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Anti-Crisis Management of an Educational Institution at War: Reforms, Changes, and Innovations in Education

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Abstract: *The Russian-Ukrainian war has had a devastating impact on human life and undermined economies around the world, dealing a serious blow to Ukraine's education system. The Russian-Ukrainian war quickly led to the closure of universities and colleges, schools, and preschools, which should help reduce the total number of deaths from war. The most important war precaution, called "social distance," was to keep children alive. Closing educational institutions to keep children alive during the war entailed changing face-to-face classes to online learning, which necessitated the search for e-learning platforms for effective teacher-student interaction. The Russian-Ukrainian war revealed shortcomings in the management of educational institutions under conditions of war and the need to improve the training of teachers in the perspective of digital technology to adapt to digital education. After the war, distance learning and virtual-digital education may become an integral part of the higher education system. Higher education institutions are already planning educational and experiential strategies to ensure student learning outcomes in the future. The article presents changes and innovations in the educational system, in the management of the educational institution during the Russian-Ukrainian war, outlines models of education during the Russian-Ukrainian war; calculates ways of anti-crisis management of the educational institution in conditions of war.*

Keywords: *Digitalization of education, transformation of education, online learning, distance learning, learning models, risks of distance learning.*

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Introduction

As a result of the Russian-Ukrainian war, online education has become key and different from traditional methods, as face-to-face communication has been replaced by virtual communication, seminars by webinars. Distance learning was made possible by Zoom, Viber, WhatsApp, Telegram, Cisco, WebEx, Google Meet, Skype, Office 365, Google classroom, etc. Before the war, distance learning and correspondence courses were part of informal education. Now they are gradually replacing the formal education system.

Currently, the education system is solving the problem of adapting and finding effective approaches and technologies for teaching students. The abrupt transition from stationary to distance learning, the closure of universities is a small experiment of changes in education and the transition to online learning, which includes the study of methods of interaction with students and the technical training of teachers. Educational institutions need to take care of teacher training, the availability of technical equipment that allows free training. The Russian-Ukrainian war emphasized the need to develop digital literacy. After the war can the current situation calls into question the notion of the role of higher education institutions in ensuring the quality and manner of learning, its accessibility.

Conducting practical classes and lectures online will help to adapt the use of e-learning and increase its use in teaching. But this can cause a lot of problems through the availability of these digital education technologies. There are inequalities in different segments of society. And what for some is the norm of life (technology), for another is unattainable maximum. Yes, it should be taken into account that extracurricular learning is directly related to uninterrupted access to the Internet, which cannot always be achieved in the home.

The analysis of managerial practices on the adaptation of universities to online learning, anti-crisis management of the educational institution in war conditions is especially optimistic in the assessment of volunteer participation in the organization of online interaction of teachers and students in the scientific papers of Bykov (2019) and Buhas & Kovalenko (2016). Digitalization of university education researchers Trehubenko (2020) and Lvov et al., (2005) recommend implementing on the basis of advanced technologies, such as multimodal learning technology, virtual reality, augmented reality, Internet. etc., as under such conditions becomes an unprecedented gas pedal of technological development of universities.

The study of the consequences of the forced and urgent introduction of online learning during the war has activated not only the experimental and empirical research of Gilch et al., (2020), but boldly search for an adequate theoretical framework for understanding reality. Thus, Komogorova et al., (2021), discussing modern pedagogy, pay attention to the ways of transition to online learning, because the usual (non-digital) format of education in war conditions is dangerous. The authors suggest using securitization theory to analyze the situation in educational institutions. Annacone (2020) argues for a rethinking of the role of educational institution management by abandoning the war-induced neoliberal transformation of education and choosing the practice of digital learning as a reference point.

The purpose of the article is to study the changes and innovations in the educational system during the Russian-Ukrainian war, to determine the models of education during the Russian-Ukrainian war; to calculate the ways of anti-crisis management of the educational institution in conditions of war.

