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## Modern management of higher education in the challenges of time

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In the modern theory of educational management, there is a rethinking of the essence of educational organizations and ways of their scientific representation. If earlier such organizations were considered as an object that is managed, today, leading concepts of educational management consider them as a kind of subject of management and self-government. The COVID-19 pandemic and the war in Ukraine have forever changed education: forms, methods, and thinking. According to the Ministry of Education and Science of Ukraine, as of July 2022, 2188 educational institutions suffered from bombing and shelling, 221 of them were completely destroyed. War is not only financial and material losses, but most importantly, it is the loss of human resources, including through military migration. According to the State Border Guard Service of Ukraine, from February 24 - June 3, 2022, more than 5.2 million people left Ukraine, the vast majority of whom are Ukrainian woman. According to the UN Refugee Agency, as of June 9, 2022, there are more than 4.9 million refugees in Europe who fled Ukraine because of the war, and, if the war continues for a long time, about 5 million people may not return to Ukraine: these are young, working-age people and children. The COVID-19 coronavirus pandemic has affected the education system around the world, leading to the mass closure of schools and universities. Almost all universities in the world have switched to online learning.

The purpose of the article is to study the realities of modern management of education and find ways to improve it in the challenges of time. Management in education is a set of principles, methods, organizational forms, and technological methods of managing the educational process aimed at improving its efficiency. Education management should be aimed primarily at human resources. At the same time, the following subsystems can be distinguished in the education management system, which is no less important: strategic development, research, informatization and computerization of higher education institutions, economic and production activities, international activities, social and educational work, administrative and economic activities, etc. Each of these subsystems performs several specific functions that reflect its content and is differently affected by the challenges of time. It is a detailed strategy of the university's response to the challenges of time that can ensure not only survival but also the development and strengthening of the university competitiveness. After the end of the war, it is necessary to revise the Roadmap for Change once again to update it using the proposed algorithm.

*Keywords:* war in Ukraine, roadmap for change, education management, COVID-19 pandemic.

### СУЧАСНИЙ МЕНЕДЖМЕНТ ВИЩОЇ ОСВІТИ В УМОВАХ ЧАСУ

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У сучасній теорії освітнього управління відбувається переосмислення сутності освітніх організацій, способів їх наукового уявлення. Якщо раніше такі організації розглядалися як об'єкт, яким керують, то сьогодні провідні концепції освітнього управління розглядають їх як своєрідний суб'єкт управління та самоврядування. Пандемія COVID-19 та війна в Україні назавжди змінили освіту: форми, методи, мислення. За даними Міністерства освіти і науки України на липень 2022 р. 2188 закладів освіти постраждали від бомбардувань та обстрілів, 221 з них зруйновано повністю. Війна — це не тільки фінансові та матеріальні збитки, а що найголовніше — це втрата людського ресурсу, у тому числі через воєнну міграцію. За даними Державної прикордонної служби України протягом 24 лютого — 3 червня 2022 року з України виїхали понад 5,2 млн осіб, переважна більшість яких є громадянками України. За даними Агентства ООН у справах біженців, станом на 9 червня 2022 року у країнах Європи перебувають понад 4,9 млн біженок, які покинули Україну через війну і, якщо війна триватиме досить тривалий час, в Україну можуть не повернутися близько 5 млн осіб: це люди молодого, працездатного віку та діти. Пандемія коронавірусної інфекції COVID-19 торкнулася системи освіти у всьому світі, що призвело до масового закриття шкіл та ЗВО. Переходу на онлайн форму навчання зазнали практично всі університети світу.

