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Distance Learning as an Integrative Response to Contemporary Challenges

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Abstract: The COVID-19 pandemic has raised the issue of using distance learning as a separate independent model of organizing the educational process. The purpose of the article is to analyze distance learning as a form of organizing the educational process, which is dynamically developing in response to global challenges, from the point of view of an integral approach. Accordingly, the object of the study is modern forms of distance learning as a way of organizing the educational process. To achieve this goal, an analytical research approach was used that allows correlating and identifying effective solutions taking into account the unique features of the educational system: content analysis (32 items of scientific literature were analyzed), prognostic, systemic, structural methods, as well as methods of specification and abstraction. The empirical data for the study were obtained by using a survey method, which involved 100 higher education students. Its main goal was to determine the readiness of students to perceive distance learning not only as a response to the challenges of quarantine restrictions but also as a separate form of educational activity. The results showed that despite the efforts of teachers and the use of modern digital technologies, students had to study a lot of new educational materials on their own. The transition to distance learning has led to an increase in the importance of homework and independent work compared to traditional forms of educational activities. The majority of respondents noted that despite the increase in the share of online tests and other control activities, the average academic performance has not decreased. It was found that the number of students who improved their performance did not differ from those who used traditional forms of education. As a result, many higher education students expressed the opinion that studying remotely was generally easy, despite all the obstacles. Such a positive assessment allows us to interpret distance learning as a promising and independent vector for the development of future education. The conclusions emphasize that a condition for the further development of distance education is the development of digital technologies that form the basis of the technical implementation of distance learning. We believe that distance learning should be perceived as a separate branch of the educational system. The practical significance of the study lies in proving the functioning of distance education as an original form of organization of the educational process.

Keywords: distance education, digitalization, COVID-19, form of education, information, and communication technologies.

Introduction

The quarantine restrictions have had a significant impact on the education sector. Researchers have concluded that the pandemic has had a negative impact on educational systems, including research, academic programs, professional development of staff and jobs in the academic sector, etc. These changes have been felt not only by universities as separate entities, but also by teachers, students, and their parents. As a result of the lockdowns, campuses were closed for education, administrations of higher education institutions abandoned traditional forms of organizing the educational process, and any mass events were canceled due to the threat of the spread of COVID-19. An additional impetus to distance learning was given by digitalization, which has covered all areas of public life, including the means of information transmission, the latest gadgets, and teaching methods.

An alternative form of education was the introduction of distance education, an accessible learning system for the duration of the global disease. This step was perceived as a temporary measure aimed at realizing the possibility of continuing education even in difficult times of quarantine. In the realities of certain countries (primarily Ukraine), distance learning has become an important element of

responding to the challenges of martial law and open military aggression, as distance learning is much safer than staying indoors, even if equipped with bomb shelters or other protective elements.

The tangible freedom offered by distance learning is most fully manifested in the ability to freely choose courses that meet the needs and capabilities of higher education students (teachers can organize their time in the same way). Learning with the use of digital technologies also makes it possible to choose the place and forms of education that best meet current challenges. At the same time, feedback on the effectiveness of distance learning has generally demonstrated its competitiveness. Therefore, the introduction of distance learning methods, along with a partial return to traditional forms of teaching, has opened a relevant discussion about the extent to which distance learning can be a separate form of educational activity.

The problem of the impact of digital technologies on the education system has been studied by many modern scholars. In particular, Cavalcanti et al. (2021) identified the key features of e-learning based on an analysis of modern pedagogical literature. Hamzah et al. (2021) characterized modern methods of organizing digital education. The authors focused on analyzing the use of video materials in teaching. Stoika (2022) described key changes in education based on the introduction of digitalization solutions. Murphy (2022) in their study presented examples of achievements in the system of digital learning and lifelong learning, open education with the support of TEL. The paper concludes with an analysis of what the digitalization of higher education might mean after the COVID-19 period. Key aspects of digital competence development are highlighted in the study by Almås et al. (2021). At the same time, Zhang and Aslan (2021) characterized the role of artificial intelligence in the process of organizing digital learning. The problem of rethinking digital education is highlighted in Peruzzo and Allan (2022). The authors reflect on the effectiveness of digital education, its threats, and opportunities. However, digital learning in the scientific literature is often criticized for lack of student engagement (Aldhafeeri & Alotaibi, 2022; Dhawan, 2020; Laufer et al., 2021; Özmen & Kan, 2022). This is due to the physical absence of teachers and the lack of direct communication with students (Laufer et al., 2021). Critics of digital education also believe that this lack of student engagement is a key factor in the inability of this educational model to positively affect all aspects of the educational process (Aldhafeeri & Alotaibi, 2022). Thus, in a number of studies by Dhawan (2020) and Laufer et al. (2021), digital education is investigated as a kind of temporary mechanism, rather than a total replacement for traditional learning due to the shortcomings that can cause problems with learning and the acquisition of important competencies in students. To test the validity of these beliefs, an experimental study was conducted with 100 students.

