

DOI: <https://doi.org/10.57125/FED/2022.10.11.30>

How to cite: Sherman, M., Puhovskiy, E., Kambalova, Y., & Kdyrova, I. (2022). The future of distance education in war or the education of the future (the Ukrainian case study). *Futurity Education*, 2(3), 15-24.
<https://doi.org/10.57125/FED/2022.10.11.30>

The Future of Distance Education in War or the Education of the Future (The Ukrainian Case Study)

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Received: June 4, 2022 | **Accepted:** July 15, 2022 | **Published:** September 25, 2022.

Abstract: The purpose of the publication is to analyze the future of distance education and determine whether the appeal to it is temporary, or whether it is mandatory and motivated. The

following methods were used for writing: analysis, synthesis, induction, and deduction. Based on the comparative method, the principles of using digital platforms in Ukraine and the USA, Ukraine and France, etc. are compared, since the experience of using such a system in these countries confirms the effectiveness of modern distance education. In the results, a number of problems were analyzed, in particular, the general importance of distance education for the educational process was highlighted, the importance of asynchronous learning was demonstrated, the experience of using online platforms was analyzed, and certain recommendations were formed for the development of distance education against the background of military aggression. The conclusions summarize that distance education in Ukraine under the conditions of a full-scale Russian invasion is aimed at the following categories of students: persons who are forced to temporarily live in other regions of Ukraine, persons living in the occupied territories, or outside the borders of Ukraine.

Keywords: distance education, future, Russian-Ukrainian war, prospects.

Introduction

The widespread introduction of distance education has been the subject of much discussion since the beginning of the COVID-19 pandemic when educational institutions in many countries began to operate via the Web. The progressiveness of this way of conducting classes has not yet been determined, which makes this issue very relevant for research. It is especially important for the Ukrainian educational context, where the spread of the global disease was combined with the beginning of a large-scale Russian invasion in 2022. The consequences of active military actions for the development of educational technology is not fully clarified, if only because the European countries in the XXI century did not face such threatening challenges.

Since at present distance learning based on information and communication technologies is used at all levels of the educational process, it affects the emergence of a variety of pedagogical research on the conditions for the use of distance education. For example, Demiray (2017) analyzed the specifics of the use of online distance platforms in modern education. He believes that the circulation of other digital technologies in the modern day is a noticeable “tsunami” that has transformed industry of education. Kem (2022) described the main popular personal and adaptive digital platforms used in international distance education systems. At the same time, Ungerer (2019) described the role of e-learning for today's youth and the key advantages and disadvantages of using distance learning in universities. The author characterized the significance of the COVID-19 pandemic for higher education. He focused especially on the analysis of new information and communication technologies. At the same time, the author investigated the problem of the effectiveness of distance learning in the context of the pandemic. At the same time, Ayoub et al. (2020) investigated the key advantages and capabilities of Coursera, a global platform for distance learning. On the other hand, Lopes & Soares (2022), through the prism of multimedia, characterized the features of online learning applications, characterized the main information mechanisms used in E- learning. Despite this, they note that distance education contributes to the emergence of a variety of educational innovations. Valuable to this study is the work of authors who have characterized the problem of using distance learning in war. In particular, Rajab (2018) explored the characteristics and conditions of online learning use in the Saudi Arabian military realities. At the same time, Kretzmer and Ronen (2021) investigated the state of education in the occupation territories through legal aspects. Gordon (2022) characterized the problems of university education in the context of the war in Israel.

Research Problem

The study of distance education based on the experience of a country in a state of open war has not been explored in contemporary European and American pedagogical opinion. Since there were no such precedents in the XXI century (Ghasemy et al., 2021). For this reason, the search for answers to the challenges of distance learning in Ukrainian reality may become a certain matrix for solving similar situations in other states. Thus, such an analysis is an important research problem, which so far has not had synthetic solutions.

