UKRAINE'S INTEGRATION INTO THE EUROPEAN EDUCATION ENVIRONMENT: CHALLENGES AND DEVELOPMENT PERSPECTIVES

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Annotation. *Ukraine faces many challenges in achieving the objectives of higher education reform and has no alternative but to be integrated into Bologna process and the European higher education space. These challenges include the following: low performance and publication rates of Ukrainian scientists; lack of societal recognition of the Bachelor's degree as a qualification level; complexity of the Ukrainian system of scientific degrees compared to the system in Europe; difficulties in implementing the results of research into higher education processes; problems with establishing contacts between Ukrainian and European universities and, in this context, the issue of implementation of Joint Programs and Joint Degrees; modernization of the system of quality control; and the gap between education and the labor market.*

It is pointed some proposals that will contribute to the European integration of Ukrainian education and science, in particular: continuation of the initiated reforms in the field of education and science of Ukraine based on the best European experience; development of a network of educational hubs both within Ukraine and abroad; attraction of foreign investments in reconstruction of damaged educational infrastructure; updating of the roadmap for the integration of the scientific and innovative system of Ukraine into the European Research Area; strengthening international cooperation and increasing the participation of Ukrainian scientists in EU research and innovation programs (e.g., Erasmus, Horizon Europe etc.); commercialization of intellectual property and intensification of cooperation between science and business; increasing the publication activity of Ukrainian researches in scientific journals, which are included to the Scopus and Web of Science databases, etc.

At the same time, it is important that the Ukrainian education system, in the process of European integration, preserve its unique features, including a rich cultural and historical heritage. Therefore, regardless of the unprecedented cruelty of the russian aggressors towards the Ukrainian people, these events

have led to the acceleration of the processes of Ukraine integration into the European educational and innovative space.

   Keywords*: education, reform, development, state policy in the education sphere, European integration, European education area, European Higher Education Area (EHEA), Bologna Process, educational infrastructure, higher education reform, Educational management, Ukrainian higher education system.*

우크라이나 교육의 유럽통합 : 도전과 발전 잔망

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   국문초록. 본 연구의 목적은 우크라이나에서 행해진 학제 통합 개혁이 교육 정책 전이 논쟁에 주는 시사점에 대해 고찰하는 것이다. 본 연구는 볼로냐 프로세스에 따른 학제 통합 개혁이 우크라이나와 같은 구공산권 전통과 제도를 가진 체제 변환 국가의 일선 교육 현장에서 수용되는 과정에 대한 분석을 통해 교육정책 전이 논쟁에 다음과 같은 시사점을 도출해 내었다. 첫째, 체제변환국의 정책전이 연구에서 주체 행위자에 대한 분석의 중요성을 제고해야 한다는 것이다. 볼로냐 프로세스가 원래 대학의 자율성 제고 및 증대 시키는 목적으로 만들어 졌음에도 불구하고 체제변환 국가들에서는 오히려 교육 분야에서 중앙집권적인 관료체계를 강화하고 교수들 및 대학들의 자율을 저해하는 방향으로 실행되었다는 사실은 주체 행위자에 따라 정책전이가 상이하게 일어나는 것을 시사한다. 둘째, 체제변환국에서 실행되는 정책 전이를 분석함에 있어 일선의 교육 관료들의 반응 및 행동과 교육정책의 결정의 주체인 중앙 정부의 교육 관료들 간의 괴리에 주목해야 함을 시사한다. 볼로냐 프로세스는 체제변환국가에게 고등교육의 학제 통합이라는 기술적인 개혁뿐만 아니라 교육제도의 근본적이고 구조적인 개혁이라는 두 가지 부담을 주는 결과를 초래했다.
   주제어: 학제 통합 개혁, 유럽 연학의 고등교육 시스템, 볼로냐 프로세스, 우크라이나 고등 교육 시스템, 교육정

   Ukrainian authorities demonstrated their strategic direction of European integration as early as the mid1990s. A retrospective analysis of the development of relations between Ukraine and the EU shows that relationships between the countries date back to the proclamation

of independence of Ukraine in 1991. In particular, in December 1991 the Minister of Foreign Affairs of the Netherlands, as the representative of the EU Presidency, in his letter on behalf of the European Union, officially recognized the independence of Ukraine.

Ukraine's commitment to building relations with the European Union was first documented in the Resolution of the Verkhovna Rada of Ukraine of July 2, 1993 "On the main directions of the foreign policy of Ukraine" [1].

