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Disadvantages and Advantages of Implementing Distance Learning in Higher Institutions of Medical Education

Summary

The article considers the advantages and disadvantages of implementing distance learning for medical students' training in quarantine. The issues of using e-learning methods in distance learning have been analysed. In the teaching methodology, the questions of determining the feasibility, advantages and disadvantages of implementing distance learning in the educational space and distinguishing between the concepts of "distance learning" and "e-learning" appear. The term "e-learning" is often interpreted as synonymous with "distance learning", but the authors of this article note that this is not entirely correct. E-learning is only one of the forms used in combination with other forms of learning. Distance learning at the modern level involves the implementation of the educational process only by the network.

Distance learning is a method of attending class even if students cannot be there physically. According to the Regulation "On distance learning" in Poltava State Medical University, "distance learning is a set of educational services provided through modern psychological, pedagogical, information and communication technologies". The purpose of distance learning at the university is to introduce modern information and communication technologies to train the specialists at the educational and qualification levels "bachelor" and "master", training programmes for interns, and advanced training of doctors according to national educational standards.

The article analyses the modern pedagogical research of Ukrainian and foreign schools and presents the results of the analysis of students' and teachers' opinions on the introduction of distance learning in the educational process. The article also presents the results of implementing distance education at the Poltava State Medical University in the disciplines "Medical Physics" and "Medical Informatics".

The result of the study proved that distance learning has only advantages theoretically. In practice, many problems need to be solved.

Keywords: e-learning, future doctor, information and communication technologies, Medical Informatics, Medical Physics, COVID-19

1. Introduction

Distance learning is not a phenomenon of nowadays and first emerged due to the development of regular mail. In Europe, the so-called Correspondence Training appeared at the end of the 18th century. Students received teaching materials and corresponded with teachers by mail. At the end of the XX century, information and communication technologies (ICT) became

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widespread, and the possibilities of the Internet expanded. The concepts of “e-learning environment of personal learning” and “e-learning” appeared. Some educational establishments created their own websites with information on educational content. These were home assignments, links to additional sources for in-depth study of the subject’s content, the screen of student achievement and more. In addition, due to the widespread use of social networks, the latter has become quite useful for individual and group consultations, communication and training.

The main ideas of digitalisation in the social sphere and education are presented in the legislative documents of the state, which were adopted during the last two years in Ukraine. In particular, the provisions of the Cabinet of Ministers of Ukraine “On approval of the Concept of digital economy and society of Ukraine for 2018–2020 and the Action Plan for its implementation”.

Everything changed in the spring of 2020 when all educational establishments faced an extremely serious problem: how to organise education in quarantine due to the pandemic of COVID-19. It was then that most teachers were forced to adjust to a new type of work. They had to quickly organise the learning process in distance form, and the concept of “distance education” is gaining widespread and total attention.

In the teaching methodology, the questions of determining the feasibility, advantages and disadvantages of implementing distance learning in the educational space and distinguishing between the concepts of “distance learning” and “e-learning” appear.

Analysis of recent research and publications. Many scientific papers and articles around the world are devoted to the theoretical and practical principles of distance learning. Nowadays, the issue of distance learning is the focus of almost all scientists. Many scientific and methodological articles cover issues related to the organisation and features of tutors, individual work of students, technical equipment of distance learning courses, and creating a system of recommendations for implementing distance learning in the educational space.

Miller (2021) has discussed the origins and introduction of distance learning in education.

Saba (2016) analyses the psychological principles of implementing distance learning in education and

notes that “quality and quantity of communication between the instructor and the learner” needs to be focused on.

An article by Aydemir et al. (2015) addresses distance learning development through rapid change and technological advancements.

Bijeesh (2015) and Oliveira et al. (2018) detail the importance of understanding the advantages and disadvantages of distance learning in higher learning.

Ball et al. (2014) analysed and explained why the adoption of distance education in healthcare education might be lagging behind.

Aim of the article. This study aims to reveal the concept of distance learning, identify significant differences between the concepts of “distance learning” and “e-learning”, analyse the problems and imperfections of this form of learning, and determine the feasibility of its implementation.

The following research materials and methods were used in our study:

- analytical method to identify the theoretical and methodological basis of the study;
- scientists’ systematisation and generalisation of approaches to various aspects of the researched problem;
- students’ questionnaires (methodology for identifying the main problems and aspects of pedagogical activity);
- students’ testing (methodology for identifying the overall effectiveness of pedagogical activities).

532 students (326 students of medicine faculty and 206 students of dentistry faculty) of Poltava State Medical University took part in the experimental part of the study. The study was carried out during the 2020–2021 academic years.

