



## The virtualization of undergraduate teaching at the University of Medical Sciences of Matanzas

*La virtualización de la docencia del pregrado en la Universidad de Ciencias Médicas de Matanzas*

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### **ABSTRACT**

Virtualization of the Matanzas University of Medical Sciences can be a powerful tool to improve medical education, as long as the challenges it presents are

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adequately addressed. The objective is to reflect on the contemporary trends of undergraduate medical education in Matanzas. It is essential to find a balance between online theoretical education and practical training in clinical settings. Additionally, it is important that medical institutions work to ensure that all students have equitable access to the resources necessary for their training.

**Keywords:** Higher Medical Education; Teaching learning process; Virtualization; Teaching

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## RESUMEN

La virtualización de la universidad de ciencias médicas de Matanzas puede ser una herramienta poderosa para mejorar la educación médica, siempre y cuando se aborden adecuadamente los desafíos que presenta. Se plantea como objetivo reflexionar sobre las tendencias contemporáneas de la educación médica de pregrado en Matanzas. Es fundamental encontrar un equilibrio entre la educación teórica en línea y la formación práctica en entornos clínicos. Además, es importante que las instituciones médicas trabajen para garantizar que todos los estudiantes tengan acceso equitativo a los recursos necesarios para su formación.

**Palabras clave:** Educación Médica Superior; Proceso de enseñanza Aprendizaje; Virtualización; Docencia

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With the arrival of the 21st century and the insertion of the accelerated advances of digital technologies in all spheres of society, educational systems have been immersed in a challenging period of modifications and transition in their training models. A condition that, as a result of Covid-19, was reinforced and accelerated. <sup>(1)</sup>

The commitment of the scientific and academic community emerged immediately and all eyes were pointed to a core: the educational deployment of virtuality as an alternative for training. Focusing on the current development of information and communication technologies was not in itself a novelty, but its use to strengthen educational virtualization in view of the development of university processes was a real shake-up to the conceptions and ways of working conventionally endorsed by the entity. <sup>(2)</sup>

Social responsibility pointed to migration to the digital universe as the only possible alternative. <sup>(2)</sup> According to what was proposed by Hernández de la

Cruz et al. <sup>(1)</sup> Educational virtualization is understood as a comprehensive training process in which the institution integrates technological resources, pedagogical experience and institutional patterns to generate a training alternative based on the implementation and permanent updating of virtual environments that enable the development of its actors, processes and fundamental functions.

On the other hand, Medina Crespo et al., <sup>(3)</sup> assume virtualization as the process through which the university gathers its technological, institutional and pedagogical strengths, enhancing the training process in contexts appropriate to the new generation of students, integrating information and communication technologies that positively impact the training development of the actors.

This rapid advance of information and communication technologies (ICTs) has opened opportunities for the educational community to access new knowledge and develop skills. <sup>(3)</sup>

Without a doubt, medical education is facing an unprecedented era, which poses the following question to the authors of this article: Does the University of Medical Sciences of Matanzas maintain its traditional educational practices or evolve towards future innovative educational trends? Therefore, the objective is to reflect on contemporary trends in undergraduate medical education in Matanzas.

The university has always been a protagonist of social changes around the world, and it should not only be an institution that trains professionals to serve the interests of a regime, but rather a bastion of those changes that pursue collective well-being and its growth. The University Reform of Córdoba, which questioned the elitist and selective nature of the university and its training oriented to the regimes in power in favor of an inclusive university, with academic freedom and respect for diverse opinions, is a reference for this approach of the university as a social protagonist. <sup>(3)</sup>

In Cuba, the university trajectory has maintained a gradual increase in quality, relevance and equity during the last six decades, with an undergraduate education system and comprehensive improvement of university professors that increasingly meets needs. It is considered that, although still below its potential, the contribution of the university to the economy and society is in a promising systemic takeoff, fulfilling its social responsibility. <sup>(2)</sup>