Метою статті є вивчення реалій сучасного менеджменту освіти та пошук шляхів її вдосконалення у викликах часу. Менеджмент в освіті — це комплекс принципів, методів, організаційних форм та технологічних прийомів управління освітнім процесом, спрямований на підвищення його ефективності. Менеджмент освіти має бути направлений, в першу чергу, на людські ресурси. Водночас у системі менеджменту освіти можна виділити такі підсистеми, які не менш важливі: стратегічний розвиток, науково-дослідна робота, інформатизація та комп'ютеризація ЗВО, економічна та виробнича діяльність, міжнародна діяльність, соціальна та виховна робота, адміністративно-господарська діяльність тощо. Кожна з цих підсистем виконує ряд специфічних функцій, що відображають її зміст і по-різному піддається впливу викликів часу. Всі вищенаведені аспекти враховані автором у розробленому Алгоритмі відповіді сучасного менеджменту освіти у викликах часу. Саме детально розроблена стратегія відповіді університету на виклики часу може забезпечити не просто виживання, а й розвиток та посилення конкурентоспроможності ЗВО. Після закінчення війни треба ще раз переглянути Дорожню карту змін задля її актуалізації, використовуючи запронований алгоритм.

*Ключові слова:* війна в Україні, дорожня карта зміни, менеджмент освіти, пандемія COVID-19. **Analysis of recent research and publications.** According to the Ministry of Education and Science of Ukraine, 2,188 educational institutions were damaged by bombing and shelling (Fig. 1), and 221 of them were completely destroyed (Fig. 2).

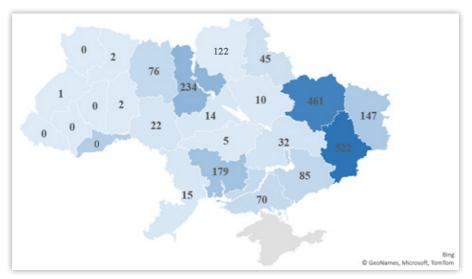


Figure 1 — The number of damaged educational institutions as a result of Russia's invasion of Ukraine (Ministry of Education and Science of Ukraine, n.d.)

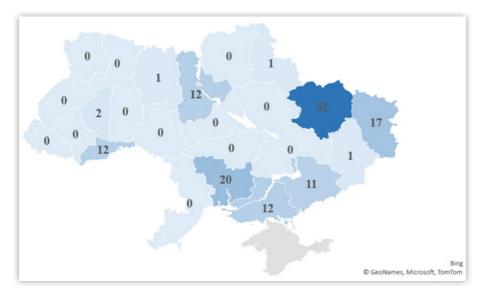
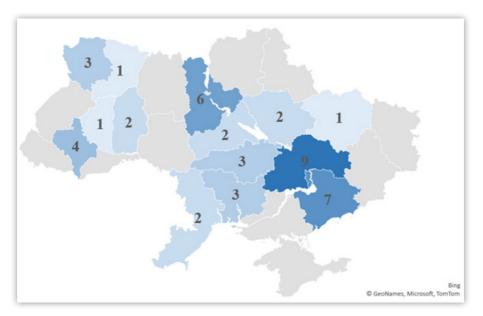


Figure 2 — The number of destroyed educational institutions as a result of Russia's invasion of Ukraine (Ministry of Education and Science of Ukraine, n.d.)



More than 40 higher education institutions were also relocated due to military operations (Fig. 3).

Figure 3 — The number of relocated universities (source: compiled by the author based on the data of UEDEBE (Unified State Electronic Database on Education, n.d.))

War is not only financial and material losses, but most importantly, it is a loss of human resources: due to military migration. According to the State Border Service of Ukraine (State Border Guard Service of Ukraine, 2022), over 5.2 million people left Ukraine between February 24 and June 3, 2022, the vast majority of whom are citizens of Ukraine. According to the UN Refugee Agency, as of June 9, 2022, there are more than 4.9 million refugees in European countries who left Ukraine due to the war (Operational Data Portal, 2022). According to the director of the Institute of Demography and Social Research, named after M.V. Ptukhy of the National Academy of Sciences of Ukraine, Ella Libanova, if the war continues for a long enough time, and 5 million people may not return to Ukraine: these are young people of working age and children (Libanova, 2022).