Research Focus

The main attention of the authors of the article is turned to the complex problem of distance education functioning in Ukraine from 2019 (the beginning of the Covid-19 pandemic) to the decisions made already during the Russian-Ukrainian war in 2022. This work will be useful to theorists and practitioners of pedagogical science, who, based on the results of this study, will be able to obtain material for the discussion about the future of distance education in general.

Research Aim and Research Questions

Professional literature offers an overview of several aspects of the broad problem, but there are no synthetic studies summarizing the projected effects of the war on the development of educational processes. Therefore, the purpose of the article is to analyze the productivity of distance education under conditions of war based on the Ukrainian experience. The paper investigates the following issues: the importance of distance education for the educational process, the importance of asynchronous learning, the analysis of educational platforms in online education under conditions of war, the specifics of the use of distance education in Ukraine, the formation of recommendations for further development of distance education based on the study of the situation in Ukraine.

Research Methodology

The work is built on the use of general scientific logical research methods. Among them, we will distinguish analysis, synthesis, induction, and deduction. Based on the analysis managed to divide the main subjects of research (the future of distance education) into smaller parts (characterization of the phenomenon of distance education, research advantages and disadvantages of this type of learning, predicting the future position of online education in Ukraine). By means of synthesis, it was possible to combine the previously highlighted parts and form their own judgments and conclusions. Based on the application of a systematic method of research, the phenomenon of distance education is considered as a complex system consisting of many elements. Special pedagogical methods were also used in the present study. From theoretical pedagogical methods, abstraction and concretization were used. Based on the comparative method the principles of application of digital platforms in Ukraine and the United States were compared, as the authorities of these states provided official empirical materials confirming the effectiveness of modern distance education. Based on the comparative method the problem of the use of online education in Ukraine, the USA, and France is compared. In addition, the article applies the axiomatic method of research. It implies a transition from general theoretical considerations (general characteristics of the distance education phenomenon) to the formation of specific recommendations and conclusions. Based on the prognostic method further, probable use of distance education in Ukraine is reflected. Also, the article is formed on the application of the statistical method, which consisted in a thorough analysis of data (official documents of the U.S. Department of Education, Ministry of Education

and Science of Ukraine). Consequently, the conclusions in the work are based on reliable empirical materials of official nature. Note that the article is built on the use of methodological principles of consistency, scientificity, and objectivity.

Separately, we should mention the method of SWOT-analysis, which has been used since the 1970s for a multifaceted analysis of entrepreneurial activity and the formation of estimates of the state of the enterprise and future threats. This method has not lost its relevance to this day. Its essence - identifying the strengths and weaknesses of projects, the calculation of risks, and future development based on the use of comprehensive analysis. The versatility of this method does not require complex calculations - you only need to adequately and clearly assess the external and internal impact factors.

Research Results

Distance learning is an educational process that provides the possibility of educational interaction between a teacher and a student at a distance. At the same time, there is an application of modern information and communication technologies and opportunities. Distance education includes three main aspects: 1) the possibility of learning regardless of geographic location; 2) determining the pace of learning; 3) the ability to set your own curriculum. At the same time, the need to analyze the possible advantages and disadvantages of distance education became urgent in the era of the COVID-19 pandemic (Lopes & Soares, 2022). This process manifested itself in a continuous transition to synchronous (in particular, Zoom, Skype, Microsoft Teams, Google Meet) or asynchronous platforms (LMS).

