

# Impact of Online Learning on Medical Education of Master Students

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**Annotation:** In recent years, after the pandemic, online learning has become very relevant, and the use of distance learning in medicine is becoming a reality. Many students today consider this form of education as an alternative to the usual one, not only when receiving a second education, advanced training, but also choose this way to receive their first higher education. This article provides the results of an analysis of the impact of distance learning on the quality of education in medicine, on the health and performance of students in medical institutions, based on the analysis of a survey of master students.

**Keywords:** Medical Education, Distance Learning, Medical Students

**Introduction.** Distance learning (DL) is one of the forms of distance learning, enabling a person to study a training course in established disciplines and not move away from their usual way of life [1]. DL, like any other type of education, has its own unique history of formation. Being a consequence of the objective process of informatization and incorporating the best features of other forms, distance learning has entered the 21st century as the most promising, humanistic, integral form of education [2]. In the articles and monographs of modern authors dealing with the problems and study of distance education in our country, there are many contradictions, because each of them, before proceeding to the knowledge of the problem, comprehensively investigated the expediency and effectiveness of such education on his personal experience [3]. Currently, medical education also requires the use of new modern innovative methods. Modern medical education, its quality requires the use of innovative transformations in teaching technologies [5]. And educational institutions have a goal - to come up with ways to actively introduce an information and educational system, together with all the necessary electronic resources, and, if possible, quickly and conveniently work with them remotely. But it is obvious that the consumer of educational services must be prepared for distance learning, and we are talking not only about the technical base, computer skills and individual programs, but also about the skills of independent work [6].

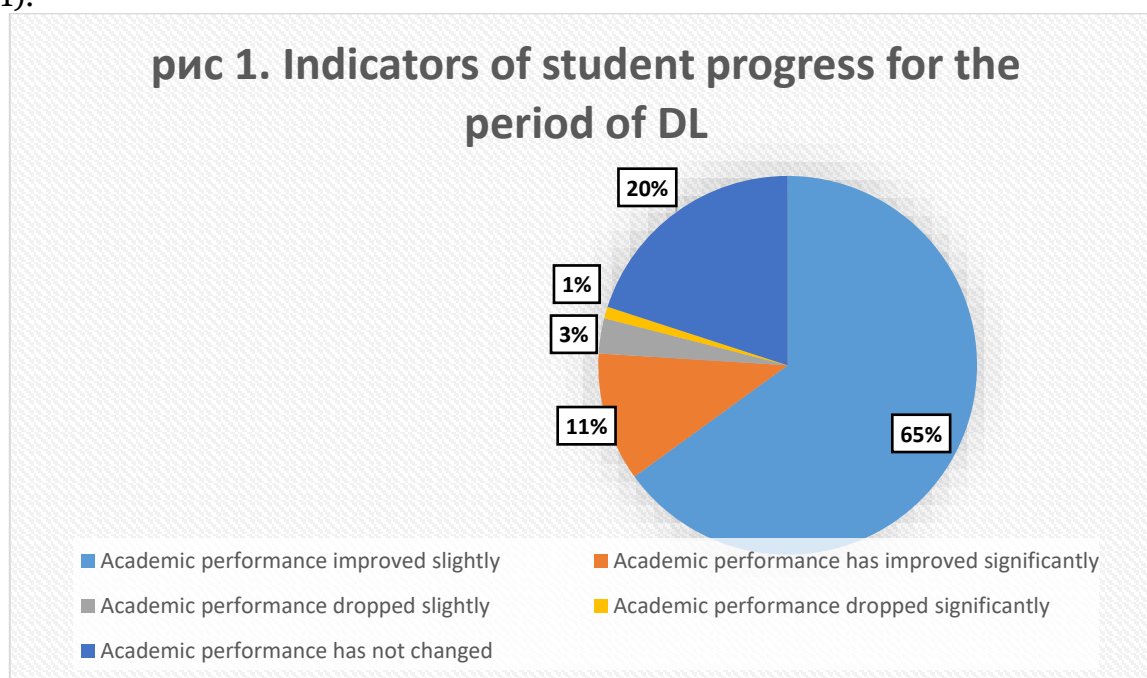
The rapid development of IT technologies has contributed to the solid introduction of distance learning into our lives. A modern teacher at a medical university should have a high level of knowledge not only in the clinical field, but also in pedagogical and information technologies, and have modern knowledge in multimedia nanotechnologies. The teacher conducts online lectures, teleconferences, courses and educational projects [2]. Teachers and students should systematically improve their IT level.

