

TimesTech: How do AI-powered intelligent tutoring systems provide personalized feedback and support to students, and what impact do they have on learning outcomes?

Sanjeev: AI-driven tutoring is transforming the education landscape with detailed practice that fine-tunes learning. Picture a tutor who never gets tired, can instantly recognize where you slip in your learning and send immediate feedback messages right away; even adjusting how they are teaching depending on the way you think. But this is the world of AI-enabled intelligent tutoring systems (ITS).

No mass general comments — these AI tutors use student data and interactions to determine success and weak points. They give individualized feedback to address misconceptions, making it clearer what the student misunderstands. Stuck on a concept? AI tutors provide immediate feedback as you learn, so if at any point a student goes awry, he or she can immediately be corrected largely avoiding drowning periods.

These smart tutors take your explanations and justifications into account, so the feedback reflects how you think about arriving at an answer. But the results are well documented: enhanced comprehension, sharper problem-solving abilities and a shot to confidence that feeds into an appetite for learning. By adapting to an individual’s learning journey, AI-powered tutoring systems lifts our future generation up creating personal excellence in education.

TimesTech: How do AI chatbots and virtual assistants enhance student engagement and support academically and administratively?

Sanjeev: AI Education, Interactive and Engaging: Chatbots & Virtual Assistants Human tutors work certain hours and can only do so much, but an AI assistant is available anytime for right-now help. With gamified quizzes and challenges learning becomes exciting, interactive.

Developed as intelligent assistants – or smart tutors – these tools analyze student data to recommend personalized learning paths and resources tailored to their specific needs (and even their preferred ways of learning). Stuck on a concept? No problem! Using AI chatbots to answer FAQs and provide instant clarification that can save time for your students in the course of their lessons. Need extra practice? Virtual simulations and practice problems with feedback from the AI tutors likewise can reinforce learning. You can even ask chatbots to be your personal learning assistant talking in terms of what do you want, for example your goals and hack the relevant resources link online tutorials or video lectures.

There is more to this than just your grades. After all, AI is doing the exact work like scheduling appointments for students and registering courses or submitting form which saves time of both course instructor as well student. Goodbye missed deadlines, Plus Mobile AI learning assistants send alerts for tasks that need to be completed and notify students of announcements they cannot miss. This is the face of the new era of education, a version that offers each learner, an experience that follows him/her wherever he/she goes (mobile and web) personalizes & engages them with additional insights into teaching/learning behaviours leading to better learning outcomes at every step.

TimesTech: Can you explain how AI-driven predictive analytics identify at-risk students and share examples of successful interventions that improve student retention?

Sanjeev: Schools and Colleges can utilize AI as a fresh weapon in their struggle against alarming high school dropout rates, the power to forecast with frightening accuracy those students most likely quit on education before ever getting started. No longer a review of grades or intuition AI detectives comb through everything from grades and attendance to online activity using an endless array of data analysis that can include a student’s location, interaction with risky web sites and, in some cases more than 100 social media factors. This data is embeded like a spider spinning its silk threads around the web lines to predict which students are heading for rough stretches or even dropping out. It’s the power to act before disaster strikes. Think about this, how would it have been to notice these red flags before things became too much for you. And in an alternate frame, educators become the superhero themselves – providing interventions that fulfil specific needs programs of support earlier warning systems to keep students and parents informed necessary financial aid mental health resources for a holistic well-being. Artificial intelligence learning is transforming education, building a world where every student can succeed, and no one must be left behind.

TimesTech: How does AI foster interdisciplinary collaboration in education, and what examples illustrate its impact on educational experiences?

Sanjeev: Picture the history class of the future in which students analyze climate data or where engineers work with artists. Enter a scene from science fiction; this is AI doing transformation in education. AI drives interdisciplinary collaboration, cross pollination of methodologies/animations between subjects. Across disciplines, students can explore massive datasets in an effort to find patterns that they might have otherwise missed. AI tools for data analysis, simulations and visualizations to enhance project-based learning Virtual labs, powered by AI can help students from various streams to collaborate in a real-world like environment. This is already happening! Artificial Intelligence and Climate Change – Image Credit Software Suggest Note: Through AI, an adaptive learning path is defined with knowledge from multiple disciplines. Education increasingly is an orchestra of intertwined subjects, and AI can serve as the conductor that allows students to succeed in a world with demands holistic thinkers.

TimesTech: Looking ahead, what is the future potential of AI in personalized learning and interdisciplinary education?

Sanjeev: Get ready for the learning evolution! Introverts will also benefit from the gentler nature of AI, and now they too can blossom; AI is changing education in ways never before seen. Think personalized learning paths that account for not only your mastery of concepts, but also how you learn best and at what speed based on body language. AI will identify these weaknesses and target recommended actions so there are no more knowledge gaps. AI can generate interactive exercises and simulations. AI tools and engineers will combine climate data with some historical context to discover something they never would have noticed if these two datasets were isolated. Revolutionary AI-powered VR experiences in immersive environments instantly transport you across time and space – to learn anywhere, any time (outside of a typical classroom) by reliving historical events or co-creating on virtual city building. AI in education won’t be simply a tool: it’s an interactive partner engaging students to discuss, provide live feedback on group projects and encourage them to draw conclusions between seeds of knowledge scattered across various fields. Prepare for an individualized, interdisciplinary education that allows to bridge the gap and prepare students in a world full of opportunity.