

Education in Universities in the Context of Distance Education

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The aim of this work is to analyze the framework and approaches to the organization of distance learning in schools and universities. To achieve this goal, the article used both theoretical and empirical methods of scientific research. Thus, the work was based on functional and systematic methodological approaches, as well as the method of analysis and synthesis, comparison, deduction, lesson observation, generalization of independent characteristics. As a result of the study both theoretical and practical aspects of the study were obtained. Accordingly, in the theoretical part the essence of the concept of distance education, its characteristics and features of the organization was disclosed. On the basis of the information received, a practical part was established in which ways and mechanisms for conducting distance learning classes in both secondary and higher education institutions in Ukraine were established. In future scientific papers related to distance learning, it is necessary to consider ways of using artificial intelligence to organize this type of learning process.

Keywords: teaching and learning process, pandemic, social isolation, education institution, teacher

INTRODUCTION

Looking at the events of the past few years around the world, it can be said that they have completely changed the established lives of people. This is true of the COVID-19 pandemic and the introduction of a number of quarantine restrictions that citizens have not faced before. Undoubtedly, the changes have also affected Ukrainian society, which as a result was reflected in each of the branches of public life. No exception is the educational process, which has been translated into a completely new format for Ukraine,

namely distance. So that all the educational institutions started to work remotely to avoid mass gathering. As a result, a number of obstacles and problems were provoked, which immediately affected the quality of the educational process and activities of students. All this is due to the features of the distance learning format, which requires both the perfect technical support and high professional competence of teachers in the field of computer technology (Karataş & Tuncer, 2020; Drobiec et al., 2020).

On this basis, it is possible to determine the essence of the concept of distance education. It should be understood as the organization of the educational process, which is not limited to the territory of the educational institution, and is also carried out through the use of the latest technologies and computer programs. In addition, distance learning is characterized by the personal factor of students. This is because skills such as self-control, self-organization and self-testing play an important role during such training (Bondar et al., 2019). Also attention should be paid to the training of teachers to conduct training sessions in a distance format, as experience indicates that such a subjective factor clearly affected the effectiveness and quality of educational services (Sari & Nayır, 2020).

As for the features of distance education, these should include flexibility, speed, cost-effectiveness, special quality control of education, attraction of modernized technologies and tools for training. Thus, the main features of this form of learning are at the same time its advantages. The disadvantages include only technical factors, namely, the presence of a telecommunications facility and the uninterrupted connection of a person to the global Internet (Tursynbayeva et al., 2020; Kisiolek et al., 2003). However, by analyzing the conditions of modern society, as well as the widespread policy of digitalization in different countries, including in Ukraine, it can be said that for modern students, these conditions are not a problem and do not hinder the educational process (Süğümlü, 2021).

Considering the features of distance education in secondary and higher education institutions, it is necessary to pay attention to the differences of these educational institutions. They are more related to the age of the learner, as well as to their psycho-emotional state and awareness (Nagymzhanova et al., 2019). Thus, the individual characteristics of each pupil should be taken into account in the teaching of the school, as well as the right approach to impart to him the appropriate level of knowledge and skills so that he can reproduce them in the future (Mukhitov et al., 2022; Sadykov et al., 2014). As for institutions of higher education, the educational process has a narrow specialization, and the approaches and methods for teaching students are completely different. Accordingly, previous studies have not yet compared these two types of institutional institutions, in particular their features and properties, especially in the context of distance education (Illarionova et al., 2021).

On this basis, the main purpose of the article is to compare the means and mechanisms for teaching in schools and universities during a pandemic, that is, in the context of distance learning. To achieve this goal, the article performs a list of tasks, namely: the theoretical content of the concept of distance education is characterized; features and properties that influence its organization are defined; current approaches are considered, used in educational institutions of Ukraine, analyzed international experience in the field of distance education in secondary and higher education institutions (Pregowska et al., 2021).

MATERIALS AND METHODS

The study of the educational process in pandemic and therefore remote format is quite complex and multidimensional. That is why the article used a number of scientific and methodological tools, which helped to fully reveal the studied issue. Accordingly, the work consists of an analysis of the separate aspects and features of distance learning, as well as a general study of this process as a holistic phenomenon.

A functional methodological approach was used to set goals and tasks in the article, as well as to form a plan and stages in the work. The basis of the study was thus derived from it, and the main issues and aspects to be considered in the study of the topic were also identified.