2. Research Background

For a long time, humanity has meant only traditional learning and the classroom form of its organisation when talking about learning. However, due to the COVID-19 pandemic in March 2020, all educational institutions were closed because of quarantine measures. Thus, they were forced to move to a distance learning process in the shortest time possible.

As practice showed, the readiness of educational institutions and teachers to implement distance learning

was different. At first, attempts to adjust education met purely technical problems. Teachers and students did not have sufficient access to the Internet, not all participants of this process had the digital equipment necessary for work, and there was a lack of educational content in digital form. That is, all participants in learning were not ready for its distance form.

Consider the definitions of “distance learning” and “e-learning”.

According to the authors (Kukharenko et al., 2020), distance learning is a set of modern technologies that can provide information delivery interactively through information and communication technologies.

Shtykhno (2016) gives another definition: “distance learning is a form of learning using computer and telecommunication technologies that provide interactive interaction of teachers and students at different stages of learning and independent work with the materials of the information network”.

In the order of the Ministry of Education and Science of Ukraine dated 25.04.2013 № 466 “On approval of the Regulations on distance learning”, distance learning is considered an individualised process of acquiring knowledge, skills, abilities and ways of human cognitive activity, which occurs mostly in indirect interaction of participants, which are remot-ed to each other, in a specialised environment that operates based on modern psychological, pedagogical, information and communication technologies.

The term “e-learning” is often interpreted as synonymous with “distance learning”, but the authors of this article note that this is not entirely correct. The European Commission gives the following interpretation of e-learning: it is the process of developing knowledge, skills and abilities with or through the Internet (UNESCO-UNEVOC, 2021).

In our opinion, e-learning is only one of the forms used in combination with other forms of learning, and the Internet is not the only way for students to receive educational information and communicate with other participants in education. In contrast, distance learning at the modern level involves the implementation of the educational process only by the network.

Distance learning is a method of attending class even if students cannot be there physically.

According to the Regulation On distance learning in Poltava State Medical University, “distance learning

is a set of educational services provided through modern psychological, pedagogical, information and communication technologies”. The purpose of distance learning at the university is to introduce modern information and communication technologies to train the specialists at the educational and qualification levels “bachelor” and “master” training programmes for interns and advanced training of doctors according to national educational standards.

The task of distance learning at the university is to provide students with the opportunity to exercise the constitutional rights to education and professional qualification, advanced training regardless of gender, race, nationality, social and property status, etc.

The schedule of classes and working hours of teachers in the distance mode corresponds to the schedule of classes and the approved curriculum. Taking into account the technical capabilities of the educational institution, distance learning is realised both synchronously and asynchronously, using distance online consultations, video lessons, Skype conferences, testing, individual project activities and more.

To successfully organise distance learning, the logistics of education has an important role. It includes constant access to the Internet and the availability of computers, laptops, tablets or smartphones for both teachers and students. The important point is that teachers have to be able to effectively organise distance learning. A teacher has to have a high level of computer competencies and methods of organising distance learning.

Most lecturers and teachers used Google apps (Google Classroom, Google Meet, Google Drive) to organise distance learning at the university and a Viber mobile app for communication with students. An important component of distance learning at the university was also realising lessons at the Zoom platform. It made it possible to bring the distance format closer to the face-to-face and realise the availability of feedback from students and «live» interactive communication.

Humanity has entered a new stage of development in which distance learning will play an important role. Therefore, we consider it necessary to analyse the results of distance learning and identify priority ways to develop online education. In December 2020, students’ opinion polls were conducted at the Department of Medical Informatics, Medical and Biological

Physics of Poltava State Medical University to determine their attitude to distance learning during quarantine.

It is an online survey based on a questionnaire focusing on current issues in higher education after adopting the distance learning system. The survey was held using Google Forms to collect the information. The questionnaire comprised sixteen questions dealing with various aspects of realising distance form in education.

According to the survey results, we found out that distance learning for 73,1% of students is the main source of educational information and for 17,2% an additional source of educational information. At the same time, 67,7% of respondents answered that all disciplines taught to them have information support, and 28% said that only part of the disciplines has remote information support.

Students' opinions on the advantages of distance learning compared to traditional ones are different. In particular, 22,6% of students noted the advantage that they can regulate their own workload. 21,5% of respondents stated that such training develops the student's initiative. 20,4% noted that they receive an additional workload in self-education. 19,4% of students said there are no benefits of distance learning and traditional learning is necessary.

In our study, we found out that the most significant advantages for students at distance learning are:

- opportunity to study at home (60,2%),
- ability to determine the schedule individually (41,9%),
- ability to perform tasks at any time (34,4%),
- ability to constantly monitor students' knowledge (19,4%).