A large amount of time about the teacher requires the creation of extended training materials (video lectures, teaching aids, tasks for practical work), control tools (test base, tests), as well as their subsequent verification and virtual communication with students. After all, all work with students in the portal is carried out individually. After checking the assignment, each student must write down the mistakes and comments. The quality of distance education, of course, depends on the logistics, since work with each master is carried out individually through a personal account. [4].

**Purpose:** to evaluate the effectiveness of distance learning in the educational process among students of masters of the medical university.

**Materials and methods.** Questionnaire-survey research method was used in the work. An analysis of the results of an anonymous survey of 90 students of masters of all directions (Tashkent Medical Academy) aged 24-28 years was carried out: in the ratio of female and male representatives 3:1. The survey was conducted using a specially designed questionnaire, data processing was carried out using the Microsoft Excel 2016 statistical software package.

**Results.** In the course of assessing the conditions of the survey for the organization of distance learning for students, it was found that the majority of the students surveyed (90%) have a separate room at home for the duration of classes in a remote format. Some of the respondents (10%) did not have such a room. And when assessing the technical conditions for distance learning, it was revealed that the prevailing number of masters (99%) have the appropriate equipment (laptop, tablet or computer) and an Internet connection. While several students from the sample (1%) did not have access to the network. From the survey, it was revealed that the majority of students (70%) could easily take time for DL without outside interference, 1/3 of the respondents (30%) distracted family (children, husband). In the course of studying the opinions of respondents about the dynamics of their academic performance over the period of DL, certain changes were established from the survey (Figure 1).



When evaluating the mode of work and rest of students in a remote format, the following features were established in terms of the amount of time spent preparing for distance learning compared to face-to-face. It was found that for most of the surveyed masters (60%) the time has changed: for 23% of students it has increased, for 27% it has decreased. While for the rest (50%), the preparation time remained unchanged. Most of the respondents (89%) took breaks more often during the educational process in DO than during full-time education.

In this analysis of the length of free time of the respondents during the period of distance learning and full-time study, the majority of the students of the Master's degree in the Medical Academy (79%) indicated an increase in it during distance learning. During DL, every second student (45%) spent it physically actively outdoors. Whereas during full-time studies, most of the students (95%) spent their free time physically passively and indoors, and only 5% of the masters rested physically actively in the fresh air.

After the end of the school day in a remote format, students assessed their physical well-being, and their opinion was divided into even parts between "excellent" and "satisfactory" (45% and 51%, respectively). A few people (4%) rated their condition as unsatisfactory. All respondents were asked to indicate the manifestations of deterioration in their health, and in particular the presence of

symptoms of visual and static fatigue during the period of DO. Many students (68%) noted the absence of symptoms of visual fatigue, and the rest indicated the most frequent manifestations of eye strain: a feeling of eye fatigue - in 18%, dry mucous membranes - in 10%, pain and redness of the eyes - in 15%, excessive lacrimation - at 2%.

According to the results of a subjective assessment of the state of the musculoskeletal system, after the end of the school day in a remote format, the majority of respondents (68%) did not feel any discomfort. While 1/4 (20%) of the students identified the presence of pain in the cervical and lumbar regions. When assessing the presence of symptoms of general overwork during the period of DL, more than half of the students (50%) indicated their absence. However, the remaining 50% noted fatigue, drowsiness, decreased attention and concentration. These symptoms were observed in 1/5 (16%) of all students surveyed. A small part (5%) focused on the presence of insomnia and increased irritability. During the survey, master's students emphasized the advantages and disadvantages of this innovative form of organization of the educational process. They referred to the main advantages of distance education: an increase in the amount of free time, independent planning of educational and educational activities, an increase in the amount of time to prepare for classes, as well as comfortable learning conditions, a decrease in the number of stress factors, an individual approach to studying the material, saving material resources due to the lack of costs for public transport as well as the possibility of observing a rational diet. In addition, magistracy students also pointed out the shortcomings of the distance form of the educational process: a decrease in socialization and a lack of practical skills. Based on the results of the study, it can be understood that the majority of students (65%) would like to continue their studies at a medical university in a distance format.

**Conclusion:** 1. According to the research, it can be understood that the majority of students have the appropriate technical equipment and the necessary home conditions for the implementation of education in DL; 2. During DL, compared with face-to-face classes, the physical well-being of students improved. They began to spend more of their free time actively outdoors. But some part had signs of general fatigue, excessive visual and static load on the body; 3. Master's students also noted that there are both pluses and minuses in the distance format of the organization of the educational process. It was noted that the most important advantage is the saving of time and the possibility of its rational use, as well as the availability of conditions for maintaining a healthy lifestyle, and the main disadvantage of this educational process is the lack of practical skills.

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