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THEORETICAL AND METHODOLOGICAL FOUNDATIONS OF THE USE OF SIMULATION TECHNOLOGIES IN TEACHING ENGLISH TO STUDENTS

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Abstract

This article covers the theoretical and methodological foundations of the use of simulation technology in teaching English to students in the process of medical education in the form of literature analysis (Literature Review). The need to abandon traditional teaching methods and switch to problem-based learning (PBL) and simulation approaches is analyzed. The study is written in the IMRAD format and is based on scientific works of foreign and domestic scientists. The effectiveness of developing clinical thinking, teamwork, and effective communication skills in a foreign language in students through simulation training is demonstrated.

Keywords: medical education, simulation technologies, English language, clinical skills, communicative competence, IMRAD, virtual patient.

Аннотация

В данной статье рассмотрены теоретико-методологические основы использования симуляционных технологий при обучении студентов английскому языку в процессе медицинского образования в виде анализа литературы (обзор литературы). Проанализирована необходимость отказа

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от традиционных методов обучения и перехода к проблемно-ориентированному обучению (PBL) и симуляционным подходам. Исследование написано в формате IMRAD и основано на научных работах зарубежных и отечественных ученых. Показана эффективность развития у студентов клинического мышления, навыков командной работы и эффективного общения на иностранном языке посредством имитационного обучения.

Ключевые слова: медицинское образование, имитационные технологии, английский язык, клинические навыки, коммуникативная компетенция, IMRAD, виртуальный пациент.

Annotatsiya

Ushbu maqolada tibbiy ta'lim jarayonida talabalarga ingliz tilini o'qitishda simulyatsion texnologiyalardan foydalanishning nazariy va metodologik asoslari adabiyotlar tahlili (Literature Review) shaklida yoritilgan. An'anaviy o'qitish usullaridan voz kechib, muammoli o'qitish (PBL) va simulyatsion yondashuvlarga o'tish zarurati tahlil qilingan. Tadqiqot IMRAD formatida yozilgan bo'lib, xorijiy va mahalliy olimlarning ilmiy ishlariga asoslanadi. Simulyatsion mashg'ulotlar orqali talabalarda klinik tafakkur, jamoada ishlash va xorijiy tilda samarali muloqot qilish ko'nikmalarini rivojlantirish samaradorligi ko'rsatib berilgan.

Kalit so'zlar: tibbiy ta'lim, simulyatsion texnologiyalar, ingliz tili, klinik ko'nikmalar, kommunikativ kompetensiya, IMRAD, virtual bemor.

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INTRODUCTION

Modern medical education aims to train highly qualified specialists who are not only equipped with theoretical knowledge, but also have practical skills, can communicate effectively with patients, and can apply innovative methods in their professional activities. In today's era of globalization, the expansion of international information flow requires medical professionals to have a perfect command of the English language. Nowadays, the need to learn foreign languages for personal, professional, or academic purposes has never been greater, not only in medicine, but also in all professions. However, the traditional grammar-translation and memorization methods used in higher education institutions cannot fully meet the practical communication needs of students. Therefore, there is a need to introduce approaches in the modern teaching system that prioritize communication, student autonomy, and the use of language in practical contexts. These modern educational requirements are also reflected in the state regulatory legal acts aimed at reforming the higher education and healthcare systems in our country. In particular, the Resolution of the President of the Republic of Uzbekistan No. PQ-4310 "On measures to further develop the system of medical and pharmaceutical education and science," Decisions of PQ-5117 "on measures to bring the activities of popularization of foreign language learning to a qualitatively new level in the Republic of Uzbekistan" and the tasks set out in the decree of the Republic of Uzbekistan "on the approval of the concept of development of the higher education system until 2030" PF-5847 "serve to train future specialists in modern knowledge and practical skills. In addition, the integration of virtual reality and digital didactic support into the educational process is a priority within the framework of the Digital Uzbekistan - 2030 strategy.