It should be noted that for the effectiveness and rationality of the combination of all tools for scientific research, a systematic methodological approach was applied in the article. That is why all the steps and aspects discussed were interlinked. This approach also led to conclusions from the study. The method of analysis and synthesis was used to study each element of the studied question. Thus, at the beginning of the

work, namely in the theoretical part, the main aspects and features of distance learning were separated and considered. These parts were then linked through the synthesis method, which made it possible to establish links between the concepts being taught, in particular distance learning in schools and universities.

The method of comparison played an important role in the article, since in the practical part of the work the basic approaches and tools used to organize the distance learning process in secondary and higher education institutions were compared. As a result, the main common and distinctive features between the properties of these educational organizations were identified. It should also be noted that the study of international experience was carried out on the basis of the method of comparison, which made it possible to introduce promising directions that need to be introduced in Ukraine.

To construct the logical structure of the study the method of deduction was used, due to which the information was disclosed gradually. Thus, at the beginning of the work the main general theoretical concepts, in particular distance learning, were analyzed, and in the next part specific examples of approaches to this format of the educational process were considered. As for the method of pedagogical supervision, its essence is a systematic review of the educational process, reflected in the article. Thus, on the basis of it the level of perception of the pedagogical process by pupils and students in the context of distance learning was established. Also noteworthy is the method of generalizing independent characteristics, which allows the establishment of a procedure for the analysis of a particular pupil or study group, in particular to determine their individual characteristics, which in the future will be taken into account in the development and selection of teaching materials.

The study was carried out in three stages, namely:

- 1) In the first phase, the organizational part of the work was implemented, namely, the plan and tasks of the work. In addition, the theoretical aspects of the studied question have been analyzed.
- 2) In the second phase, current methods and tools used in schools and universities in Ukraine for conducting distance learning sessions were examined. The experience of highly developed countries in this field was also studied.
- 3) In the third stage, the results have been reviewed and conclusions drawn from them.

RESULTS

The issue of the improvement and development of the educational space both in Ukraine and abroad occupies a leading place in the pedagogical scientific doctrine. It should be noted that the introduction of distance learning is also an effective way to digitize the educational environment. It should be noted that the transition is forced and therefore not dependent on the will of the people, it is connected only with the spread of the COVID-19 pandemic and the introduction of quarantine restrictions. Thus, the use of innovative technologies and computer programs is the main tool for the organization of the educational process. It should be noted that the concept of distance learning is understood as the implementation of educational activities using special mechanisms, namely modern technologies, outside the educational institution (Amirova et al., 2016; Saifnazarov, 2019).

From this it can be determined that this technology is the most flexible among others. This factor is due to the fact that it is aimed at providing students, that is, both schoolchildren and students with the most optimal environment in which they will be able to freely master the educational material. The general characteristics of the concept suggest that such an approach to learning provides students with reduced financial costs, as they can receive education even at home. The relevance of distance learning remains high even after the relaxation of quarantine restrictions, which indicates its effectiveness and efficiency. In addition, such an approach to learning involves a change in the teacher's established role. Thus, he is presented in front of schoolchildren and students, in the context of an assistant or mentor, which ultimately positively affects the communication between him and the students. In addition, there is a transformation of the educational process, now the speech of the teacher takes place in the form of a dialogue of two equal persons, one of which is more experienced on a certain issue. In the end, it should be noted that during the distance learning process, a student or schoolboy in the degree of independently performs the work and,

accordingly, possesses educational material, which as a result positively affects his personal qualities, self-control and self-organization (Parker, 2020; Crimi et al., 2019).

In order to establish the features of practical implementation and approaches to this issue, it is necessary to consider the features and features of distance learning. Thus, it must be established that such properties are its advantages or disadvantages. First of all, mention should be made of the speed of distance learning. The role of this topic is extremely important today, as it allows teachers not only to freely provide teaching materials, but also to modify them if necessary, the same cannot be said of printed sources. In addition, due to this property, there is a quick feedback from applicants for education. It manifests itself not only during the verification work, but also in the case of the appearance of additional questions on the academic discipline (Mystakidis, 2020).