Research Problem

According to preliminary calculations, the academic community has established a view of the total number of students covered by distance learning. In particular, before the pandemic, there were only about 6.6 million such higher education students worldwide, while after 2019, this figure rose sharply to 400 million students, which is clearly due to quarantine restrictions (Peruzzo & Allan, 2022). In such circumstances, distance learning can be perceived as a certain norm in the organization of the educational process. However, the future of this area remains problematic, as quarantine restrictions will not last forever, and modern medical development gives grounds for completely overcoming the negative manifestations of COVID-19 (reducing the danger to the level of seasonal flu outbreaks).

The partial return to traditional forms of teaching has demonstrated little enthusiasm among both teachers and students (Williams et al., 2023). This fact alone indicates a lack of popularity of distance

learning. That is, there is a negative perception of it that still needs to be further thought out. Therefore, the advantages and disadvantages of this form of organizing the educational process will affect the future of distance learning as a separate or auxiliary link in the transfer of educational information and the acquisition of the necessary professional skills.

Research Focus

The study focuses on highlighting the prospects for distance learning in the future. First of all, it is about the possibilities of applying this type of knowledge acquisition and pedagogical work in the future, beyond the quarantine realities of the global COVID-19 challenge. First of all, the study has a theoretical basis and aims to highlight the theoretical paradigms of the functioning of the modern educational system in higher education institutions.

Research Aim and Research Questions

The purpose of the article is to analyze distance learning as a form of organizing the educational process that is dynamically developing as a result of responding to global challenges from the perspective of an integral approach.

Research Methodology

General Background

This study applies an analytical research approach that allows correlating and identifying effective solutions taking into account the unique features of the educational system, based on the positive aspects of using distance learning. The research arsenal also includes general scientific methods, such as content analysis, prognostic, systemic, structural methods, as well as methods of specification and abstraction. The study was conducted using a qualitative research approach, which allows us to study the best practices of using distance learning methods in Ukraine. To model optimization solutions, a retrospective and structural analysis of existing regulations in the field of education was conducted.

The research focuses on the problems of the possibility of using distance learning as an independent vector of development of the education sector in general, in particular, based on the collected material in Ukraine, analysis of the existing distance learning system, the main difficulties and challenges that may hinder the open future of this industry.

The empirical part of the study is presented in the form of a survey conducted among higher education students in Ukraine. Based on the material obtained, the effectiveness/ineffectiveness of distance learning, the possibility of using it separately from other means of education (primarily in isolation from traditional or mixed forms of education) were determined.

Sample / Participants / Group

The participants of the experiment were 100 higher education students. Candidates were selected on the basis of anonymity, impartiality, and voluntariness (the respondents' willingness to cooperate and answer the questions honestly).

Instrument and Procedures

The platform for the survey was the Google survey system, which provided remote access to the organization of the experiment, made it possible to attract a wide audience, and guaranteed anonymity

and security for all participants in the research procedure. Information about the survey was disseminated through social media: Facebook, Instagram, and special messengers: Telegram, Viber. This made it possible to reach students from different educational institutions of Ukraine without being geographically tied to a specific region.

The event resulted in 100 completed questionnaires. In accordance with the approved classifications of the chosen research method, it can be determined that the survey was conducted:

- the project was a complete success, as it involved all interested higher education students;

- direct, as all survey participants filled out the questionnaires independently;

- correspondence, because the participants were not present in person when filling out the questionnaires but provided information remotely via the Internet.

This questionnaire consists of open and closed questions. Closed questions ask you to select one (or more) of the answers provided, while open questions allow for free expression of opinion.

Provide answers based on your own experience

1.How do you feel about the organization of distance learning?

2.Are you satisfied with the way teachers organize distance learning?

