USE OF MODERN METHODS IN TEACHING "INFORMATION TECHNOLOGY" IN MEDICAL EDUCATION

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Abstract. This article presents the results of a study of the use of effective methods and means of teaching students in medical institutes. The relevance of the article lies in the fact that, in accordance with the requirements of the time, the practical significance of using new teaching methods in the training of highly qualified doctors, as well as the possibility of choosing teaching methods used to determine the level of their effectiveness, is considered. Two teaching methods have been studied and selected, which were used to determine the effectiveness of teaching information technology in medical education, namely virtual reality technology and cloud computing systems. A comparative analysis of the use of modern technologies in experimental and control groups in the Andijan state medical Institutes was carried out.

Keywords: virtual reality technology, cloud technologies, Google Classroom, Google Apps for education, VR training for a doctor.

Introduction.

The years of independence of the Republic of Uzbekistan are marked by the implementation of large-scale reforms aimed at determining the prospects of socio-economic and cultural development of the Republic, the desire to take a worthy place in the ranks of the countries of the world community. The study of the experience of developed countries, as well as the implementation of fundamental reforms in all spheres of society, taking into account local conditions, in particular economic and intellectual resources, ensures the achievement of new and new achievements [1,2].

Today, information technologies are developing rapidly, and it is difficult to imagine all industries without information and communication technologies. In this regard, it is necessary to implement the following scientific and methodological tasks aimed at further improving the quality of students' education in such an environment:

1. I consider it expedient to achieve with the organization of training based on information technology in higher education institutions, the widespread use of information technology opportunities in the higher education system.

2. One of the most pressing problems in the field of education is to improve the quality of education, which will serve to prepare

3. The involvement of modern technologies in the educational process will improve the quality of education and prepare a highly qualified specialist.

Virtual reality and cloud technologies are widely used in developed countries around the world, and these technologies significantly expand the opportunities for acquiring skills in the field of information technology. Virtual reality systems are a new concept that is much more difficult to track. Korean scientist Hyun Kim claims in his articles that virtual reality (VR) has a positive effect on learning, since it allows the user to fully immerse themselves in an interactive virtual environment similar to real. VR creates a user environment with a 3D virtual background using advanced computer graphics and various displays and interfaces. This is why VR is widely used

in many fields and fields, including education, where its application is becoming increasingly important in medical education.[3].

In this research, we conducted practical classes with the participation of students of the medical institute using virtual reality and cloud technologies.

Google Classroom was chosen from cloud-based educational platforms. Google Classroom is a cloud-based learning management system that is part of Google Apps for Education. Google Apps for Edication includes several web applications with functions similar to office suites, including Gmail, Hangouts, Meet, Google Calendar, Drive, Docs, Sheets. Google Classroom allows students to access the platform from computers, tablets and smartphones.

The VR Training for Doctor platform was chosen from virtual reality technologies. VR Training for Doctor platform is a practical training of doctors in virtual reality, which allows them to learn and develop various practical skills. Trainees can perform complex procedures many times until they are sure that they have mastered the skills of treating real patients.[4]

Research Methodology.

The study used thematic scientific resources, educational and regulatory documents, methods of study and analysis of educational and methodological literature, pedagogical observation, social survey, comparative analysis of student activities, expert assessment, mathematical-statistical processing of research results.The study was conducted by Halda, who used software tools from simlab soft. Simlab soft produces stand-alone products and plugins for the company's popular 3D modeling packages. Simlab soft's software tools are VR platforms content, which includes platforms such as VR Studio, VR Viewer, VR Collaboration, LMS+VR. And for students in the medical path, the following platforms can be used.To achieve this task, a group of students from the medical, pediatric, dental and pharmaceutical faculties of the Institute was formed. The number of students in the formed group was 121 students who were classified as the first group experimental group and the second control group. The number of students in the experimental group is 66 (54.5%) students. The number of students in the second group is 55 (45.5%) students. Practical training of students in the experimental group was conducted using the technology of virtual reality systems. In the practical control group, training was conducted using cloud systems technology. In order to identify the assimilation of students, as well as to identify the effectiveness of the technologies used, control work was carried out from students. The criterion of student selection in the mathematical and statistical analysis of the numerical data obtained, the Pearson correspondence criterion, the Laplace function was used.

Today, virtual reality systems are a new concept that makes it much more difficult to trace information about it. VR creates a user environment with an advanced computer graphics and a 3-dimensional virtual background using a variety of displays and interfaces. Therefore, VR is widely used in many areas, including educational, medical education, where its application is also important. [4].

Analysis and results.

In order to determine the level of effectiveness of the selected technologies in the teaching of the subject of information technology, various methods were used, such as observation, questioning, testing, a written survey, in order to study the effectiveness of students' work on themselves, a virtual survey was conducted. As a result of the survey, the following data were obtained: the majority of students preferred VR technologies, which showed the development of

the ability to work on themselves - 52.7%, while 47.3% of the remaining students prefer cloud learning technologies.

The results obtained can be seen in this table (Table 1).

(Table 1).

The direction in which the experimental testing is carried out	Research groups	Number of students	Rating (85-100)		Rating (70-85)		Rating (55-70)		Rating (0-55)		teaching quality	educational performance
			quantity	%	quantity	%	quantity	%	quantity	%	%	%
Faculty of treatment	Experimental group (used virtual reality technology)	32	8	25	14	43,7	10	31,3	-	-	68,7	99,9
	Experimental group (used cloud learning technologies)	30	6	20	14	46,7	8	26,7	2	6,7	66,7	93,3
	Experimental group (used virtual reality technology)	34	5	14,7	20	58,8	6	17,6	3	8,9	73,5	91,1
	Experimental group (used cloud learning technologies)	25	6	24	8	32	9	36	2	8	58,0	92,0

We calculate the level of academic performance according to this formula:

$$\bar{X}_{uc\,VR} = \frac{1}{n}\sum_{i=1}^{3} n_i X_I = \frac{1}{66}(13*5 + 34*4 + 16*3 + 3*2) = \frac{255}{66} = 3,8 \approx 3,8$$

$$\bar{X}_{uc\,C\,t} = \frac{1}{n}\sum_{i=1}^{3} n_i X_I = \frac{1}{55}(12*5 + 22*4 + 15*3 + 4*2) = \frac{209}{55} = 3,6 \approx 3,6$$

$$X\%_{uc\,VR} = \frac{3,8}{4}*100\% = 95\%$$

$$X\%_{uc\,C\,tech} = \frac{3,6}{4}*100\% = 90\%$$

$$X\%_{uc\,VR} - X\%_{uc\,C\,tech} = 95\% - 90\% = 5\%$$

The experiment shows that the use of virtual reality systems when broadcasting the science of information technology in medical institutions gave a result 5% more efficient than when using cloud technologies.

Conclusion/Recommendations.

In conclusion, this study proves that the use of virtual reality technologies in medical education can positively affect the motivation and performance of students. The results show that the use of virtual reality technologies can be used to create an environment conducive to autonomy, which encourages students to take responsibility for their education and actively participate in the learning process.

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