The next topic that should also be mentioned is the informational content of the distance learning process. It is certainly difficult to overestimate its role, as it is responsible for the effectiveness of such training activities. In this way, the list of educational sources is broadened for the student or student, since they can receive material both during the lesson and after-hours on web resources and special educational platforms recommended by the teacher. The next topic is convenient communication, which is one of the main differences that distinguish distance learning from the in-person learning. This is reflected in the interaction between educational applicants and teachers, as this process is much faster and more effective through the use of electronic programs and messengers.

It should be noted that this property of remote format allows you to expand the boundaries of the educational institution by thousands of kilometers. This is especially true for students, as they can study in the desired institution of higher education within their own country or behind them, while staying at home. As for the internal learning process itself, it is formed on such characteristic as the pedagogic. It should be agreed that distance education differs in essence and in the way it is organized, so it gives applicants more motivation, in particular through interactivity and flexibility (Aksoğan, 2020).

Of course, changes in the established social relations affect the psycho-emotional state of citizens, especially the young age, but this is one of the signs of distance education. In particular, by taking into account the individual characteristics and wishes of applicants for education, the learning process becomes more comfortable and unhindered, and students have more opportunities for self-expression. The level of communication between peers and teachers also plays a significant role, helping them to develop their potential as well as to break down psychological barriers.

Another feature which is the advantage of distance education is its cost-effectiveness. This is due to the fact that, when studying, applicants for education, as well as teachers, do not need to attend school. As a result, this significantly reduces the costs they had to pay in transport, catering and even clerical services. Thus, savings can be used for special interactive courses or for own needs.

The main advantage of distance learning is its ergonomics. The correct time management is the key to successful present. As a result, applicants, more so for students, can allocate their own school hours. In this way, they can perform tasks at their convenient time, of course, taking into account the deadlines set by the teacher. In addition, distance learning allows you to master the educational material in accordance with the pace convenient for a schoolboy or student, which is an individual feature of everyone.

It is necessary to establish that the educational process in a remote format allows to develop and consolidate a private or public information and education environment. This approach is very popular, more so because of the possibility of posting on such platforms training materials and supporting information on training courses and subjects. As for the sources of information used as an object for the organization of distance learning, these may include: special courses for distance learning, accompanied by electronic journals, which are usually publicly accessible and should be distributed (Bondarenko et al., 2021; Serdali et al., 2016a).

In addition, virtual libraries are an important tool for distance learning, where the applicant can learn the necessary information and also use it in preparation for academic studies. It is quite common to develop private databases of educational resources of specific educational institutions, they may contain personal scientific developments of teachers as well as the applicants of education. Distance education is increasingly

using a variety of interactive tools and mechanisms, not only informative, but also entertaining, allowing to increase the motivation of students to the educational process (Shurygin et al., 2021).

Thus, it can be established that distance learning includes a number of properties that distinguish it from traditional face-to-face learning. The study of such features not only identified its advantages, but also identified the basic tools and instruments used to organize the training process in a remote format. Nevertheless, it should be established that there are some shortcomings. They are essentially technicity, i.e. require the subjects of learning process to have uninterrupted Internet connectivity as well as a modern telecommunication facility equipped with a webcam and a microphone. However, it can be established that the advantages of such training prevail over its disadvantages (Devkota, 2021).

DISCUSSION

Having considered the main theoretical bases should focus on specific ways and tools used to organize distance learning in educational institutions of different levels, that is, to reveal the practical part in the article. First of all, it is necessary to consider the institutions of secondary education and emphasize that one of the most important and priority conditions for the effective and efficient conduct of the educational process in them is the very interaction of all its participants. This increased importance is due to the fact that distance learning poses communication challenges for students and teachers, which is a prerequisite for the smooth running of the learning process. Thus, the obligation to implement the normal activities of the educational institution during the pandemic, that is, in the context of distance learning, varies for the school administration. In addition, this group of actors must develop and approve rules and schedules for interaction between students and teachers in order to carry out their duties and implement the educational plans of the institution (Nagymzhanova et al., 2018).

As for the director of secondary education, he is obliged to decide on an online platform or to develop his own, on which educational materials and news should be published. The supervisor must also check that teachers have the necessary technical devices and Internet access to provide educational services away from the school. Teachers in the distance learning environment have a responsibility not only to provide students with learning material, but also to facilitate students' learning. With regard to the teaching of persons with special educational needs, the teacher shall be guided by the previously developed individual educational trajectory, as well as analyze the effectiveness of individual programs in the context of distance learning, carry out calendar-thematic planning and unconditionally form thematic events to strengthen the learning information (Kara & Yildirim, 2020).