3.How often do teachers use digital technologies to teach classes?

4.How actively did you use independent work?

Select one or more of the following answers

5.How did you process new information during distance learning?

A) Independently, using textbooks and scientific literature

B) Listening to lectures and attending practical classes in a remote format

C) Other answer

6.How would you estimate the amount of educational material you have studied during distance learning (compared to traditional learning)?

A) There were more materials for independent study, and therefore more homework.

B) There were fewer materials

C) The amount of training material has not changed

7.How often did you use performance monitoring methods?

A) Constantly completed tests, independent or control work

B) There were almost no assignments of the control and independent type

C) Such methods were not used at all

8.How do you evaluate your results during distance learning?

A) Improved

B) Worsened

C) Not changed

The materials and statistical data obtained from the survey were processed using analysis, synthesis, and other specified research methods. This made it possible to get an indicative picture of the effectiveness of distance learning, and thus to determine how effective it is as a separate category of educational process organization.

Data Analysis

After conducting a survey among higher education students, the following results were obtained:

1.49% of students said that during distance learning they independently mastered new material from textbooks and additional scientific literature; 45% got acquainted with new material remotely, in particular during lectures or practical classes, using Internet platforms Zoom, GoogleMeet, and others; 80% reported that their teachers regularly used digital technologies to conduct online classes;

2.54% of higher education students reported that during distance learning they were given more material for self-study and homework than usual; 32% of respondents received the same amount as during traditional forms of education, and 9% received less than usual. Another 5% of respondents were undecided;

3.58% of higher education students said that while studying online, they had to constantly complete tests, independent and control works; 36% reported that there were few such works, and 6% of students said that they did not perform such tasks at all;

4.26% of respondents admitted that their grades had improved during distance learning; 62% of respondents had no change in their grades, and 12% of respondents had a clear decline in their grades;

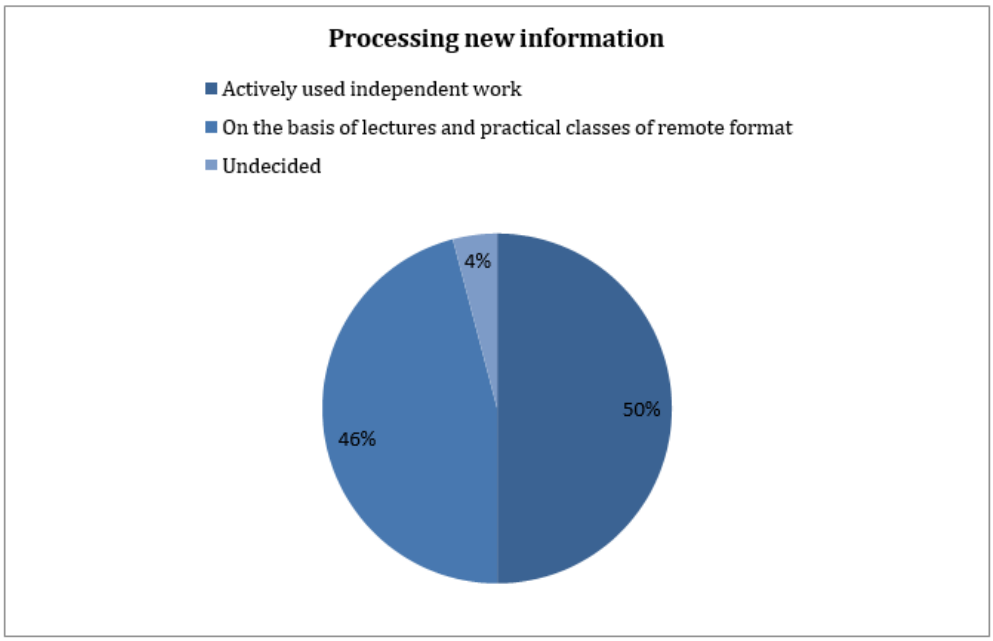
5.The use of distance learning is approved by 71% of the surveyed higher education students; 15% said they were uncomfortable working online, and 14% said they did not see the difference between traditional and distance learning. The study allowed us to demonstrate the attitude of students to the distance learning model as a separate element that can be used separately from other traditional forms of education.

Research Results

The analysis of the data revealed that despite the efforts of teachers and the use of modern digital technologies, students had to study a lot of new educational materials on their own (see Figure 1).

