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DIGITAL TRANSFORMATION IN MEDICAL EDUCATION

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Annotatsiya
At the present stage, the integration of media technologies into the digital transformation of education has become a critical issue across all fields. This process represents the integrated interaction of information and communication systems within modern education, which is highly complex and dynamically changing. The study highlights the importance of media tools in enhancing educational efficiency and adapting to new digital realities.
Keywords: professional education**,** electronic society**,** digital transformation.

ЦИФРОВАЯ ТРАНСФОРМАЦИЯ В МЕДИЦИНСКОМ ОБРАЗОВАНИИ

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Аннотация
На современном этапе профессиональное образование требует не только подготовки студентов к выполнению профессиональных задач, но и их готовности эффективно жить в современном мире, характеризующемся высокой сложностью и динамичностью изменений. Концепция «электронного общества», предложенная канадским философом и культурологом Маршаллом. Маклюэном, относится к обществу, в котором из фрагментированных данных в различных областях формируется единый информационный ландшафт. В таком обществе влияние средств массовой информации на общественную жизнь становится особенно заметным.
Ключевые слова: профессиональное образование, электронное общество цифровая трансформация.

Introduction

По мнению Маклюэна, подготовка специалистов в различных сферах и внедрение новейших технологий имеют решающее значение для развития современных социальных систем. Это, в свою очередь, создает уникальную медиасферу, известную как «информационно-коммуникационное пространство». At the present stage, professional education not only requires preparing students to perform professional tasks, but also demands

that they are ready to live effectively in a modern world characterized by highly complex and dynamically changing conditions. The concept of the "electronic society," introduced by Canadian philosopher and cultural theorist Marshall McLuhan, refers to a society in which a unified information landscape is formed from fragmented data across various fields. In such a society, the influence of mass media on social life becomes clearly evident. According to McLuhan, training specialists in various fields and implementing the latest technologies are crucial for the development of modern social systems. This, in turn, creates a unique media sphere known as the "information and communication space."

The methodological basis of this study consists of practical research on the implementation of digital technologies from various scientific fields in the pedagogy of higher medical education institutions. In the context of continuous modernization within the modern education system, it is essential to develop an individual growth pathway to shape professional personnel into highly qualified specialists. The digitalization of medical education is closely linked to scientific and technological progress. Digital methods and objective knowledge assessment systems necessitate the introduction of new educational approaches. Innovations such as virtual patients, electronic atlases, and other technologies significantly improve the educational process. Digital transformation refers to a fundamental change in the educational process through the use of digital technologies. It is not only about adopting new tools, but also about transforming teaching methods, assessment systems, and learning approaches.

Main Directions of Digital Transformation in Medical Education

Simulation and Virtual Patients. Virtual patients allow students to practice clinical scenarios in a safe environment. Simulation centers help to strengthen practical skills under realistic conditions. Benefits: learning from mistakes, practicing without stress, the ability to repeat training multiple times.

Electronic Atlases and 3D Models. Interactive 3D models in anatomy, physiology, and pathology. "Virtual cadaver" systems and similar technologies.

Benefits: better visual understanding, improved surgical and diagnostic skills. Distance Learning and LMS (Learning Management Systems) Platforms such as Moodle, Canvas, and Blackboard. Online courses, video lectures, quizzes, and forums. Benefits: Effective communication between teachers and students, personalized learning pathways, education independent of time and location. Artificial Intelligence (AI) and Big Data AI supports diagnostics, clinical decision making, and student assessment. AI can analyze test results and learning patterns automatically. Benefits: faster and more accurate assessment, personalized learning (adaptive learning).

Conclusion

The digital transformation of medical education brings the acquisition of professional knowledge to a new level, enabling students to master complex competencies more effectively. The introduction of digital technologies such as virtual patients, electronic atlases, and simulation systems significantly enhances the learning process, providing practical experience in a safe and controlled environment. In addition, the use of objective assessment systems and digital tools improves the accuracy and transparency of evaluating students' knowledge and skills. As a result, digitalization contributes to the formation of modern specialists who can successfully adapt to the rapidly changing conditions of the digital era. Furthermore, it promotes the development of a new digital medical culture, where information literacy, ethical use of data, and digital communication become essential components of professional practice.

References

1.Kumar, S., & al. (2020). Digital transformation in medical education: Opportunities and challenges.

2. Dedeilia, A., Sotiropoulos, M. G., et al. (2020). Medical education in the time of COVID-19: A review. Surgery.

3. Cook, D. A., & Triola, M. M. (2009). Virtual patients: A critical literature review and proposed next steps. Medical Education.

4. Issenberg, S. B., et al. (2005). Features and uses of high-fidelity medical simulations that lead to effective learning: A BEME systematic review. Medical Teacher.

5. Ellaway, R., & Masters, K. (2008). AMEE Guide 32: e-Learning in medical education Part 1: Learning, teaching and assessment. Medical Teacher.

6. Frehywot, S., et al. (2013). eLearning in medical education in resource constrained low- and middle-income countries. Human Resources for Health.

7. Topol, E. (2019). Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again. Basic Books.

8. Chen, M., et al. (2019). Artificial intelligence in healthcare: Past, present and future. Stroke and Vascular Neurology.