However, 30% of students said that distance learning has no advantages.

The survey showed that most teachers organising distance learning use the following apps: Google Classroom (98,90%), Zoom (95,7%), Viber (94,6%), e-mail (78,5%), Skype (45,2%), Telegram (31,25%), among others, Edmodo (8,6%), Messenger (4,3%), Moodle (3,2%), Facebook (2,2%).

As for the disadvantages of distance learning, 63,4% of the students state they have to spend much time on the computer. 54,8% of the students noted unstable Internet connection, 53,8% a large accumulation of problems in all education subjects, 38,7%

lack of educational materials to study, 37,8% lack of sufficient explanations from the teacher, 35,5% lack of reasoned assessments, 22,6% lack of technical means for video communication.

In general, 17,2% of students rated the level of distance learning as high, 37,6% as sufficient, 34,4% as satisfactory and 10,8% as unsatisfactory.

3. Discussion

Some suggestions and comments on the organisation and improvement of distance learning.

- enhancement of feedback from teachers;
- more clear criteria for grading students' papers and reasoned explanations;
- carrying out more online classes in Zoom;
- extended analysis of the mistakes that students make at test tasks, practical and independent work in order to be able to work on errors;
- the possibility of holding individual classes with students who do not understand the educational material, increasing the attention of teachers to students who do not understand a particular topic;
- unification of digital methods that are used in teaching different disciplines;
- using virtual special medical platforms that allow you to study «on real» (such as anatomy, histology, and microbiology).

Also, during this spontaneous experiment, students' progress at the end of the first and second semesters of the 2019–2020 academic year was analysed. In the first semester, the traditional (full-time) form of education was realised, “e-learning”, and in the second, “distance learning”. The results of the module control, which is carried out at the end of each study module, were chosen as the main indicator of students' success. The maximum number of points a student can receive for module control is 80. The analysis of the results showed that students' educational progress during distance learning increased by an average of 8,96%. However, in September 2020, a control test of students' knowledge was held offline. And the results of student achievement were 15,67% below the level of progress in the period of distance learning.

The main disadvantages of distance learning were formulated by the authors of this article (Isychko, 2014):

- failure of direct contact between student and teacher;
- the focus of distance education is on students' self-discipline, which is almost non-existent;
- lack of practical activities for the student;
- unsystematic control of the student's educational activities;
- identification of the student as a person as a participant in education.

In general, many students say that traditional learning is much better and more effective for them. Most respondents said they are waiting for distance learning and quarantine condition to end and prefer to return to traditional learning, which a remote one can never replace. According to students, although traditional learning is more complex and students have more workload, it is more effective, as there is practice and communication with the teacher and classmates. According to them, no efforts to improve distance learning can bring it to the level of traditional learning. It is possible to make only some "facile" changes, but they cannot change anything. The main problem of distance learning, students say, is that most students simply stopped learning, as you can pass the topic using additional devices and Internet resources. Thus, there is an "educational war" between the student and the teacher. Using this advantage, the student will not again learn something because he understands that all the advantages are on his side, so he will pass the course one way or another.

4. Conclusions

The study results show the main difference between "distance learning" and "e-learning". "Distance learning" indicates a distance between the student and the teacher, and "e-learning" means that this learning occurs via an Internet connection and gadgets. Otherwise, they have the common goal of gaining new knowledge and skills, common educational forms outside the classroom, and direct digital contact with teachers. But the only distance form of learning does not justify the general education purpose. Despite all the convenience and accessibility of distance education, the knowledge that a student receives during distance learning is often superficial, and the classes are unproductive. In addition, the distance learning process takes a long time, and homework is evaluated

and checked uniformly. At the same time, in the case of distance learning, there is an opportunity to create a flexible and individual programme for each student, which is impossible in a traditional school, in a classroom. There is also an opinion that when working remotely with students, much more productive communication is built: it is possible to hold consultations on all emerging issues and get help in working on a difficult topic and additional information in the chosen area. However, this approach to teaching takes more time from the teacher.

As practice shows, distance learning only in theory is so ideal. In practice, there are many problems (organisational, methodological, technical) that need to be addressed. The disadvantages of distance learning must be discussed not only by teachers but also by students.

In our opinion, distance learning can in no way replace traditional learning. But if distance education is needed, this issue should be taken seriously enough to ensure it.

Further research will focus on using elements of distance education in combination with traditional teaching methods. Also, the development of more advanced methods for monitoring students' knowledge level in distance education has to be considered deeper.

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