At the same time the introduction of online technologies in the educational process promotes the use of such activities in the educational process as the organization of various video conferencing, viewing lectures or practical classes both live and in recordings, working on discussions in forums, activities with shared documents (talking about Google Docs, Google Slides), organization and conducting various online queries and voting (based on Google Forms platforms), the ability to conduct autonomous testing, viewing various training videos. Note that modern information and communication technologies facilitate the use of various private activities in the online form, in particular, to organize collaborative activities, as well as to use project approaches. Not all teachers and professors are ready to transform into work on themselves and their programs, but this way looks very promising. For example, in order to divide students into mini-groups, it is convenient to use the session room function in the Zoom app (Pinheiro & Santos, 2022). To organize online learning, it is necessary to use an appropriate learning management system (Lopes & Soares, 2022). For example, the Lviv National University has implemented this on the Moodle platform. In comparison, the University of Pennsylvania uses the Canvas platform. Another popular space in the U.S. is Blackboard. These platforms are convenient and functional. Here you can conduct a variety of controls for students in the form of tests, descriptive questions, or interviews. On the Moodle platform, teachers can also display their lecture or seminar materials for all students. Note that the Moodle platform used at Lviv National University is personality-oriented, where each student can review his or her own score and use individually the materials provided by the instructor. At the same time on the Canvas platform teachers can also publish materials, update them systematically, organize quizzes, hold discussion forums, etc. (Torres et al., 2021). The distance learning process is built on the use of various information and communication technologies. Upon completion of such training, students and pupils receive appropriate certificates. Despite this, there are different models of distance learning in Ukraine (presented in Table 1.)

Table 1

Distance learning models in Ukraine

1. Training with the use of multimedia programs
2. Based on autonomous learning systems
3. Cooperation of different educational institutions
4. Distance learning in the university
5. Distance learning in autonomous educational institutions
6. Based on independent learning of the studied material

Source: Adopted from Ministry of Education and Science of Ukraine (n.d.).

Distance education in Ukraine is focused on several categories of students. First of all, we are talking about children affected by war and forced to temporarily reside in other regions of Ukraine or outside the state. Also, distance education may also be oriented toward students who live in hard-to-reach or geographically distant places from educational institutions (Kuzio, 2021). Children living in the occupied territories (in particular, in Crimea or some territories of the Donetsk and Luhansk regions) can also study in distance education institutions (Ministry of Education and Science of Ukraine, n.d.).

It should be noted that in the development of Ukrainian distance education an important place was given to asynchronous learning. This type of educational activity is implemented through the use of online channels (e-mail correspondence, classes on television, special educational platforms using web-technologies), but without direct contact at the teacher-student level. Asynchronous learning does not involve real-time communication but is based on the individual pace of processing learning materials (Ayoub et al., 2020). The experience of France has become important for European countries. In this country, there is a special National Center for Distance Education (abbreviated – CNED), whose specialists organized the work of a special learning platform “My Class at Home” (Ma Classe à la Maison), the basis of which consists of several components. First, students are invited to receive assignments in a learning module called “Terminal”. It contains all the curriculums on which the educational process takes place, and students can visit it several times a day, individually checking in on a special questionnaire every day. The next part of “My Home Classroom” is represented by a synchronous “virtual classroom” in which the teacher conducts classes for students via videoconference. Each day, students are offered a class of 3-4 hours in various subjects that can be attended. Undoubtedly, the practices of synchronous and asynchronous studios are different, but these forms of learning depend on each other and contribute to the diversity of the distance learning process (Cherng et al., 2019). It is about information and communication technologies that allow students and teachers to communicate, work on problem-solving, monitor attendance, and conduct assessments.

The Ukrainian experience of asynchronous distance education is more modest, at least it does not have a long tradition of use. The COVID-19 pandemic entailed a transition to partial homeschooling, where asynchronous education methods were needed. Several trends have been negatively impacted: lack of digitalization of high schools, lack of internet access in remote locations (Rajab, 2018). The lack of experience with asynchronous learning has led to some chaos for learning organizations. Due to the

poor quality of the Network in some areas of Ukraine, it was decided to conduct classes on television. This pioneering decision for Ukraine was faced with inconsistency in the work of TV channels - almost every Ukrainian TV channel wanted to join the initiative, and different lessons were broadcast in parallel, making it impossible to study all subjects. Later, a certain order was established, and each TV channel broadcasted lessons for a certain age group of students. To popularize the project, celebrities, and capable teachers were invited. True, it did not do without criticism.