Society demands a university that goes beyond the simple transmission of knowledge and contributes to development through science and technology. The current technological revolution, with its automation processes, virtual and hybrid education, artificial intelligence (AI), and learning paths, are some of the elements that are redefining higher education today.<sup>(4)</sup>

The integration of Educational Strategies and ICTs promotes the active, collaborative and interactive work of educators and students, all with the purpose of achieving academic objectives. From this combination, critical reflective scenarios arise where the teacher and student strengthen the teaching and learning process.<sup>(5)</sup>

In the opinion of the authors, the virtualization of the University of Medical Sciences of Matanzas has been a process driven by the need to adapt to new technologies and teaching methodologies, especially in the context of the COVID-19 pandemic. This approach seeks to improve access to higher medical education and modernize academic training, adapting to undergraduate education as a contribution to the formation of the current desired professional model, with implications for the governance, direction and management of its fundamental processes (teaching, research and extension).

Virtual education has characteristics that greatly differentiate it from face-to-face education. On the one hand, there is greater autonomy and independence in the development of the learning process for students, since they can largely define their pace of work. On the other hand, students give a more practical sense to the objectives of this process because it allows them to develop a work activity linked to their formal studies, which favors their motivation and job placement.<sup>(6)</sup>

Seen from another perspective, it is worth highlighting that the implementation of online classes is increasingly frequent and easily accessible for students: both the software and hardware requirements for videoconferencing and office applications are now standard in computer systems, whether desktop or mobile, as well as a stable internet connection, which ensure an eventually adequate teaching-learning experience.<sup>(7)</sup>

Another article on the subject states that there can be no quality or relevance if virtual teaching and learning spaces (EVEA) are not used; It is not about eradicating the traditional learning model, but, in essence, about a paradigmatic change in the educational teaching process itself in a society where new space-time relationships are in education.<sup>(8)</sup>

The authors suggest that virtualization can facilitate access to undergraduate medical education. This is especially relevant where mobility can be a problem. Students can manage their study time more effectively, allowing them to combine their studies with other responsibilities, such as work or family. They also assume that the availability of online resources, such as simulations, videos and virtual libraries, can enrich the learning experience and provide additional tools for medical training. Virtualization can encourage collaboration between different disciplines and universities, allowing students to interact with professionals from various areas of health.

Unfortunately, virtual education faces obstacles for those who do not have access to an essential device with a good internet connection. On the other hand, Contreras Jordán et al.,<sup>(9)</sup> highlights in their research that there is a deficit of different types of technological resources when a student faces virtual education since there are limitations that have preexisted for a long period of time and therefore, the vast majority partially hinder the educational process.

The virtualization of the medical university in Matanzas can be a powerful tool to improve undergraduate medical education, as long as the challenges it presents are adequately addressed. It is essential to find a balance between theoretical online education and practical training in clinical environments. In addition, it is important that medical institutions work to ensure that all students have equal access to the resources necessary for their training.

In this sense, it is not enough to have the most modern means; It is also necessary to create a culture that encourages change in pedagogical mediations, overcoming teaching by exposition and learning by reception, together with the implementation of new active and interactive learning paradigms. In addition, it is necessary that teacher training allows teachers to understand how to take advantage of technologies to positively transform teaching in the classroom.<sup>(10)</sup>

Without a doubt, as Hernández Ugalde et al.<sup>(3)</sup> suggest, the technological revolution represents one of the key trends that will define future higher medical education. Currently, ICTs occupy an important place in university training processes, combining face-to-face and virtual classes, thus making educational spaces more flexible, with which the virtual modality constitutes a fundamental change in the teaching-learning dynamic.

The virtualization of the Matanzas University of Medical Sciences represents an opportunity to modernize undergraduate medical education and make it



more accessible, but it also poses challenges that must be addressed to guarantee quality training. The key will be to find a balance between online education and practical training, as well as ensuring that all students have access to the necessary resources.

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## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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