Subsequently, Ukraine's strategic course for European integration was confirmed and elaborated in the Strategy for Ukraine's Integration into the EU (approved on June 11, 1998), and the Program for the Integration of Ukraine into the EU (approved on September 14, 2000).

The next important stage of bilateral relations was the ratification of the Association Agreement between Ukraine and the EU in 2014, which officially entered into force on September 1, 2017. This international legal document at the treaty and legal level consolidated the transition of Ukraine-EU relations from partnership and cooperation to political unification and economic integration.

In 2019, the Constitution of Ukraine for the first time formalized the course of European and Euro-Atlantic integration. A truly historic moment was the qualitatively new stage of relations between Ukraine and the EU in 2022, when on June 23, representatives of all 27 EU countries voted to grant Ukraine the status of candidate for EU membership.

Until this day, Ukraine has passed through a rather long and difficult time, numerous reforms were carried out in various spheres of life, but the unconditional push to join the European family was the brutal invasion of the territory of sovereign Ukraine by the russian army and the attempt to annex its territory on February 24, 2022 (immediately on the 5th day after the invasion of russian troops Ukraine applied for membership in the EU).

Thus, for the first time in its history, the EU gave the green light for European integration to a war-torn country with part of its territory temporarily occupied. Ukraine's status as a candidate for membership in the EU, in particular, gives grounds to assert that Ukraine has sufficient human capital, education, research, innovation and future achievements in this field.

Moreover, among Ukrainian society, support for European integration processes has grown significantly since the beginning of russia's armed aggression and continues to be at a high level. Thus, recent polls conducted by the sociological group "Rating" showed that more than 80 % of Ukrainians surveyed support joining the EU and NATO, and 86 %

of respondents would support Ukraine's accession to the European Union in case of a referendum. It is important that support for EU accession is unanimous among representatives of all macroregions of Ukraine and age groups [2].

Ukraine is committed to integrate into European education area.

It is necessary to emphasize the fact that various European countries are adopting the aims of Bologna reforms at different rates depending on their national and cultural traditions as well as their historic educational backgrounds. For example, continental European countries that have very strong cultural heritages, and their educational systems do not readily adapt to external influences. A classic example of this is Germany. On the other hand, countries that have a short history of national independence more quickly adopt the direction of external influences. A classic example of this is Finland and its higher education system.

Ukraine has an extremely short history of national independence and faces many challenges.

The Ukrainian university system, like those in Germany and Finland, is currently in the process of sometimes radical reforms in the interests of joining the European Higher Education Area. In Ukraine, we have many challenges in achieving the objectives of the Bologna reforms. We are aware that we must expend great effort to realize its positive goals, but we accept that Ukraine has no alternative but to be integrated into the European higher education space.

Historically, Ukrainian lands were divided between foreign powers. As a result, different systems of education existed in different regions, established by corresponding governments. After World War II, Ukrainian lands were united within a single administrative unit as part of the USSR.

Education was strictly controlled by central Soviet authorities, and independent development was impossible. Only after achieving national independence in 1991 could an independent Ukrainian system of education begin development.

Changes in higher education in 1990's Ukraine–within the context of global higher education trends and social challenges – include the following: establishment of governing bodies in education for the new state; curricular revision; introduction of a multi-level system of higher education; development of a network of higher education institutions; expansion of fees in higher education institutions; and "massification" of higher education [3].

The establishment of the national higher education system is based on a new legislative mandate. It provides for an entirely new level of training quality, an increase in academic and professional mobility of graduates, greater openness, democratic principles of teaching, and the accession of Ukraine's higher education system into the world's higher education spaces.

The Constitution of Ukraine (1996), the Law on Education (1996), the Law on Higher Education (2002), and the new Law on Higher Education (2014) constitute the legal framework for Ukrainian higher education. The Ukrainian legislation regulating higher education also includes decrees of and regulations established by the President and the Cabinet of Ministers of Ukraine.

Higher education is perceived by Ukrainians as a way to achieve professional distinction, economic independence, and freedom. Current Ukrainian high school graduates frequently choose a university with a competitive field of study, affordable international outreach programs, quality international credentials, and strong international partnerships.

Since 2005, Ukraine has joined the Bologna Process, which aims to unify the criteria for higher education, to make student academic mobility more accessible.

The **Bologna Process**, launched with the Bologna Declaration of 1999, is one of the main voluntary processes at European level, as it is nowadays implemented in 49 States, which define the **European Higher Education Area (EHEA)**.