Based on the processing of proposals, the Ministry of Education and Science of Ukraine created a separate platform, the Ukrainian School Online. Its functionality is similar to the French samples. Students are offered a choice of video lectures by leading teachers of Ukraine. The lesson materials correspond to the curriculum, and registration opens up the possibility of processing tasks based on the information contained in the textbooks and short video lectures. This significantly increases the coverage of students, because the lessons and assignments can take place at any time. An important aspect, however, remains parental control, because, in the context of distance education in the Ukrainian realities, it is them who have the additional responsibility to control the educational process (Lash et al., 2022).

Applicants for higher education under martial law have also switched to distance learning. Even since COVID-19, classes at Ukrainian universities have taken place predominantly through distance learning. In particular, to control knowledge, as already noted, the platform Moodle was used, which also developed e-learning courses, which, combined with a video lectern, created a favorable atmosphere for learning. A wide range of Ukrainian educational portals and platforms offering additional courses that would be useful for self-development and development of one's professional skills were also available for future specialists. For example, Prometheus offers a considerable set of online courses, partial access to which is free. Thanks to the active use of this platform, personal development and learning on an individual trajectory is possible, which is valued by modern stakeholders (Kem, 2022). Undoubtedly, the basic functionality of this site is not free, but in today's environment, it offers truly relevant courses of one's own choosing. If necessary, you can use materials from other platforms (Pinheiro & Santos, 2022). This, by the way, significantly distinguishes distance education opportunities for adults from distance education for school-aged children: the choice of educational material for student use is much wider than for school-aged children. This trend is expressive today and will require some resolution in the future.

The development of distance learning also contributed to the use of the project method. This method of teaching appeared in the U.S. in the twentieth century, but in Ukraine began to be used actually only after the collapse of the USSR. Free elaboration of the chosen subjects, fulfillment of the corresponding tasks form the necessary skills and competencies which will be necessary for continuing work experience as well as for mastering another specialty. The effectiveness of this method has been proven by Ukrainian researchers at least since the quarantine and pandemic COVID-19. It was found, in particular, that its effectiveness remained at the same high level as in the conditions of traditional training (Ayoub et al., 2020; Figol et al., 2021). However, for its wide application, there is a need for self-discipline, organization, and teacher control (Ungerer, 2019). Active application of the project method in Ukraine under wartime conditions looks like a promising way to teach higher education applicants in the near future (Paleczek et al., 2022 ; Peruzzo et al., 2022). Note that during the active phase of hostilities, under conditions of Russian aggression, the asynchronous form of training becomes an important element for conducting and organizing training activities. In the border regions of Ukraine adjacent to the theater of military operations, it is impossible to organize the usual learning process -

the risk of artillery and rocket fire from the Russian army is too high. Therefore, distance learning methods are more reliable, which, in particular, will make it possible to “return” to education those children who, due to various circumstances, have become displaced persons and reside in other regions of Ukraine. Asynchronous learning will also be useful but will require improvement. The use of the All-Ukrainian online school, Prometheus system, etc. looks promising in the field of regulation of educational processes (Ministry of Education and Science of Ukraine, n.d.). Thanks to these and other platforms, pupils and students will have access to educational materials, which will not reduce the quality of education. In particular, based on the Arab experience it was found that the decline in the quality of education using the distance learning process is not recorded. Although there is not enough data to calculate the Ukrainian statistical indicators to date, a future study of the Ukrainian experience of use will demonstrate the effectiveness or vulnerability of this technique in conditions of not just a territorial conflict or insurgency, but when regular armies clash. The possibilities of distance education in the reality of Ukraine can also be summarized in the form of SWOT-analysis (presented in Table 2)

Table 2

Opportunities for Distance Education in Ukrainian Realities based on SWOT-Analysis

Demonstrated benefits of distance education in Ukraine	Problems of using distance education in Ukraine
1. The use in combat situations of the experience of distance learning acquired during the “domination” of the COVID-19 pandemic.	1. Difficulties with Internet access in some regions of the country, in particular in frontline and occupied territories.
2. A broad toolkit of training practices that is as good as traditional training methods.	2. Difficulties with control over the performance of tasks (despite all the possibilities of current control and parental control) (Derounian, 2017).
3. Availability of digital learning platforms with generated content	3. Unwillingness of some teachers to improve themselves and develop methods of work in the online environment.
4. Safe reasoning, avoiding the accumulation of large numbers of children in one place vulnerable to artillery or rocket fire by Russians.	

