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The Future of Physics in the Age of Artificial Intelligence

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The Future of Physics in the Age of Artificial Intelligence

This paper explores the evolving role of physics education in the context of rapid advancements in artificial intelligence (AI), with a particular focus on the current situation in Albania. Physics, as a fundamental science, remains crucial for understanding natural phenomena and driving technological innovation. The teaching of physics has undergone significant transformations over time —from classical lecture-based approaches to more interactive, experimental, and technology-enhanced methodologies. However, in Albania, the physics teaching profession faces serious challenges, including limited labor market analysis, difficulties in teacher integration due to ongoing education reforms, a prolonged qualification cycle, and relatively low salaries. These factors have contributed to a decline in student interest and a shortage of qualified physics teachers. Meanwhile, AI technologies offer promising tools to enhance teaching and learning, automate complex data analysis, and personalize educational experiences. This paper argues that while AI will transform physics education, it will not replace the essential role of human educators and researchers. Instead, a collaborative approach that leverages AI tools alongside skilled physics professionals is necessary to advance the discipline and improve educational outcomes in Albania and beyond.

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