After signing the Bologna Declaration in 2005, Ukraine became part of the renewal process. This took place on June 19–20, 2005 at the Fourth Summit of the Bologna Process in Bergen, Norway.

Joining the Bologna Declaration unquestionably represented a positive step toward integrating Ukrainian education into the European Higher Education Area. The education system is assumed to contribute significantly to the integration of Ukraine into the European Union.

The integration movement of Ukraine into the European Union is the strategic direction of Ukraine's development. The process of European integration is accompanied by the formation of joint educational and scientific spaces and by the development of joint criteria and standards shared throughout Europe. Participation of Ukrainian higher education in the integration processes of the European Higher Education Area and in the Bologna transformations are aimed at acquiring qualitative changes in its educational structure and university curricula.

As Antoniuk V. pointed, "Integration into the European educational space for Ukraine means: (i) participation of Ukrainian universities in European educational programs; (ii) the raising of Ukrainian higher education to the standards of the European Higher Education Area, the European qualifications framework, and the European Research Area; (iii) adaptation of the main principles of European education to Ukrainian national values; and (iv) creation of an innovative environment in the new social and economic order based on educational and scientific support" [4].

Discussing the goals of the Bologna Process we can point two main purposes of the Bologna reforms:

1) the restructuring of higher education to include a different composition of competences;

2) the internationalization of higher education and mobility.

Restructuring of higher education first involves implementing the Bachelor's/Master's degree system. The adaptation of academic courses to the Bachelor's and Master's degree programs of study in European universities is the most significant result of the Bologna reforms today. The changes resulted in better structured curricula as well as the emergence of new learning opportunities and quick initiation of professional activities.

However, currently in Ukraine, there is a lack of societal recognition of the "Bachelor's" academic qualification level as revealed by the absence of a labor market for its graduates.

Regarding internationalization of higher education and mobility, it is important to keep in mind that these are two inseparable components of a single process. Ukrainian universities consider internationalization as a major tool to drive much needed internal change and improve access to knowledge, research, and funding across borders. Ukraine is attempting to find its own niche internationally.

When Ukrainians mention "internationalization" of higher education, they usually mean "Europeanization." Faculties define internationalization in regional European terms and highlight the importance of sustaining a future-oriented process of enculturating their students in the spirit of a United Europe. Internationalization more particularly means international academic mobility for students and teachers.

There are two separate aspects of student and faculty mobility: intra-European mobility and intercontinental mobility. Within the framework of intra-European mobility there have been few effects. An increase in such mobility has not been as successful as expected under the Bologna

reforms; the recognition of study activities completed abroad remains quite problematic. The idea of mobility can be complicated; as a result, students often minimize their risks by not studying abroad.

In the framework of intercontinental mobility, the introduction of the Bachelor's and Master's degree system was an instrument for attracting students from outside Europe. "Between 1999 and 2007 the number of students from other parts of the world doubled. So, introduction of the Bachelor's and Master's degree system was an instrument for increasing the number of students from outside Europe. In particular, progress has been made in mobility partnerships between the European Union and Ukraine, and indeed Ukrainian students appear to increasingly benefit from this" [6].

The EU promotes mobility programs that provide large numbers of university students and teachers from the EU and other countries with academic experiences outside their home countries.

Among them, the Erasmus Programs are the most important for Ukraine. Tempus in Ukraine has been operating since 1993, and Erasmus Mundus since 2004. Since 2014, Ukrainian universities have been involved in Erasmus+ KA1 and KA2. Further, an important step toward integration into European and global research was Ukraine formally becoming an associate member of the Horizon 2020 Program in March 2015.

So, Joining the Bologna process was a good motivator for Ukraine, given the steps that have already been taken.

Under the Bologna Declaration in 2005, Ukraine committed to significant changes. The most striking result of Bologna has been the adaptation of study courses to the two-cycle Bachelor's/Master's degree study system, the introduction of Bachelor's and Master's level courses as standard degree courses at universities, and the introduction of a PhD degree program at Ukrainian universities. All of these moves have significantly increased the global mobility of Ukrainian scholars whose home status as "candidates of sciences" was never well understood abroad. In 2006/2007, students of Ukrainian universities were integrated into a two-cycle graduate study system that corresponds to Bologna principles. Later in 2014, within the framework of the new Law on Higher Education, two variants of the Master's Program were created: the Master of Academic and Master of Professional specializiations. Within the framework of the new Law on Higher Education, the young specialist degree has been removed and a new bachelor's degree has been introduced as accelerated ways to get an undergraduate degree. The Bologna reform in Ukraine during 2006/2007