Figure 1

Analysis of the Peculiarities of Processing New Information

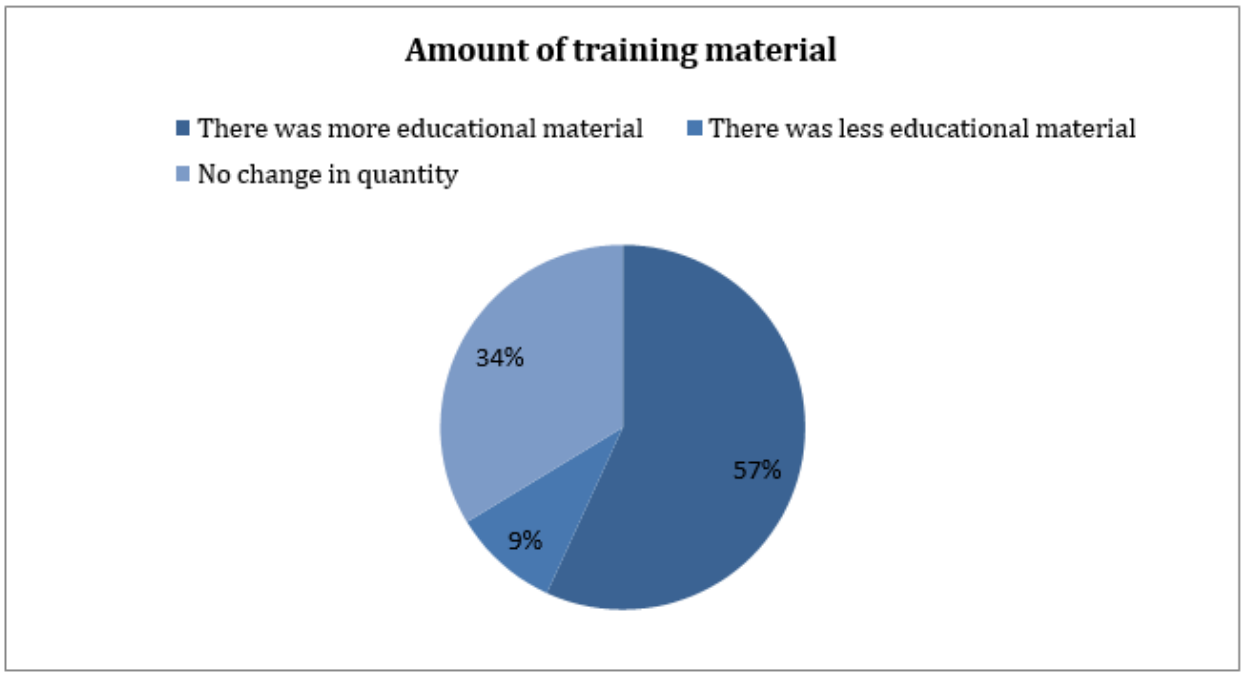


Source: authors' development.

The use of distance learning has led to an increase in the importance of homework and independent work compared to traditional forms of education (see Figure 2).

Figure 2

Assessment of the Amount of Educational Material (Compared to the Traditional Form of Education)