Changes and innovations in the education system

Students face different obstacles in distance learning, because the real presence and communication better contributes to the assimilation of knowledge and learning. In a virtual classroom there is no spirit of competition and community, personal support of the teacher to weaker students and encouragement of strong ones. Distance learning, in any form, is incapable of providing an effective learning process on the part of both the instructor and the student.

The unanticipated introduction of online learning leads to moral thinning and stress among educators. Curriculum planning, assessment, and reporting methods will need to be reconsidered (Hrytsenko, 2016).

After the end of the Russian-Ukrainian war, all institutions of higher education will need to draw conclusions about their choices and solutions for continuous student learning, which will ultimately determine the future of this generation.

The Russian-Ukrainian war has forced institutions of higher education to adapt to a rapidly changing situation that was unimaginable a few months ago. Research institutions face enormous challenges in managing research operations. Mandatory social distance requirements are difficult to implement at research institutions, especially in areas that need laboratory work and people.

This has mostly affected scientists, teachers, researchers, and graduate students. The career plans of many research students and doctoral students are threatened by the sudden interruption of their research plan

because of the Russian-Ukrainian war. Research institutes and universities must carefully develop and implement research management principles that respect social distancing protocols, steering research activities in a normal direction. Research fields that require laboratories may need to rethink their working models and carefully plan and prioritize their experiments.

The government can support and partially fund security initiatives of educational institutions in order to prevent disconnection of educational and research needs of students (Danchenko et al., 2004).

The above facts actualize the issue of reducing the number, the amount of homework for students, which requires finding organizational mechanisms to coordinate the activities of teachers. One of such mechanisms could be the reduction of the number of disciplines. This is possible through the transition to a concentrated form of organization of training, one model of which involves combining in a module from two to four interrelated disciplines studied in parallel.

Models of teaching during the Russian-Ukrainian war

Authors Berbets et al. (2021) identify the following digital learning models during the Russian-Ukrainian war:

1. ICT-based learning. In this model of learning there is a direct transfer of knowledge to students in a ready-to-remember form. Students receive instructional materials, summaries, and specific subtleties of theory. However, in the passive form, students have low engagement in class, and it is difficult to adapt the pace of instruction to all students. This model of learning can be successful only if the educational information is highly appealing, supported by an interesting narrative from the teacher. ICT allows significant savings of time and, at the same time, diversification and better imagination of the learning material.

The simplest form of using technology in education is the use of video materials from YouTube. The teacher doesn't need to waste time preparing didactic materials of his/her own, while students who have difficulty understanding a process simply have to play the recording several times.

Today, all time and space efforts should be focused on the development of mental abilities and independent thinking, not on teaching knowledge that can be found freely available in seconds. Therefore, this method of learning is not recommended in its pure form, but should be combined with methods of problem solving or project development (Hrytsenko, 2020).

2. Reverse Classroom. Reversal in this model deals with two important aspects. The first relates to the change of roles in learning, that is, the teacher is pushed away from the center of attention, and his place is taken by the students. The second aspect concerns the process of learning material assimilation, i.e. students themselves use external sources to search for information, process the information themselves, and summarize at the end of the lesson under the active guidance of the teacher. The application of this model should help to build students' confidence that answers to questions always give rise to new questions and encourage them to adopt the Socratic position (to refute existing knowledge and bring it to absurdity by revealing the actual path themselves). In this model, the teacher does not dominate the learning process, but plays a supporting role and motivates students to think creatively and independently. He develops task topics, deadlines, and grading rules with the students, and provides information resources found freely available or created by himself. In the first stages the student works individually and becomes an active creator of knowledge, and in the next stages he/she acquires the status of an expert in a certain topic and already teaches fellow students. ICTs not only support the instructor's lectures, but are used by students to perform certain tasks independently. In the model of anticipatory learning, the student is no longer taught something new in the lecture, but is allowed to solve problems on his/her own (Zaspa, 2018).

3. Hybrid learning. This model combines two forms of learning: electronic in a digital environment and traditional in the form of a direct meeting between the instructor and students. The combination of seminars, lectures, exams, online course consultations, chats, and teleconferences maximizes the benefits of each form. The wide variety of forms of study sessions allows the model to be adapted to the subject matter, scope, and characteristics of the students. The blended learning process takes place in several stages (Kerroum et al., 2020).