Table 1 – Ukrainian higher education structure according to the new Law on Higher Education 2014 [3]

Higher education levels	Higher education degrees, educational documents	Entrance requirements	Study period and load (ESTC credits)	Access to further education	National qualification framework	EHEA Cycles
Academic level (2nd academic degree)	Doctor (Doctor diploma)	PhD diploma			9 level	
Science and research level (1st academic degree)	PhD (PhD diploma)	Master diploma	4 years 30-60 credits	Access to the 2nd academic degree	8 level	III cycle
Master level	Master (Master diploma)	Bachelor diploma	Professional educational program, 90-120 credits / Academic educational program – 120 credits (research part – over 30%)	Access to the 1st academic degree	7 level	II cycle
Master level	Master of Medicine	Secondary school leaving certificate (Atestat)	300-360 credits	Access to the 1st academic degree	7 level	I-II cycle
Bachelor level	Bachelor (Bachelor diploma)	Secondary school leaving certificate (Atestat) / Junior Bachelor diploma	180-240 credits / HEI may transfer credits and shorten the program	Access to Master programs	6 level	I cycle
Short cycle level	Junior Bachelor (Junior Bachelor diploma)	Secondary school leaving certificate (Atestat)	90-120 credits	Access to Bachelor programs	5 level	Short cycle

also led to the introduction of the European Credit Transfer System (ECTS). Assessment points (credits) are now awarded according to ECTS. The introduction of the European Credit Transfer System significantly improved the flexibility and transparency of the learning process. Simultaneously, the Diploma Supplement of the European Standard was implemented. In 2014, the framework of the new Law on Higher Education decreased a university credit hour from 36 hours to 30 hours.

These changes significantly improved the flexibility and transparency of the learning process and, accordingly, achieved greater international academic mobility for students. The changes enabled Ukrainian students to study abroad without suffering academically [5].

International students were also encouraged to study at Ukrainian universities.

In order to increase external academic faculty mobility, Ukrainian universities began:

(i) signing bilateral agreements on staff exchanges;

(ii) creating joint training programs for specialists with leading European universities; and

(iii) carrying out joint scientific programs with leading European universities.

Another important component of international academic mobility is partnerships that create opportunities for joint research; these allow Ukrainian universities to respond to the new context of competition on a global scale, boosting employability of graduates and attracting both research partners and external funding. Therefore, higher education reforms relate to deep fundamentals of Ukrainian education and science, as well as to increasing the integration of national science and education with European and other global higher education spaces.

On the other hand, the internationalization of higher education in Ukraine continues to be vulnerable to the political context of Ukraine and tensions of the region's geopolitics. The Revolution of Dignity during 2013–2014 and the ongoing military conflict in Eastern Ukraine provide new avenues for the renewal process due to the evolving public approaches to social issues and challenges along the path of national advancement.

Despite these dramatic developments, however, on July 1st, 2014, Ukrainian President Petro Poroshenko signed the new Law on Higher Education, which set the stage for Ukrainian higher education to better respond to international opportunities.

The new Law on Higher Education 2014:

(i)　aligns with the requirements of Bologna for the country to integrate into the European Higher Education Area;

(ii)　enables universities to act with greater autonomy;

(iii) promotes decentralized decision-making and responsibility for reputation;

(iv) establishes anti-plagiarism norms and liabilities for academic dishonesty; and

(v)　established the National Quality Assurance Agency [7].

The new higher education Law of Ukraine, in providing an opportunity for systemic modernization of higher education in Ukraine, is viewed as "one of the first systemic reforms that in fact draws Ukraine closer to integration with Europe" [3].

One point upon which everyone agrees is that the law sends a very important political message to the public and officials in higher education.

Also, under the new law, Ukrainian universities are expected to intensify research capacity and production. As global rankings remain an important component of the public face of a university, the quality of research and number of publications by faculty members in reputable, peer-reviewed journals is increasingly important to the viability of an institution.

Also, it is important to emphasize that, upon fully realizing the importance of higher education, Ukraine introduced a new student assessment system over the past decade. Since 2008, all high school graduates wishing to enter university have had to take the External Independent Test.

