



Editorial

Trends in education: analysis of artificial intelligence and other emerging technologies

Tendencias en educación: análisis de la inteligencia artificial y otras tecnologías emergentes

Tendências na educação: análise da inteligência artificial e outras tecnologias emergentes

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In recent years, there have been significant changes in the educational field that include, in all cases, technology. She has transformed the way we learn and teach. In this context, the pandemic accelerated, in a vertiginous way, an entire transformation, to the virtual, of the educational processes. In the international context, in general, a group of trends can be seen that set guidelines to follow, due to their innovative nature and that point to rapid development, in which educational systems must evolve.

The first trend, which has been marking transcendental importance, is, without a doubt, *personalized teaching*, adaptable to the individual needs and characteristics of each student. This model emphasizes their individual differences and is based on the use of digital technologies to gather the necessary and sufficient information about the student body and, based on these results, design the entire teaching-learning system, tutorials, personalized programs of all kinds, that meet their needs and expectations. The experience of this type of teaching also includes postgraduate programs, even at the doctoral level, which positively value the use of technologies in the student's competency training and consider the implementation of the virtual modality necessary in training activities. (Cachari, 2023)

Social Learning, based on collaboration and teamwork, emphasizing the use of digital technologies that encourage communication and information exchange to occur more fluidly. Diverse experiences in the international sphere show its potential as a conclusive factor for social interaction and group work. (Aguirre et al., 2023). From this perspective, learning environments, the integration of digital tools in the classroom and methodological changes with the participation of ICTs and Learning and Knowledge Technologies (TAC) in

educational processes present a scenario of support for the cooperative learning model; that generate a panorama of utility and favoring for cooperation, group work and social skills of students. (Moreno Salamanca, 2023).

A third trend that has been gaining ground, especially in university education, is the *adaptation of educational platforms to the mobile format*. From this perspective, a multitude of innovations can be appreciated, from a range of applications, that allow access to educational content. All of this is, moreover, in the current context, essential, so that each student, depending on their possibilities, can access from their mobile devices in different places and times.

Gamification, for its part, promotes the use of elements typical of the games (points, medals, levels, etc.) to motivate and encourage learning, promotes an innovative teaching-learning process, through play or games. For their part, the direct beneficiaries, the students, achieve a more personalized approach and interact more closely with their teachers. (Aguirre et al., 2023). All of the above allows scientific concepts and skills, and their articulation with social and ethical aspects, are essential for decision-making in contexts of all kinds. Its pedagogical use in the classroom requires adaptations in school activities. (Domènech-Casal, 2023).

Distance, online and hybrid learning is being gradually incorporated, taking into account the real possibilities of each educational environment, but without a doubt, more and more students and teachers use it to develop online teaching-learning processes, as this fosters a more flexible, individualized and accessible process.

Last but not least are interpersonal and STEM (science, technology, engineering, and math) skills. In a hyper-connected world of work such are a must, so Employers look for

workers with strong interpersonal skills and advanced technical skills.

In general, these trends are transforming the educational field and allow to improve the performance and motivation of students, however, one of the most important and that, due to its potentialities, is in the center of attention today, is, without a doubt, artificial intelligence (AI). AI is transforming all aspects of human activity, this includes, of course, education. It has the potential to totally transform current education, which has been recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as essential in the process of innovating teaching and learning practices, and advancing in compliance with SDG 4: guarantee inclusive, equitable and quality education, and promote lifelong learning opportunities for all. (UNESCO, 2023)

The use of AI is being incorporated not only in Higher Education Institutions (HEIs), little by little secondary education and even basic education must adapt to the changes that it has caused, especially the various benefits, given in personalized learning algorithms, the tools and technologies possible with its use.

UNESCO is setting the guidelines for a rational, balanced use in education, as well as envisioning the impacts of innovations in teaching-learning at any level. It also highlights the importance of students developing skills such as critical thinking, problem solving and creativity in order to adapt to a constantly changing world, understanding how AI works and how it can affect their lives. (UNESCO, 2023). In the university it can contribute to improve the efficiency and quality of its substantive processes, however, regarding its benefits and/or damages, they are today in the center of the bat of the authors.

In addition to artificial intelligence (AI), there are other emerging technologies that are transforming education. Some of these technologies include virtual and augmented reality, mobile learning, and game-based learning. Virtual and augmented reality is being used more and more in education to create immersive learning experiences, it is true that countless educational investigations are being developed that already use virtual reality as simulation or recreation of experiments, virtual rooms, guided virtual tours, etc.

In Cuba, Higher Education is also gradually being incorporated and depending on the real possibilities of each educational context, the use of emerging technologies such as AI. In short, artificial intelligence (AI) and other emerging technologies are transforming Higher Education around the world. AI has the potential to personalize learning and adapt it to the individual needs of each student, improve academic performance, and improve the efficiency and quality of education offered by universities.

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