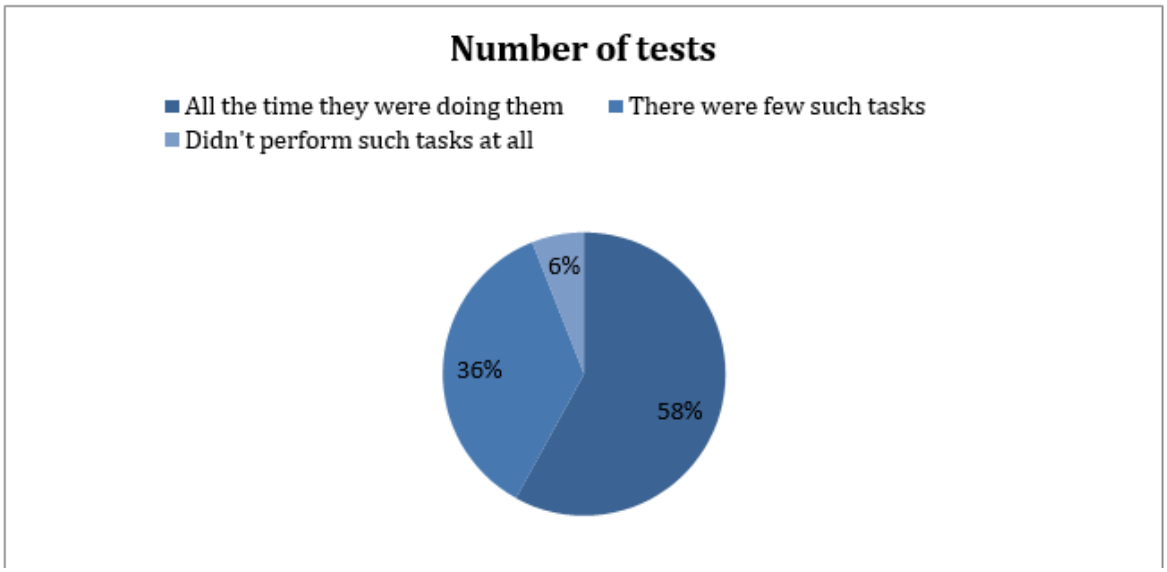


Source: authors' development.

Many respondents also noted that the share of online tests and other control activities has increased significantly. In particular, the majority of higher education students said that they had to constantly complete tests, independent or control works during their online studies (see Figure 3).

Figure 3

Estimation of the Number of Tests

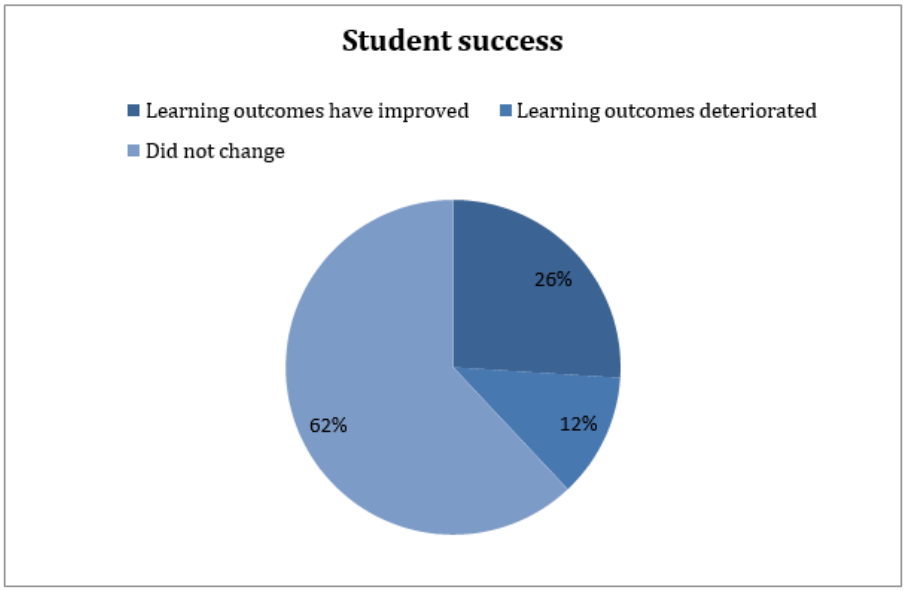


Source: authors' development.

However, even with this factor taken into account, the average academic performance did not decrease, and the number of students with increased academic performance was not inferior to the number of students using traditional forms of education (see Figure 4).

Figure 4

Analysis of Student Performance (Compared to the Traditional Form of Education)