Source: Formed based on the author's analysis.

Consequently, distance education in Ukraine has its disadvantages and advantages, which are more indicative of its high potential and further development. We believe that as a result of reforming some aspects of the educational process, distance education will receive more attention in the future.

Discussion

The use of distance education in the face of unfolding military aggression by the Russian Federation seems to be the only correct solution. Russian strikes against civilian sites in eastern and southern Ukraine using tactical aircraft and missile systems make traditional education almost

impossible (Aladekomo, 2022; Çebi et al., 2022). The destruction and complete occupation of about 200 educational institutions (schools) and partial damage to about 2,000 more educational institutions have been confirmed (Ghilès, 2022). At the same time, at the official level, the Ukrainian government is discussing the possibility of conducting classes as usual. This step is justified by the importance and effectiveness of traditional education, as well as by the norms of the security situation - a school bomb shelter would be better for children who are in a dangerous city than sitting out shelling at home. At the same time, the final decisions on the possibility of restoring ordinaries will be made by local authorities and parents (it is said whether they will let children leave home). In practice, under the threat of shelling, the use of distance technology is much more effective.

Representatives of the Ukrainian authorities argue that the resumption of instruction is only possible if all safety rules are observed and if there is a system of bomb shelters at the educational institution that can accommodate and protect all who study in the institution. In addition, it is only envisioned that traditional education will take place once hostilities have been settled or ceased, so it is not yet known what kind of education will be offered in the new school year. All these precautions in their own way testify in favor of the fact that distance education in the future in Ukraine will occupy the main place among the methods of organizing the educational process. Obviously, under conditions of open military aggression and the continuation of military operations, it will be the only option for continuing education. The only exceptions are the rather "peaceful" regions of Ukraine. In particular, the western regions sustained incomparably less physical damage - only as a result of pinpoint rocket attacks. However, remembering the tragedy in Vinnytsia, when Russian missiles destroyed an office center with peaceful people, the risk factor should always be taken into account during the training

At the same time, thanks to its versatility and the possibilities developed as a result of the COVID-19 pandemic and the worldwide "quarantine", distance education is not inferior to full-time education. Representatives of the Ukrainian public appreciated the advantages and disadvantages of the distance system, so its use in the future seems to be a progressive step.

Conclusions and Implications

So, the large-scale use of distance education technologies began with the spread of the Covid-19 pandemic. At the same time, after the full-scale Russian invasion in February 2022, there was an urgent problem of resuming online education in Ukraine. Distance education in Ukraine in the conditions of military operations is focused on several categories of students. First of all, we are talking about children forced to temporarily reside in other regions of Ukraine or outside the state. Children who live in the occupied territories can study in distance institutions. We believe that in the conditions of military action, distance education allows schoolchildren and students to study effectively. At the same time, at the initiative of the Ministry of Education of Ukraine, UNESCO, and other non-governmental organizations there are many platforms for additional online learning for both students and schoolchildren. An important condition for the functioning of distance education in Ukraine is its adaptation for children of primary school age. Based on the analysis it was possible to establish that in the conditions of the continuing confrontation, Russian shelling of civilian objects with rocket and artillery weapons the use of distance education technologies is relevant. As the Ukrainian experience of using distance education in the conditions of war shows, this method of organizing the educational process is almost without alternative. The aggressive actions of the Russian army and the threat of shelling of educational facilities make the traditional work of educational institutions difficult. Consequently, for Ukraine in the near future, distance learning is an integral part of education of the

future. We predict that in the future distance learning mechanisms will only improve, which will affect the spread and development of online education in general.

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