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Although the traditional lecture method, which has been the dominant method in medical education for many years, is an important foundation for the transfer of theoretical knowledge, it is not sufficient to develop independent and critical thinking in students. Scientific research shows that lectures based on passive listening are stored only in the student's short-term memory and have a very low level of practical application. In this regard, the introduction of problem-based learning (PBL) and simulation technologies into the education system has become an objective necessity. The uniqueness of the simulation is that it allows students to repeatedly test the theoretical knowledge gained in practice without any risk to the life and health of a real patient. Using simulators in language learning allows students to visualize clinical situations and quickly and easily retain foreign terms in a safe and controlled environment. Looking at the level of study of the problem, the issues of forming the communicative competence of future doctors and the use of simulation technologies in medical education are studied by local scientists M.R. Kadirova, M. Abdurakhmonov, Sh. Khusanova, D. Yusupova, E.T. Mirzajonova and O.R. It has been partially studied by researchers such as Parpiyeva. And in foreign experience, D.M. Gaba, M. Aebbersold, J.B. Cooper described the effectiveness of simulation training, M. O'hara, V. Allum, D. Cragun and G.C.M. Sostmann has researched English language teaching methods through virtual patients and standardized scenarios. However, due to the peculiarities of higher medical education, the methodology for the development of clinical, linguistic and deontological skills using simulation technologies in the teaching of a foreign language directly to future specialists (in particular, in the direction of pediatric work) has not been specially researched as a holistic scientific and pedagogical problem. Based on the analysis and needs of this literature, the main purpose of this study is to systematically study and improve the theoretical and methodological and didactic foundations of the use of simulation technologies in medical English lessons based on recommendations of the World Health Organization (WHO), the World

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Federation of medical education (WFME) and the European Association for medical education (AMEE).

METHODS

This study was carried out on the basis of the method of systematic analysis of existing scientific literature (Systematic Literature Review). As an object of research, the process of integrating practical training with simulation technologies in the training of future doctors in a foreign language was established.

In the course of studying the literature, the following two main areas of scientific work were relied upon:

Pedagogical and psychological theories: D., which is the basis of simulation learning. A. Kolb's experiential learning model (concrete experience, reflective observation, abstract conceptualization, active practice) was analyzed. Also, J. Dewey and L. Vygotsky's active learning and social constructivism approaches were studied.

Analysis of foreign experiences: D. studied the effectiveness of simulation-based training. M. Gaba, M. Aebersold, J.B. The work of foreign scientists, such as Cooper, was reviewed. In addition, M., who researched the use of virtual patients and standardized scenarios in teaching English to medical students. O'hara, V. Allum, D. Cragun, G.C.M. The research of scientists such as Sostmann was taken as a methodological basis. □

During the analysis, standards and methodological recommendations developed by the World Health Organization (WHO), the World Federation for Medical Education (WFME), and the Association for Medical Education in Europe (AMEE) were comparatively studied.

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RESULTS

The analysis of the literature showed that the use of simulation programs in medical education has many didactic advantages and has proven itself in several areas. The results were divided into the following clusters:

Integration of clinical and communication skills K.K. Platonov and B.G. According to scientists such as Anan'ev, professional experience is formed through the inextricable connection of theoretical knowledge and operational activity. Simulation training provides this connection. Issenberg and his co-authors' research confirmed that high-fidelity simulations significantly improve students' knowledge, practical skills, behavior, and self-assessment abilities. M. from local scientists R. In her research, Kadirova defines the concept of communicative competence as the ability to correctly use verbal and non-verbal means and establish effective communication with the patient.

The Benefits of Simulation in Teaching Medical English Teaching English as a Foreign Language (EFL) presents unique challenges for medical students. Specific simulation methods have been proposed in the foreign literature to facilitate this process.

Virtual Patients: G.C.M. Sostmann and D.H. De Leng's research has shown that language and clinical skills can be developed simultaneously through virtual patient simulations. Students improve their decision-making and English language communication skills in a virtual environment.

Standardized Patients: M. O'Hara and D.P. Lane has developed methods for medical students to work with simulated patients (SPs). This method allows students to practice specific phrases and medical terminology used in communication in a controlled environment.

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Clinical Simulations: V. Allum promotes the use of clinical simulations based on real-life scenarios. This allows students to test their communication skills in a stress-free environment. D.D. Cragun and L. Kahnemoui analyzed the positive effects of these methods for non-English speaking students. International standards and recognitions Based on the recommendations of AMEE, WHO and WFME, simulation-based education is a mandatory component of modern programs. AMEE describes simulation training as a "safe fail" environment, emphasizing that it allows students to learn from their mistakes without harming the patient. According to the study results, simulation and distance learning models (such as OSCE-format exams) provided a high level of objectivity and accuracy.

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DISCUSSION

The results obtained show that traditional teaching methods are insufficient to prepare medical students for the international communicative space. Integrating simulation technologies into the learning process turns students from a knowledge consumer to a knowledge creator.