The pandemic of coronavirus infection COVID-19 has affected the education system around the world, which has led to the mass closure of schools and universities. Universities around the world were also closed for quarantine. Almost all universities in Ukraine switched to distance learning on March 16, 2020 (Ministry of Education and Science of Ukraine, 2020).

The closure of educational institutions has consequences of a similar nature regardless of country, time and culture. First, there is the issue of supervision of children whose parents are engaged in work. The simplest solution of using babysitters may no longer work in light of the risks associated with the spread of the virus.

As a result of the closure of universities, the dormitories belonging to them are closed. So, all over the world, we see problems with housing for students who, for one reason or another, cannot return home. Part-time students also have problems with work and food since most of the businesses they work in are also closed due to quarantine rules.

Another essential problem is ensuring the continuity of education. Most of the world's countries are switching to distance learning in the form of radio broadcasts, online platforms and the broadcast of lessons through television.

**The purpose of the article.** The purpose of the paper is to study the realities of modern education management and find ways to improve it in the face of the challenges of the time.

**The main part.** Management in education is a complex of principles, methods, organizational forms and technological methods of managing the educational process aimed at increasing its effectiveness (Baibakova, 2011).

According to the Law of Ukraine "On Higher Education" (Verkhovna Rada of Ukraine, 2014), participants in the educational process at universities are:

1) scientific, scientific-pedagogical and pedagogical workers;

2) applicants of higher education and other persons studying in higher educational institutions;

3) practitioners who are involved in the educational process in educational and professional programs;

4) other employees of higher educational institutions (Verkhovna Rada of Ukraine, 2014).

Thus, education management should be directed, first of all, to human resources. At the same time, the following subsystems can be distinguished in the education management system, which are no less critical:

- strategic development,
- scientific research work,
- informatization and computerization of the university,
- economic and production activity,
- international activity,
- social and educational work,
- administrative and economic activity.

Each of these subsystems performs several specific functions that reflect its content and is differently affected by the challenges of time.

The strategic development management subsystem provides for strategic planning and management, development and implementation of programs and projects of strategic development of the university, determination of specific strategies at certain stages of organizational development, development and implementation of personnel strategy and identification of leading groups of influence and determination of strategies for interaction with them, analysis of external and internal university environment; identifying its strengths and weaknesses; development of a mechanism for monitoring the organizational development of universities. In post-war and post-war times, it is one of the most critical subsystems. Current challenges require revision and adjustment of the existing strategy.

The subsystem of higher education research management includes the planning and organization of scientific research in various fields of knowledge, the organization of scientific events (conferences, seminars, workshops), the management of professional development of scientific and pedagogical workers, the management of the work of postgraduate studies, doctoral studies and specialized academic councils, and the organization of publishing activities. Currently, funding for new scientific projects from the Ministry has been completely suspended, and financing of existing scientific topics has also been significantly reduced.

The subsystem of informatization and computerizatio management of higher education involves the development and implementation of the concept of the educational process and scientific activity, management of computer networks and ensuring access of teachers and students to various information resources of the IT technologies. It is one of the few subsystems that has won in the current conditions. First, the transition to online education required universities and teachers to use special programs (Google Class, Moodle, etc.), software products (Zoom, Telegram, Google Meet, etc.); many teachers have learned to use specific programs and services (Kahoot, Mentimeter, Jamboard, etc.) in classes to engage students more. Second, many research and educational bases opened up free access to their resources to support teachers during the military invasion. This subsystem is undoubtedly the future of education, so universities need to increase its use in the educational process.

The subsystem of managing economic and production activities is managing finances and accounting, conducting marketing research on the market of scientific and educational services, attracting additional financial resources, managing labour and wages; commercial activity. Management of this subsystem in current conditions is reduced to the maximum and optimal savings to release all possible additional financial resources.

