

IMPROVING LEARNING OUTCOMES IN HIGHER MEDICAL EDUCATION USING INNOVATIVE TECHNOLOGIES

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Abstract

This article analyzes the issues of improving learning outcomes in higher medical education through the use of innovative technologies. It highlights the importance of modern digital educational resources, simulation-based learning systems, and interactive platforms in developing students' knowledge and practical skills. The study also examines the potential of innovative technologies to enhance the quality of medical education, individualize the learning process, and strengthen clinical thinking. The results indicate that innovative approaches significantly increase student engagement and improve overall educational effectiveness.

Keywords

Higher medical education, innovative technologies, learning outcomes, digital education, simulation-based learning, interactive platforms, clinical skills, quality of education.

INTRODUCTION

Higher medical education plays a crucial role in preparing qualified healthcare professionals capable of meeting the demands of modern healthcare systems. In recent years, rapid advancements in technology have significantly influenced educational methodologies, particularly in medical training, where both theoretical knowledge and practical skills are essential.

The integration of innovative technologies such as digital learning platforms, virtual simulation systems, and interactive multimedia tools has transformed traditional teaching approaches. These technologies provide students with opportunities to engage in active learning, improve clinical reasoning, and practice medical procedures in a safe and controlled environment.

Despite these advantages, the effective implementation of innovative technologies in medical education still faces several challenges, including limited

resources, insufficient digital competence among educators, and unequal access to technological infrastructure. Therefore, it is essential to explore how these technologies can be effectively integrated to enhance learning outcomes in higher medical education.

This study aims to examine the role of innovative technologies in improving the quality and effectiveness of medical education and to identify their impact on students' academic performance and clinical skill development.

"From this perspective, improving the effectiveness of education through innovative technologies in higher medical education is considered one of the urgent scientific and practical issues"[1, 57]. This article analyzes the theoretical and practical aspects of this issue, as well as the role of innovative approaches in the educational process.

MAIN PART

The introduction of innovative technologies in higher medical education plays an important role in improving the quality of the educational process and developing students' professional competencies. While traditional teaching methods are mainly focused on delivering theoretical knowledge, modern innovative approaches aim to integrate theory with practice.

Today, simulation-based training systems are widely used in medical education. "This method allows students to practice practical skills in conditions close to real clinical situations in a safe environment. It helps develop their clinical thinking and reduces the risk of errors"[3, 25].

In addition, e-learning platforms and digital resources have become an integral part of the medical education process. Online courses, virtual laboratories, and multimedia materials make the learning process more convenient and effective for students. These technologies promote independent learning and enable students to work on themselves.

Interactive teaching methods such as case-based learning, problem-based learning, and collaborative group projects play a significant role in enhancing the effectiveness of medical education. These approaches support the development of students' critical thinking, clinical reasoning, decision-making abilities, and teamwork skills.

In addition, the integration of modern information and communication technologies improves interaction between educators and students and enables a more personalized learning process. This allows instructors to consider each student's individual level of knowledge, learning style, and pace of learning.

Overall, innovative technologies represent a key factor in improving the quality of education in higher medical institutions. They contribute to strengthening practical competencies and preparing highly qualified and competitive medical professionals.

As we know that at present interactive methods, innovation technologies and information technologies have been on of important tasks in integrating in education and teaching. Because modern technologies help the youth to gain knowledge, to learn independently, to analyze and make conclusions on the knowledge they gained. "Educating young people in the spirit of patriotism and respect for our national values, protection from various ills and threats, increasing the effectiveness of propaganda work is one of the pressing problems of today. The rapid development of Information Technology and globalization processes are setting new tasks in the areas of human factor, education, new pedagogical technology"[5, 3].

The genesis of socio-cultural technologies in scientific management of society is the development of science, the rise of human thinking and scientific knowledge. The solution of existing problems in the society is related to innovative activities. The genesis of socio-cultural technologies is also closely linked to the development of "technology".

One of the key challenges in building a democratic society is transforming human education and ways of thinking. The development of a new type of mindset becomes a crucial factor in progress, as it shapes how individuals understand their role in today's democratic world. Human beings are the main wealth of every nation. From this perspective, the primary way to increase a nation's wealth and strength is to develop each person's creative abilities. Nowadays, the money spent on education is not just an ordinary expense; it should be seen as an investment that can bring rapid economic returns.

The word "innovation" (from the Latin "innovation") appeared in the middle of the 17th century and means the entry of a new one into a certain sphere, implantation into it and the generation of a whole series of changes in this sphere. Innovation is, on the one hand, the process of updating, implementation, implementation, and on the other hand, it is the activity of introducing innovation into certain social practices, and not at all"[2, 29].

Innovation - is theoretically grounded, focused and practice - oriented innovation. The objectives of the innovative education are:

- Ensuring a high level of intellectual and personal and spiritual development of the student;

- Creation of conditions for mastering the skills they scientific way of thinking;
- Teaching methodology innovations in socio-economic and professional spheres.

Nowadays required to prepare a new professional quality, society needs not just a competent worker, and the expert, capable to self-oriented creative approach to business, with high culture of thinking, multilateral development people.

Many teachers of special subjects now ask, what should be a lesson for modern students with the knowledge of the maximum of what they are given.

Conducting lessons of special subjects using video, computer presentations - is a powerful incentive to learn. Through these lessons the students become active mental processes: perception, attention, memory, thinking; much more active and quicker arousal of cognitive interest. Information technologies provide information in various forms and thus make the learning process more effective. Saving the time required studying a particular material, the average is 30%, and acquired knowledge stored in the memory is much longer. Thus, the use of ICT in conjunction with the right technology training and create the necessary level of quality of education, variation, differentiation and individualization of learning.

In this regard, the following conclusions and highlight a number of advantages such a lesson in comparison with the ordinary:

- Improves the absorption of new material, as a result of the predominance of Visual thinking students easily perceive the information thus supplied;
- In the course of the students formed spatial and logical thinking;
- Naturally achieved by optimization of the pace of work of students;
- It is possible with the help of computer animation in the classroom to create a problematic situation, resulting in a lesson assumes the character of educational games, and most of the students increases the motivation of educational activity.

Integration of conventional lessons with a computer allows the teacher to shift part of their work on a PC, while making the learning process more interesting, diverse and intense. "In particular, it is faster recording process definitions, objectives, and other important parts of the material, because the teacher does not have to repeat the text several times (he brought it to the screen), the student does not have to wait until it is again required him to fragment"[4, 89].

All of this shows that lessons using computer presentations are more effective than conventional lessons. The essence of innovative technologies aimed at developing skills is to ensure that students engage with problems in such a way that, while solving them, they master the necessary methods and techniques of learning activity.

CONCLUSION

The use of innovative technologies, especially computer presentations, is more effective than traditional teaching methods. They increase students' activity, develop independent thinking, and improve practical skills. Therefore, applying modern technologies in the educational process helps learners acquire knowledge more effectively and in a shorter time.

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