

у них є лише основні характеристики. А поєднання моделювання та ігрових форм навчання дозволяє підвищити якість підготовки фахівців, підтримуючи необхідний рівень цікавості до навчального матеріалу та забезпечуючи формування необхідних знань та навичок.

Література:

1. Mir-nauki. URL: <https://mir-nauki.com/PDF/42PDMN315.pdf>
2. Modeling and Simulation in an Educational Context. URL: https://www.researchgate.net/publication/341198067_Modeling_and_Simulation_in_an_Educational_Context_Teaching_and_Learning_Sciences
3. Elibrary. URL: http://elibrary.kubg.edu.ua/id/eprint/30533/1/I_Mashkina_FITU.pdf
4. ReasoningMind. URL: http://mat.1sep.ru/view_article.php?ID=201000609
5. Alice – TellStories. Build Games. Learn to Program. URL: <https://www.alice.org/>

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TECHNOLOGIES OF VIRTUAL PATIENTS AS AN OPTION FOR THE FORMATION OF CLINICAL REASONING IN MEDICAL STUDENTS

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Shorter hospital stays, specialization of care, higher patient safety measures, and shortage of clinical teachers all diminish the traditional opportunities for the training of health professions through direct patient contact. Early health professions education is often dominated by theoretical presentations with insufficient connection to clinical practice. The above-mentioned problems have become particularly acute in the COVID-19 pandemic era, and in Ukraine additionally due to martial law and mass forced migration.

In this case, the search for information and communication technologies that would realistically bring the student closer to practical activities and help

acquire general and special competencies for the development of clinical reasoning is justified. One of these technologies is virtual patients.

Virtual patients are defined as interactive computer simulations of real-life clinical scenarios for the purpose of health professions training, education, or assessment. This broad definition encompasses a variety of systems that use different technologies and address various learning needs. The learner is cast into the role of a health care provider who makes decisions about the type and order of clinical information acquired, differential diagnosis, and management and follow-up of the patient. Virtual patients are hypothesized to primarily address learning needs in clinical reasoning [1, p. 14676; 2, p. 813–818].

Work with virtual patient technology by senior students is primarily intended to improve clinical reasoning as one of the basic concepts in the activity of a future doctor.

Clinical reasoning is a core component of clinical competency that is used in all patient encounters from simple to complex presentations. It involves synthesis of myriad clinical and investigative data, to generate and prioritize an appropriate differential diagnosis and inform safe and targeted management plans. Clinical reasoning is the «thinking and decision making processes associated with clinical practice». It involves pattern recognition, knowledge application, intuition, and probabilities. It is integral to clinical competency and is gaining increasing attention within medical education. Much has been written about the cognitive processes underpinning reasoning strategies and the myriad ways educators can enhance learners' clinical reasoning abilities [3, p. 1631–1636].

Problems with clinical reasoning often occur because of inadequate knowledge, flaws in data gathering and improper approach to information processing. Some of the educational strategies which can be used to encourage acquisition of clinical reasoning skills are: exposure to a wide variety of clinical cases, activation of previous knowledge, development of illness scripts, sharing expert strategies to arrive at a diagnosis, forcing students to prioritize differential diagnoses; and encouraging reflection, metacognition, deliberate practice and availability of formative feedback [4, p. 787–794].

Bukovinian State Medical University is involved in a project «Virtual learning resourcing for clinical reasoning training at Ukrainian health schools» with the cooperation of University of Augsburg, sponsored by DAAD (Germany Academic Exchange Service). The programme «Ukraine digital: Ensuring academic success in times of crisis» of the German Academic Exchange Service (DAAD) supports Ukrainian universities in maintaining, implementing and offering their digital teaching programs so that students in Ukraine have the perspective to graduate despite the restrictions caused by the

war. Objectives of the project are adaptation available resources from the virtual patients and curriculum on clinical reasoning projects to Ukrainian needs; integration the resources into the curricula of the project partners and to collect feedback from students in order to make improvements, if necessary; establishing long-term partnerships between all project partners.

At the Bukovinian State Medical University, the project is implemented since October 2022. In 1 month, 75 graduates' students took part in the project. After work with a series of virtual patients, students answered the questions of an anonymous online questionnaire with options for choosing the agreement with the statements and conclusions on improving clinical reasoning.

The results of an anonymous survey conducted after virtual patients implementation showed a greater proportion of students strongly or mostly agreed with the positive aspects of working with virtual patients in a project format. In particular, the students strongly or mostly agreed on the updating thinking process as new information became available (87,8% strongly agreed and 9,5% mostly agreed), the structuring their own acquired knowledge and thoughts (73% strongly agreed and 20,3% mostly agreed) and applying it in the form of a close-to-reality diagnostic search, refuting/confirming hypotheses based on differential diagnosis (74,3% strongly agreed and 20,3% mostly agreed), and making their own medical decisions (71,6% strongly agreed and 25,7% mostly agreed).

Based on the results of an anonymous survey, the implementation of virtual patients for the purpose of developing and improving clinical reasoning can be considered justified with the subsequent dissemination of the acquired experience.

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IN HIGHER LEGAL EDUCATIONAL INSTITUTIONS**

**ВИКОРИСТАННЯ СУЧАСНИХ ІНФОРМАЦІЙНИХ
ТЕХНОЛОГІЙ У ВИЩИХ ЮРИДИЧНИХ
НАВЧАЛЬНИХ ЗАКЛАДАХ**

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