In the first stage, the instructor defines the principles of cooperation and the goals to be achieved after the completion of the learning process. The second stage is the transfer of theoretical knowledge in a digital environment, in which there is a leveling of knowledge in all students. In the next stage, the digital knowledge acquired is consolidated as skills in the classroom. The fourth stage involves a return to the digital learning environment in the form of an online course in which the student takes an online test. The final fifth stage again involves a face-to-face meeting with an individual assessment of the results obtained. In this model, the learning environment is largely virtual, so the instructor must be the moderator of the

learning process, provide timely assistance to students, motivate them, and constantly generate new online courses. Students must plan their own online learning time, match the pace of learning to their individual needs, communicate with their fellow students, and evaluate their learning progress. Hybrid learning is not only the use of gadgets and apps, but also their compatibility with the didactic process and tasks in the classical classroom (Tryus et al., 2017).

4. Educational Project. Students' in-depth study of a phenomenon or problem in any field of knowledge involves independent decision-making and interdisciplinary connections. At the stage of selecting a topic and supplying a goal, it is found out whether it is interesting for students, whether they will be able to find information, as well as work autonomously. The enclosed instructions describe the stages of learning, sub-step assignments, learning process schedules, sources, and evaluation criteria for the entire project. In the following stages, students work on the project in groups or individually for several months and present it as a book, lecture, theatrical production, exhibition, video film, or multimedia presentation. The project is evaluated not only by teachers, but also by fellow students and the developers themselves. In this model, the instructor is not focused on transferring knowledge to students; he or she is the organizer, negotiator, motivator, strategist, and project initiator. Students implement their own unique projects and bear full joint responsibility for the result. A variation of the project model is the WebQuest, which uses elements of team-based learning, and students engage their imagination and thoughtfully search for information online. Competencies focusing on communication, creative and critical thinking, and teamwork are more important in the digital world than the ability to simply memorize instructional material (Teslia et al., 2020).

5. Problem-based learning. The peculiarity of this model is that students solve real problems with the support of the teacher. Classical learning process is the imposition of external thinking and action models on students and does not correspond to the modern idea of education. On the contrary, solving practical problems prepares the young generation well for effective functioning in the electronic society. The main goal of the problem model is the compilation of knowledge for use in practice. The most important stage of the model is the creation of the problem situation and its graphic interpretation. The discovery problem is related to the thinking activity from practice to theory. The problem of construction is characterized by practical activities from theory to practice. The final stage involves testing of hypotheses and systematization of knowledge (Honchar et al., 2021).

6. Gamified learning. The trend of learning through entertainment includes two models: education based on ready-made games and the use of game mechanics. This encourages students to be more engaged in the didactic process and to think strategically. This model consists of three stages.

The first stage identifies the knowledge and skills the student needs to acquire, as well as the rules of the game and the conditions for evaluating the results. The key point of the first stage is the creation of a communication service where the student-player can track his progress and correlate it with other participants in the game. For example, in gamified social networking learning, the Active Users service is widely used.

Student players should have the following feelings: autonomy (choice of moves, passing all stages at their own pace); growth of mastery (the game does not impose a penalty for a mistake); taste of purpose (acquisition of specific competencies). A well-designed online game should not activate only external stimuli (victory, gift, bonus), but should evoke a sense of deep and lasting satisfaction by activating internal needs (sense of belonging to the community, the discovery process). Gamified learning process should end with a brief summary and grading according to the rules (Milash, 2010).

7. Connectivist learning. This model is based on the assumption that our knowledge of the world is not objective and is a simple knowledge construction process. Students must actively construct (playing with children's cubes) their knowledge in the interest of their own development. The information for this process does not have to be in our heads.

It can also be outside in different digital forms (Internet portals, cloud storage, databases).

