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AI INTEGRATION INTO MEDICAL DISCIPLINES

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Abstract
A paradigmatic shift in the structure of digital literacy in higher education determines the transition from the utilitarian development of software to the systemic inclusion of artificial intelligence (AI) technologies. This trend is critically important for high-tech medical disciplines (radiology, nuclear medicine), where AI is the modernization of syllabuses (including the experience of integrating ChatGPT Edu at the Icahn School of Medicine at Mount Sinai in 2025) significantly increases the clinical adaptability of graduates. However, the global expansion of innovation is limited by the conservatism of didactic models, the heterogeneity of digital maturity of personnel and infrastructure shortages, which in the context of developing economies (LMIC) exacerbates inequality.

Keywords: Artificial intelligence (AI), innovative competencies, early diagnosis.

Introduction

The development of information literacy is currently changing direction. The transition from learning how to use simple applications to applying and teaching artificial intelligence is an innovation in education. Progress affects all disciplines in the scientific world, and nuclear medicine, radiation technology and healthcare in general are no exception.

Methods and Methodology

Around the world, several countries with robust healthcare and education systems are actively incorporating artificial intelligence into their medical curricula. These interdisciplinary programmes include artificial intelligence competencies and proficiency as part of undergraduate, postgraduate, and continuing education courses [1,2]. Reviews show that AI-enriched learning has the potential to improve learning effectiveness, clinical readiness, and adaptability to real-world medical problems [3,4]. A notable example is the Icahn School of Medicine at Mount Sinai, which announced in 2025 the full-scale implementation of ChatGPT Edu, a partnership with OpenAI to be used in advancing educational, research, and innovation programmes [5]. All of this can only be achieved through a robust infrastructure, long-term funding, and an innovative culture that supports transformative curricula and technology adoption.

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The pedagogical model remains strictly traditional, and clinical sessions in hospitals and didactic lectures predominate in the learning environment. Limited digital infrastructure, uneven readiness of faculty, and a lack of national guidelines on AI integration further constrain innovation in teaching [6,7]. Furthermore, in most low- and middle-income countries, there is a growing gap between AI development and its implementation in teaching practice, and there are concerns about inequality in training and readiness to work with digital health professionals [8,9]. These differences explain the need to study the use, perception, and regulation of artificial intelligence in modern medical education.

The application of AI integration into education in different countries

Table 1.

Country/Region	Integration model	Key Initiatives	Main barrier
USA	Decentralized, through partnerships with BigTech	Implementation of ChatGPT Edu at Mount Sinai. Stanford Medicine courses on AI.	High cost of licenses and infrastructure
The European	Union is tightly regulated, with a focus on ethics	AI Act projects, grants for the creation of "explicable AI" (XAI)	Bureaucracy and strict GDPR restrictions
Asia-Pacific region (Singapore, China)	State-centered	National Digitalization programs, mandatory Data Science modules for medical professionals	High workload for students
LMIC countries	Local / Experimental(developing)	Individual initiatives of enthusiasts in departments	Lack of basic digital infrastructure

Results

Why is acquiring new skills so important? Statistical data on the use of AI proves that early diagnosis leads to good treatment outcomes: 70% of patients with breast cancer defeated the disease thanks to early diagnosis, lung cancer rates ranged from 50 to 75%, and the rates for patients with various a etiologies improved by 15%, which translates into enormous numbers. This proves the expediency of moving to a new level of education, where AI plays an important role. Students need to know the basics of AI training and be able to learn on their own.

Discussion

Digital medicine is an advanced teaching method all over the world. Doctors are divided into two large groups: "I-shaped" and "T-shaped". "I-shaped" specialists are based on deep knowledge only in medicine, while "T-shaped" specialists, in turn, must have deep expertise in their medical discipline and a broad understanding of related digital technologies — from bioinformatics and data analysis to basic AI hygiene. It is impossible not to take into account the use of AI as a certified product. Students should be aware of the use of AI models. Students should learn not just from "any" AI models, but understand the difference between a commercial product with a registration certificate and an experimental neural network. The data used in the training of AI systems based on patient information

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must undergo a process of depersonalization and de-identification. The use of special medical software.

Conclusion

Summarizing the above, we can conclude that the large-scale inclusion of artificial intelligence in medical syllabuses is a critical imperative that determines patient survival rates (reaching 50-75% with AI-assisted verification of pathologies). The transition to a polycompetent "T-shaped" specialist model dictates the need to transform conservative didactics in favor of students mastering AI hygiene skills, principles of de-identification of clinical datasets and demarcation between experimental networks and certified medical software.

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