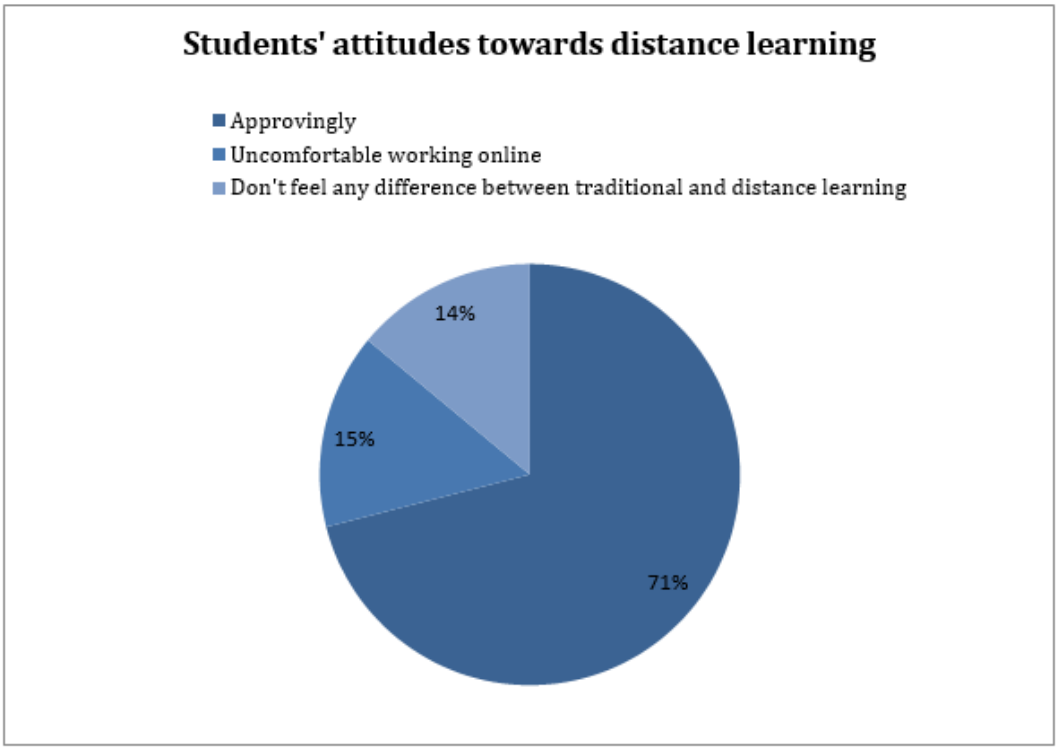


Source: authors' development.

As a result, a large number of higher education students said that studying remotely was generally easy, despite all the obstacles. As a result, most students expressed a favorable attitude towards distance learning (see Figure 4). In addition, most respondents said they were satisfied with the organization of distance learning.

Figure 5

Students' Attitudes Towards Distance Learning



Source: authors' development.

In general, the results of this study are in line with other studies conducted by researchers from different countries (Parsons et al., 2022). For example, Rajab (2018) demonstrated that there is no significant difference in student performance depending on the mode of study (full-time or distance learning). Although his study is unique in that it presents a new context (Saudi Arabia) and is broad in scope (including all courses offered by a large computer science department), his results support previous findings that the delivery method has minimal impact on course performance and grades. The author notes that it is difficult to generalize these findings to all Saudi universities, departments, or higher education institutions in the Middle East. Nevertheless, these findings should convince opponents of e- learning by demonstrating that it produces the same, if not better, results than traditional face-to-face learning (Özmen & Kan, 2022). Even the main problems are common: the threat of isolation, lack of socializing connections, and the need to manage the time that needs to be devoted to the independent part of the task. To these negative effects, researchers also add the danger of prolonged exposure to the monitor, and a possible lack of practical skills, especially in sensitive areas of knowledge (e.g., medicine) (Franco & DeLuca, 2019). In addition, conducting synchronous and asynchronous classes requires self- control and high motivation, which does not always correspond to the reality in which students work.

Researchers also note an important factor of distance learning - the need for self-organization, concentrated work of participants in the learning process in the digital environment (Dhawan, 2020). To develop curricula, teachers create samples of the main and most relevant elements. It has been proven that the effectiveness of using distance learning increases when this process is optimized (Conte et al., 2019). In particular, we are talking about the possibility of forming individual educational trajectories for all participants.

This will significantly increase the competitiveness of future specialists in the labor market by developing additional competencies, including in the case of continuing education. Lifelong learning is also highly effective in the distance form, as it saves time and significantly expands the choice of courses or disciplines (Aldhafeeri & Alotaibi, 2022). Accordingly, the effectiveness of obtaining and assimilating knowledge by higher education students will only increase. As an example, the researchers cite statistical indicators of distance learning of foreign languages using the Duolingo Internet platform. According to registered users from October 2019 to October 2020 (i.e., one calendar year after the announcement of quarantine restrictions related to the COVID-19 pandemic), the number of students taking courses on the platform increased by more than 30 million people. In percentage terms, this growth can be defined as more than 60% (Şova & Popa, 2020). Therefore, under the lockdown, students turned to distance education as a separate element of knowledge formation.