8. Networking Learning. New forms of knowledge transfer and accumulation (websites, hyperlinks, digital collections, cloud programs and computing, virtual reality) are emerging in teamwork online. The online student becomes part of a larger network and actively participates in online conversations with useful acquaintances in completely different spheres for him/her. The tutor helps people "rock out" and engage in conversations with each other (Tymchenko et al., 2006).

The presented models can be used in educational practice to increase the effectiveness and attractiveness of the didactic process. These models are created taking into account the concept of learning by doing, the use of multimedia and ICT tools. Although digital literacy allows the student to prepare for today's professional life, learning with the use of Internet resources is not an end in itself. Teachers use digital learning models to fulfill the core mission of education - the acquisition of knowledge and the building of skills in students.

Ways to manage an educational institution under war conditions

The Russian-Ukrainian war caused a large-scale socio-pedagogical experimental work, in which as a new factor introduced into the organization of the learning process, a form of contact remote learning using electronic information and educational environment of universities and distance learning technologies acted. This allowed not only to create a new model of learning with great opportunities, but also to identify the pain points of the online learning process, systematized by the main components of the learning process (goal setting, motivation, learning content, results). The task of the education system is not limited to the formation of students' scientific knowledge systems (in this or that area) and the ability to apply them to solve personal, social and professional problems (Mora & Sánchez, 2020).

The main task of education is to develop a student's personality, his life experience, creating conditions for his self-realization in a dynamically changing environment, which cannot be successfully achieved in the absence of live communication of all participants in the educational process. Analysis of attitudes towards distance learning for students and teachers allows us to conclude that in the system of basic formal education of all levels and directions of training it can be considered as a form that complements and strengthens the socio-pedagogical, organizational, psychological and managerial potential of the traditional format of getting education. A reasonable combination of forms, methods and means of traditional ("face-to-face") and virtual, remote interaction between the participants of the educational process is objectively in demand in modern education. Therefore, a combination of forms of learning in the real and virtual space in current didactics should be regarded as a general didactic principle of learning, aimed at identifying and implementing in the educational system of psychological and pedagogical possibilities of information and educational environment and distance learning technologies.

It should be noted that the development of ICTs and their active use in the educational process contributes to the transition to a new quality of relations in the systems student-university, student-teacher, teacher-university, university-government, university-business. The subjects of this relationship are able to give immediate feedback and respond to changes in the environment.

In this aspect, we should note the existence of the so-called "digital divides", overcoming which the country reaches a qualitatively new level in its digital development. The so-called first digital divide is caused by a number of indicators, which include the following: low qualification level of

users, low level of technical equipment, insufficient number of users of Internet resources among different categories of the population. Thus, according to these indicators, we can state a clear gap in information and technological development and the existence of information inequality between countries. So far, Ukraine has managed to overcome this gap: universities and schools are mostly equipped with computers and the Internet (Spear, 2020).

Thus, the number of Internet users in Ukraine, according to the analytical department of the Ukrainian Association for Electronic Communications, at the beginning of 2022 increased by 7%, mainly due to mobile and older users.

Thus, we can state that Ukraine has overcome the first digital divide, which means the transition to the next stage of digital development - to the second digital divide.

The second digital divide is characterized by the fact that knowledge becomes open and accessible, their presentation attracts the attention of other users of Internet resources. It is the operation and exchange of new knowledge in open access that allows active integration into a single information space. At the moment, overcoming the second digital divide is a topical area of educational activity for Russia. This is evidenced by the level of development of various online educational platforms and forms of distance learning.

The concept of smart education is based on the following methodological provisions: the first provision is due to the need to use in the educational programs of higher education current scientific information to solve educational problems. As the speed of information flow increases, the content of academic disciplines requires constant updating with verified data that meet the realities of modern Ukrainian society. This, in turn, stimulates cognitive interest in students and allows the formation of professional competencies with a practical orientation (Milash, 2010).

The second provision is related to the organization of students' independent work in different types of activities: learning, research, analytical, project. Access to open and relevant information allows for creativity, non-standard decision-making, promotes scientific and creative search. Conditions are created for the construction of individual educational trajectory, taking into account personal characteristics, health, social status and the needs of the labor market. I.e. the opportunity for inclusion in the education system at different levels, mastering the necessary competencies in the context of rapidly changing demands of society.