In turn, students are required to some extent to organize the educational process and develop the educational literature presented by the teacher, in order to properly master the necessary knowledge and skills within the established curriculum. In addition, it should be borne in mind that, regardless of the type of instruction, students should reflect excellence and achievement in the educational process and, above all, respect the principles of academic virtue. As for parents, they must provide children with the necessary conditions for their continuous distance learning, as well as promote the development of such qualities as self-control and self-organization (Vázquez-Cano & Paz, 2021; Mnaidarova et al., 2017).

If we look directly at the main tools for online communication and distance learning, it should be noted that they are completely different and are aimed at all kinds of development of the student. First of all, you need to pay attention to videoconferences, which allow in real time online to hold discussions, organize discussions, hold training sessions, and defend presentations. They are conducted in accordance with the schedule established by the Administration at certain times. The main advantage is that students see teachers making it easier to perceive the material, in addition to this lesson can be accompanied by visual material such as a presentation. Of course, chat is an important tool, as it is based on communication between students and teachers. The advantage is that such interaction takes place in real time, that is, the subjects of the educational process can quickly exchange information or get answers to their questions. The main types of chats used are text, voice, and audio and video chat (Kovács et al., 2021).

No less common way to communicate is a blog, but it is usually used by teachers to publish training material or announcement news. It is quite convenient because it is possible to systematize the posts

described, which facilitates the independent development of the training topics. In addition, students can leave comments under warnings or ask the teacher questions about the published material. Another tool to mention is e-mail. It has been popular before because it allows users to send messages and receive feedback. In the field of education, e-mail is more a means of communication between teachers and students, as well as between students (James et al., 2020; Serdali et al., 2016b).

The organization of the educational process in higher education institutions also has a number of methodological features, in particular in the context of the division of responsibilities between the administration of the university, teachers and students. It should be noted, however, that such differences are more due to the narrow specialization of subjects, which, as a result, calls for individualization of training activities and the development of individual curricula. As for web resources, which are increasingly used during training, it should be noted that they are similar, both within schools and universities. Thus, social networks and mobile applications, such as Telegram and Viber, play an important role in the distance learning process, allowing in their black form private groups, channels, chat and, accordingly, to discuss topics, plans, problems, information (Osmanoğlu et al., 2020).

Among web resources, the Moodle platform is quite common for distance learning. It is a free and accessible structure, aimed at the organization of the training process in a remote format. Its main advantage is the ability of users to apply a wide range of tools to realize educational interaction between the teacher, student and the administration of the educational institution. Thus, the teacher can publish the educational material in several formats, namely text, presentation, video material, web page. An important component is that on the basis of this platform it is possible to test the knowledge of students, namely to carry out independent and control works (Karagöz, 2021; Crimi et al., 2021).

Google Classroom is equally common in schools and universities. Accordingly, it is combined with services such as Google Docs, Google Drive, and Gmail, allowing educational subjects to deliver training sessions using video, text, and graphics. In addition, within the framework of this service, the statement can monitor the knowledge of students, systematize their results, publish tasks and leave comments to them. The main advantage of this platform is the existence of separate groups, which belong to a certain number of users. They allow the teacher to publish teaching material or announcements for a specific study group, as well as to adjust their activities (Bergdahl & Nouri, 2021).

Probably the most popular tool for conducting training sessions in a distance format, both in Ukraine and abroad, is Zoom. To use this service, the user needs to authorize, by the way, it can be installed on both a computer and tablet or smartphone. The platform provides individual and group training. The advantage of this service is that it allows students or students not only to see the teacher, but also the material that it broadcasts. In addition, during the conference users can use text chat and choose the destination. This service provides the possibility of using an interactive whiteboard during classes, which greatly facilitates the process of perception of the material, and also helps the teacher to correctly convey the necessary information. As a rule, a conference can be scheduled in advance or set a link for regular meetings at a specific time (Alasmari, 2021).