The proposed materials lead to preliminary conclusions that distance education is a separate type of educational process organization, primarily related to the use of modern digital technologies. Its use demonstrates that students receive an appropriate level of training that is comparable to that of traditional education. Many students point out the advantages of online learning. Although it also has some difficulties in use, for some time it was almost the only way to organize university work. This makes it possible to argue that the use of distance learning is promising in the future. At the same time, the COVID-19 pandemic has actualized its implementation, making it a non-alternative for some time (Stoika, 2022). However, in practice, it is known that until 2019, distance learning was actively developing in European universities, although it was less common in practice. Therefore, it is possible to assert the prospects of its use as a separate form of organization of the educational process, which, along with the traditional form of education, will exist in the future of higher education.

Discussion

According to Laufer et al. (2021), distance learning is based on the use of information and digital technologies that allow teachers to deliver learning material to students and provide feedback. It is carried out on specialized educational platforms in real-time (or asynchronously) and requires more concentration from participants, as there is less time for studying (Wedari et al., 2022). Therefore, it is important to conduct an entrance knowledge test to determine the basic level of higher education students and ensure effective teaching methods. According to Yoleri and Nur Anadolu (2022), students need skills in navigating the information space and the ability to express themselves clearly. According to Dhawan (2020) and Kuzminska et al. (2019), pedagogical methods and techniques can vary depending on the means of communication, such as self-study, individual learning, collective learning through forums, discussion groups, debates, and conferences. Distance learning requires participants to concentrate and self-organize in the digital space (Aldhafeeri & Alotaibi, 2022). At the same time, teachers can choose the main and most important elements of the material for the curriculum.

In addition, the global impact of online learning during the COVID-19 outbreak is clear. Due to social distancing measures and quarantine, almost all global activities have been suspended, especially

in the education sector. Education is an important foundation for building a strong society. Consequently, technology has played a crucial role in facilitating the sudden shift to online learning, providing solutions for students who cannot access traditional learning in the current situation (Hamzah et al., 2021). Many researchers have studied the impact of this dramatic change, discussed the role of online learning during the COVID-19 crisis, identified its benefits and challenges, and tried to identify gaps in virtual learning systems (Hamzah et al., 2021; Parsons et al., 2022; Peruzzo & Allan, 2022; Williams et al., 2023).

Despite the many effective tools that virtual classes offer, it is still difficult to compare their effectiveness with traditional classrooms, such as those in medicine, chemistry, or biology, which require direct interaction. Traditionally, the evaluation of learning outcomes has been based on three main components: the organization of learning, publications/research, and services. However, despite the appeal of distance learning, the evaluation system for this educational tool has not received much feedback.

It may be worthwhile to agree with researchers' hypotheses that digital-enabled distance learning can offer equivalent or better-quality education compared to traditional settings without requiring significant resources for implementation and support (Aldhafeeri & Alotaibi, 2022; Pinheiro & Santos, 2022; Rajab, 2018). These findings may contribute to the wider adoption and diffusion of e-learning initiatives. In addition, the potential of information and communication technologies to overcome the challenges posed by conflicts or natural disasters and to provide distance education opportunities for higher education institutions is important. Digital learning technologies have generally proved to be successful methods of delivering classes, which underscores the power of e-learning to fulfill the educational mission of higher education institutions even under the adverse circumstances of a pandemic or open hostilities.

Conclusions and Implications

Thus, the COVID-19 pandemic led to a lockdown and the transfer of the educational process to a remote mode. Distance learning, as a separate type of educational process, had been developing until 2019, but it was during the quarantine restrictions that it began to dominate the educational environment. Accordingly, at the global level, the question arose as to whether it is advisable to consider this area as a separate model that can be used independently of traditional technologies. Based on the study, it was found that distance learning is generally perceived positively among the surveyed students. It has not led to a drop in academic performance, although it requires a special attitude to independent work and self-motivation. Accordingly, such positive practice and perception allow us to interpret distance learning as a promising and independent vector of future education development. These results correlate with the findings of other researchers. An important factor for further development is also the future of digital technologies, which form the basis of the technical implementation of distance learning. The actualization of their use as a result of quarantine restrictions has pointed to promising areas for further evolution. The introduction of technological innovations will draw attention to distance learning in a new way, regardless of how well the negative effects of the global pandemic are overcome. Thus, the use of distance learning has crystallized as a response to the challenge of our time, but COVID-19 has only accelerated this vector of development. Today, distance learning can be perceived as a separate branch of the educational system, the process of further development of which will have distinctive features.

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