It is worth noting the possibility of lifelong learning. If the traditional model of education was clearly fixed by the classroom time and academic schedule, the digital model of education allows you to go beyond the higher school and continue your education directly in the professional environment. Indeed, the professional environment becomes a participant in the educational process, organizing the involvement of students in solving real-world problems and participating in analytical and design activities.

Thus, the traditional model of education with the introduction of innovative technologies inevitably undergoes significant changes associated with fundamentally new technological features of information.

The digital resources a person has in the implementation of his daily activities allow him to overcome many barriers in the classical model of education: the choice of forms and methods of learning, the pace of mastering materials, the choice of the teacher. Therefore, the educational system must meet the requirements of modern realities in order to ensure the successful entry of society into the digital age (Kerroum et al., 2020).

For the successful organization of the digital learning process in the present Ukrainian society requires a functional regulatory framework, which should be aimed at modernizing the system of education and training, to bring educational programs in line with the needs of the digital economy, to widely introduce digital tools of learning activities and integrate them holistically into the information environment, to ensure that citizens can learn an individual curriculum throughout their lives - anytime and anywhere". The main goal of this project becomes, firstly, the implementation of access to many online courses on a "one-stop-shop" principle, i.e. having an information resource that combines various online platforms and many online courses. The developers of the project note that now there are many foreign and domestic online courses and educational platforms, but it takes a lot of time to find an appropriate course and evaluate its usefulness. A unified platform will allow people to quickly and efficiently find the necessary courses regardless of their place of residence or education.

Secondly, the program introduced a new principle of evaluation of online courses, allowing them to qualitatively evaluate them on a multi-stage system. We are talking about the need to comply with the technical requirements of the resource, in accordance with the standards in the field of content and the existing legislation of Ukraine in this area. In addition, a certain infrastructure for the training of scientific, pedagogical and administrative personnel for the successful implementation of digital education practices is created. Thirdly, the project provides step-by-step

professional development of scientific and pedagogical staff in the development, use and examination of online courses. The development of online learning is impossible without the development of teachers' skills in this area. Another area of professional development is the ability to use up-to-date educational resources in the educational process. The third area of activity under this project item is the establishment of an expert community that would be able to assess the content of online courses and their compliance with the developed standards (Hrytsenko, 2016).

Thus, the features of the digital educational environment in the conditions of today's Russian society are changes in the professional practice of teachers, the growing importance of student autonomy in the learning process, changes in the educational process towards increasing the structure of the educational process, reducing the duration of courses, the establishment of a modular system of the educational process, increasing academic mobility opportunities, the increasing importance of interactive and multimedia teaching methods.

To implement a systematic and effective final transition from traditional to digital model of education requires a radical restructuring of the entire system of higher education at the state level, the use of modular digital learning environments.

Conclusion

The importance of the article lies in the study of changes and innovations in the education system during the Russian-Ukrainian war, as students encounter different obstacles in distance learning. The above facts actualize the issue of optimizing the number, volume and quality of homework for students, which in turn requires finding organizational mechanisms to coordinate the activities of teachers working with a particular study group. One such mechanism could be to reduce the number of simultaneously and concurrently studied by students disciplines. This is possible through the transition to a concentrated form of organization of training, one model of which involves combining in a module from two to four interrelated disciplines studied in parallel.

The article also outlines models of learning during the Russo-Ukrainian War and finds that the following digital models of learning during the Russian-Ukrainian war are effective: 1. Learning with the use of ICT. 2. Flipped classroom. 3. Hybrid learning. 4. Educational project. 5. Problem-based learning. 6. Gamified learning. 7. Connectivistic learning. 8. Networking learning.

The article calculates ways of anti-crisis management of educational institution under war conditions.

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The Authors 2,3 emphasized the need for effective management of the educational institution during the Russo-Ukrainian war;

The Author 4 investigated the models of education during the Russian-Ukrainian war;

The Authors 5,6 miscalculated the ways of anti-crisis management of the educational institution during the war.

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