The international activity management subsystem includes the creation of an organizational structure for the management of international relations, the management of international scientific and educational projects and academic programs, the development of scientific and pedagogical cooperation with foreign universities and global strategic partnerships, interaction with international associations and university consortia; This system is also a win-win, as many countries and universities have provided additional opportunities for students, teachers, researchers and administrative staff, provided scholarships, grants for scientific research, and temporary employment. In the current realities, universities need to take advantage of the open opportunities of international mobility, establishing long-term partnership relations with foreign universities.

The social and educational work management subsystem provides for personnel management, development and implementation of social protection measures for university employees, creation and management of their motivation and stimulation system, and management of cultural and educational, recreational and sports mass work of student self-government bodies. This subsystem neither won nor lost in the current realities, but it is vital right now. Higher education institutions should pay attention to the social protection of university employees and students, as well as the creation and management of a system of their motivation and stimulation, primarily by providing the necessary conditions for work and study (online/offline/mixed).

Following Presidential Decree No. 266/2022 dated April 21, 2022, the National Council for the Recovery of Ukraine from the Consequences of the War has developed a plan of measures for the post-war recovery and development of Ukraine within the framework of 24 working groups. Proposals regarding priority reforms and strategic initiatives and draft legal acts, the adoption and implementation of which are necessary for the effective work and restoration of Ukraine in the war and post-war periods, including the restoration of education. According to the Materials of the working group "Education and Science" (Verkhovna Rada of Ukraine, 2014), the main problems that must be solved within the framework of the Recovery Plan in the direction of "Higher Education":

 many educators and students have lost access to their place of work and study (have left or are under occupation). There is a risk of losing these people to the higher education system of Ukraine;

— a sufficiently high level of corruption, which includes the enrollment of academic disciplines for a specific benefit to teachers or other employees (bribery), and academic dishonesty (in fact, appropriation of intellectual property of others);

— insufficient level of internationalization of higher education of Ukraine into the world and, especially, the European system of higher education, barriers to attracting foreign teachers to teaching and international students to study or internship in Ukraine under exchange programs;

 despite the enormous positive aspects of external examinations (overcoming corruption and increasing inclusiveness when entering universities), this instrument needs reform because (A) a significant percentage of applicants gain access to higher education bypassing complete external testing, and (B) external examinations force applicants to concentrate on specific limited skills, suppresses their creativity to solve more creative tasks; — the network of higher vocational education and vocational training of Ukraine is excessively enlarged and does not correspond to the financial capacity of the state to support it. At the same time, there is excellent resistance among educators to the optimization of the network of higher vocational education and vocational education and training. Also added is the problem of destroyed and displaced educational institutions;

— most higher education institutions and vocational schools have significant infrastructure difficulties: maintenance and renovation of educational facilities taking into account the needs for inclusiveness, construction of new modern buildings and dormitories, and obsolescence of laboratory research equipment. Added to this is the lack of accounting for the infrastructural losses of the university, which suffered as a result of the war; — the low level of financial autonomy of higher education institutions prevents them from promptly managing available funds and property, establishing their wage systems, conducting a flexible pricing policy for primary and additional educational and other services, and attracting investments from businesses and grants from foundations.

There is also a separate challenge of funding departmental higher education institutions to bypass the competitive field of the general distribution of state funding;

— there is no legal freedom to study on an autonomous educational trajectory in the country for an indefinite period. The duration of the educational program is strictly fixed in legislation, and social benefits (deferral from the army, discounts or scholarships, etc.) are tied to student status.

And highlight the key opportunities:

— internationalization of institutions of higher education (scientific institutions) through expanding opportunities to participate in international projects and programs of the EU and other countries, attracting foreign students and, teachers, researchers;

– support of the active part of the educational environment of progressive changes (Working Groups, n.d.).

Completion of the external examination was also simplified this year: a national multi-subject test was introduced — a simplified version of the external examination, completed once through a computer, the results are known immediately; to enter a contract for some economic specialities, it will be enough to submit a letter of motivation, it is not necessary to take an external examination. It is assumed that this year the number of entrants to Ukrainian educational institutions will decrease due to the departure of citizens abroad during the war, so officials are working to ensure that the national multi-subject test can be passed in the countries of the European Union so that Ukrainian applicants have the opportunity to enter higher education institutions in Ukraine.