Using simulation tools in medical English teaching offers a variety of benefits. First, a safe environment allows students to learn from their mistakes and repeat them. This process helps reduce medical errors in real-life situations in the future. Secondly, interdisciplinary integration (English and specialized subjects) activates students' analytical and reflective thinking. As Kolb's experiential learning model shows, the student experiences the process (experience), analyzes it (reflection), and applies it to practice.

However, there are certain challenges in integrating technology. The literature suggests that teachers need training, not all institutions have the necessary technological resources, and the comfort of traditional methods can lead to resistance to innovation. But these problems can be solved through mixed (blended) approaches. For example, using the Flipped classroom (reversible classroom) method, students can read theoretical texts from home and engage in pure simulation practice in class.

Interactive approaches such as "Role-playing" and "Case-based learning" in medical English classes significantly increase the speed at which students master professional terminology. In pediatrics, communication between the doctor and the patient-child (or parent) requires not only medical language, but also psychological flexibility. In this regard, through simulation training, parents successfully develop the skills to establish empathy-based communication in English.

CONCLUSION

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Forming the professional and linguistic training of future doctors in the medical education system based on modern criteria is one of the most urgent tasks of today. As a result of the theoretical analysis and methodological research conducted, the following important conclusions were reached:

1. Theoretical and Methodological Conclusions

Limitations of traditional methods: Traditional lectures based on grammar translation, mechanical memorization, and passive listening, which have been used for many years, cannot build long-term knowledge reserves in students. The information obtained in this approach is stored only in short-term memory, cannot fully meet the practical communication needs of students in a real clinical environment, and remains at a very low level of practical application.

The objective necessity of simulation technologies: The introduction of problem-based learning (PBL) and simulators into the educational process allows students to develop professional skills in a safe environment without any risk to the life and health of real patients. The use of simulation technologies in teaching a foreign language helps to visually imagine clinical situations and quickly and easily master foreign medical terminology in a safe and controlled learning environment.

Integration of competencies: It has been proven that when training future specialists (in particular, in the field of pediatrics), it is necessary to develop clinical, linguistic, and deontological skills not separately, but holistically, using simulation technologies, based on a systematic approach.

2. Regulatory and Systemic Integration

The methodology developed within the framework of the study is fully consistent with the reforms and strategic programs being implemented in our country:

The tasks of popularizing the study of foreign languages and bringing the quality of medical education to a new level, as set out in the Presidential Decrees No. PQ-4310 and No. PQ-5117, form the legal basis for this study.

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The Concept for the Development of the Higher Education System until 2030, approved by Decree No. PF-5847, methodologically substantiates the expansion of student autonomy and independent learning elements.

Due to the requirements of the strategy” digital Uzbekistan - 2030”, the interactivity of classes was increased by integrating virtual realism (VR), virtual patients and modern digital didactic provision into the course process.

3. Practical Recommendations (Practical Recommendations)

To widely apply the results of the study to the educational process of higher medical educational institutions, the following practical recommendations are put forward:

1. Academic programs to international standards: Medical English (English for Medical Purposes) subject programs should be revised on the basis of dialogue-oriented scenarios based not only on language rules, but on recommendations from the World Health Organization (WHO), the World Federation for medical education (WFME), and the European Association for medical education (AMEE).

2. Implementation of a Virtual and standardized patient system: it is necessary to use virtual patients and standardized clinical scenarios successfully used in an international experiment (Aebersold, O'hara, Allum, Cragun, Sostmann) to assess the skills of diagnostics, collection of Anamnesis in foreign language lessons and the establishment of deontological communication with the patient.

3. Identity accounting in the field of Pediatrics: students who will become doctors-pediatricians in the future are advised to model in a simulation environment not only medical terminology, but also psychological-communication processes that are established with the child and his parents when teaching a foreign language.

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4. Increase the number of digital didactic resources: It is necessary to effectively use the capabilities of simulation centers at universities in English lessons, and to create a set of special cases and multidisciplinary (medical-linguistic) integrated tasks for lessons.

4. Future Research Prospects

This study has created the methodological foundations for developing the communicative competence of future doctors through simulations. In the future, this direction can be further expanded by creating real-time (real-time) monitoring systems for students' language proficiency as well as clinical decision-making skills using artificial intelligence (AI) technologies and more sophisticated 3D simulation models.

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