In addition, it should be noted that video conferencing can also be organized on the basis of such programs as Microsoft Teams, Google Meet, Skype. In the case of the most interactive tool, which is mainly used in secondary education is ClassDojo. The essence of this service is to evaluate the work of the training group in real time. An important feature of this program is the ability to develop a comfortable and optimal learning environment with different rewards and levels of access (Poplavskyi, 2019). An important function of this program is that parents also authorize in it and, accordingly, can independently monitor the progress and achievements of their children, as well as the development of their social skills (Larionova et al., 2021).

As for higher education institutions, they also make extensive use of interactive programs, one of which is Classtime. This is an online service on the basis of which the teacher can independently develop interactive educational materials and applications, which in turn allow you to follow the analytics of the educational process, as well as solidify strategies of individual approach. In addition, the program can be used to monitor the knowledge of students, in particular, through testing. An important feature of the program is that the teacher can easily track the progress of each student online (Hou et al., 2021).

Thus, it can be established that a number of tools used in Ukraine for distance learning are quite large in volume and accordingly varied. As a result, the teacher has a wide choice of platforms, depending on the goals and objectives of the training session, through which he or she can effectively provide educational services to applicants for education. In addition, it should be noted that for both secondary and higher education institutions, the same principles and means are used to carry out the educational process in a distance format.

International experience deserves special attention because it is highly effective. Moreover, in most countries, such as the United States of America (hereinafter the USA), the United Kingdom and Canada, the introduction of distance learning has not caused any problems or obstacles to the educational process. This is certainly due to the fact that such a training format was very relevant there and for the spread of the COVID-19 pandemic and the imposition of quarantine restrictions, so the approaches and means of its implementation are at a high level of development (Bondar et al., 2021). Thus, in the US, distance learning is quite common, implemented for the movement of online courses. Their topics are completely different, and the main thing is that most of them are in open access and can be used even by pupils or students from Ukraine. At the same time, there are also private platforms, belonging to specific educational notes, where educational information is placed exclusively for the applicants of the institution.

As for the United Kingdom, distance learning is also extremely common and developed. This is evidenced by the results of students after mastering the curricula in such a format. Accordingly, the most common tool for distance learning is a forum where teachers publish not only the training material, but also additional information or other sources. This approach ensures that proper communication is established between the teacher and the pupils, since the latter can not only review and study the material provided, but also ask questions or comment on the teacher's reports. As a result, educational applicants develop both educational skills and abilities and much-needed qualities such as self-control, self-organization and self-testing.

In Canada, approaches differ somewhat, as they require mandatory video communication between the teacher and the applicant. This makes it possible to monitor their successes qualitatively, as well as to establish interaction between the subjects of the educational process. Based on this, it can be established that Ukrainian educational institutions have chosen effective tools for the implementation of the educational process in a remote format. It should be noted, however, that in order to achieve the most effective and successful results from such training activities, it is necessary to systematically analyze possible means for improving the educational system.

CONCLUSIONS

The study revealed that distance learning in Ukrainian educational institutions is based on the use of modern and effective tools. Accordingly, the article has disclosed the concept of distance learning, namely as an educational process, which is realized through the use of computer technologies and innovative programs, as well as occurs outside the school. In addition, the theoretical part of the work revealed the main properties and advantages of such a format of training. These should include: economy, flexibility, ergonomics, informational content, communication, efficiency. The advantages of such an approach to the training process were found to outweigh its disadvantages.

The article also considered the organizational bases of distance learning both in secondary and higher education institutions. In this way, the main responsibilities of students, teachers and school authorities were discussed. In addition, an important part of the work focused on the analysis of current and relevant tools that are actively used for conducting training sessions, as well as monitoring the level of students' knowledge. On this basis, it must be established that a number of such tools are extremely large and diverse, including: text chat rooms, forums, web platforms, online courses, videoconferencing, e-mail. All of them have a special purpose, and as a result of their systematic use, ensure the unity and continuity of the educational process, even in a remote format.

The analysis of international experience, including such countries as the United States, the United Kingdom and Canada, took an important place in the work. Considering the means and approaches to

distance learning in these countries, it can be argued that they correspond to some extent to the Ukrainian ones. Thus, it shows that the effectiveness of the mechanisms selected by Ukrainian educational institutions for the implementation of distance learning is at a high level. On this basis, it should be established that in future scientific developments on this topic it is necessary to analyze the prospects and features of the use of artificial intelligence in the distance education process.

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