Thus, summing up the analysis of the current state of modern education management, we offer an algorithm for the response of higher education institutions to the challenges of time (Table 1).

# Table 1Algorithm of the response of modern education manage-ment to the challenges of time (source: proposed by the author)

Stage	Execution period	The goal of the stage	Tasks of the stage	Responsible	Indicators
Preparatory	2 months	Preparation of the university for changes	- creation of a working group (up to 10 people), which should include representatives of the top management (rector, vice- rector), directors (deans) of institutes (faculties), the quality department of higher education, a representative of the planning and financial department and others as necessary;	Newly created group "Promotion of changes"	Project of the Road Map of University Changes; Frameworks and standards of competence of all participants in the
			<ul> <li>determination of the trajectory of changes in the priority areas of change;</li> <li>development of the framework and standards of competence of all participants in the educational process, as well as tools for their measurement;</li> </ul>		educational process.
1 Stage.	5-6 months	Revising the university's strategy according to the challenges of the times	<ul> <li>analysis of the current state of the university by the Road Map Project;</li> <li>development of a road map of university changes.</li> </ul>	The group "Promotion of changes" and its appointed executors.	Road map (RM) of university changes;
2 Stage. Stage of subsystem changes	1-2,5 years	Changes in each subsystem	<ul> <li>implementation of planned changes according to the road map;</li> <li>implementation of appropriate measures.</li> </ul>	The group "Promotion of changes" and its appointed executors.	Compliance with the specified indicators

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2.1		- development and implementation of		
	Strategic development	programs and projects of strategic		
2.1	management subsystem	development of the university		
		following the RM;		
		- determination of specific strategies		
		at certain stages of change and	The group "Promotion of changes" and its appointed executors.	
		identification of the main groups of		indicators
		influence;		
		– analysis of the external and internal		
		environment of the university;		
		identifying its strengths and		ed
		weaknesses;		cifi
		- development of a mechanism for		bee
		-		Je s
		monitoring the organizational		h tl
		development of universities.		wit
2.2		- analysis of the current situation of		lce
		financing the scientific research of		liar
	Subsystem of management			Idm
	of scientific and research	-	ron	Ĉ
	work of universities	- identification of financial reserves	le g	
		(redistribution of funds to more	Th	
		priority areas, involvement of		
		business in financing scientific		
		developments);		
		- feasibility analysis, planning and		
		organization of scientific research by		
		teachers, organization of scientific		
		events (conferences, seminars, master		
		classes);		
		- management of advanced training of		
		scientific and pedagogical workers.		
		– formation of educational policy		
2.3		digitization according to the road		
		map;		
	Informatization and	- ensuring compliance with digital		
	computerization	indexes		
	management subsystem	readiness of all participants in the		
		educational process with ways of		
		systematically monitoring the state of		
		all components of digitalization.		
	Subsystem of managemen			
2.4	of economic and	– redistribution of funds to more		
	production activities	priority areas.		
		– activation of international		
2.5	International activity	cooperation;		
	International activity management subsystem	– active involvement of displaced		
	management subsystem	workers in establishing cooperation.		
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Therefore, it is precisely the detailed strategy of the university's response to the challenges of the time that can ensure the university's survival, development, and strengthening of competitiveness. After the war's end, it is necessary to review the Roadmap of changes once again to update it using the proposed algorithm.

#### Conclusions

The COVID-19 pandemic and the war in Ukraine fundamentally and permanently changed education at all levels; the pre-war state will never exist again. University management must understand that in any crisis, it is necessary to look for opportunities and ways to overcome the crisis. Currently, the most significant opportunity is the internationalization of higher education institutions through the expansion of opportunities for participation in international projects and programs with the involvement of foreign students and teachers, researchers.

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