This was a fundamental shift from the Soviet legacy of corrupt university admission exams; they have now been replaced with an objective testing procedure. The main aims of the External Independent Test were to combat corruption, increase equal opportunity, provide equal access to tertiary education, and create a national assessment system to monitor educational quality.

Under the new Law on Higher Education 2014, the higher education structure of Ukraine has been transformed. Today, Ukrainian higher education institutions provide the following levels of higher education: Junior Bachelor, Bachelor's, Master's, Doctor of Philosophy (first level research degree), and Doctor of Sciences (second level research degree).

The second direction of the European higher education reform strategy is in educational management and governance. The reform in education management and governance is important for further development of the higher education system in Europe. It may be considered a "silent" revolution in the higher education system. Today, management and governance are the major factors influencing the development of higher education.

The framework for the transformation of management and governance structures may be defined by the following three aspects:

1. Criteria for recognition of academic achievements:

Traditionally, criteria comprised academic reputation and outstanding publications. Today, new criteria include the amount of research grants and other monies obtained, the number of scientific articles published, the number of successful students produced, and the number of the doctoral students supervised.

2. New internal governance models:

A new type of governance within institutions has been introduced between top university management, faculty-level management, and individual professors. This new concept of a managerial university includes an agreement between the University and professor, which defines levels of targets, a new "type" of State–University relationship, and the emergence of a contract between the State and the institution which includes provisions for the development of a plan, budget, and structure of institutions.

3. New assessment and accreditation institutions (Agencies):

Changes in assessment and accreditation of new courses, with new Bachelor's and Master's programs providing external quality control and management.

The new model for educational management and governance embraces six key strategies:

deregulation of state control in favor of greater autonomy;

re-distribution of influence from academic oligarchy to university management;

transformation of a uniform system into a more differentiated, competition-, and market-oriented system;

strengthening the specific missions of institutions and improving program quality and flexibility in the provision and organization of studies according to the needs of a body of diverse students;

improving the outcomes of higher education;

and raising international competitiveness and the reputation of higher education.

Within this framework of further development of the mechanism for equal access to higher education, Ukraine worked out a new mechanism of electronic admission for universities and automatic placement according to state directives.

Also, universities have been granted the right to manage their own revenues from education, research, and academic activities.

According to the new Law on Higher Education in Ukraine, within the framework of development of academic and financial autonomy of higher education institutions, Ukraine has worked out new mechanisms for rectors' elections.

The duration of service for rectors, deans, and department heads is now a maximum of two terms (5+5 years).

Also under the new Law on Higher Education, Heads of HEIs will manage all aspects of the HEI: this includes their financial and business operations, structure and staffing, performance, the healthy lifestyle of students, and ensuring open and effective public monitoring of the HEI.

HEI Heads will be accountable for their institution's education, research, and innovation activities, as well as financial and business performance.

According to the new Law on Higher Education in Ukraine, within the framework of developing the National Quality Assurance system for higher education and in compliance with the European Standards and Guidelines for Quality Assurance, Ukraine has established a separate governmental unit called the National Quality Assurance Agency. The following is an examination of what has already been accomplished in Ukraine within the framework of reforms in educational management and governance.

The National Quality Assurance Agency is an authority established by the Ukrainian government to ensure quality higher education across the country. It is a permanent collegial body authorized to implement state educational policies.

The Agency will be responsible for the following:

development of regulations on accreditation of educational programs;

license confirmation; and

establishing criteria for adherence to standards and guidelines of the European Higher Education Area.

The Ukrainian National Quality Assurance Agency aims to become eligible for membership in the European Quality Assurance Register for Higher Education.

The current global challenges for Ukraine's education and science

Despite the existence of numerous scientific works devoted to various aspects of the European integration processes of Ukrainian education and science, today it is also important to study this issue in the context of the current global challenges, namely in view of the large-scale russian invasion of the territory of independent Ukraine.

A well-known Latin proverb says: "a friend in need is a friend indeed". It is true that when russia's full-scale unprovoked armed aggression against Ukraine began, Ukrainians realized that they were not alone, but an important member of the European family.

For instance, huge support had been provided to thousands of Ukrainian refugee students and their basic needs had been met, among which the right to education played an equally important role.

Thus, thousands of Ukrainian children gained access to quality educational services (at the beginning of March 2022, there were nearly 700,000 forcibly displaced school-age students abroad). At the same time, a large number of teaching staff and researchers were forced to leave for safer places abroad.

The educational infrastructure of Ukraine has suffered and continues to endure massive destruction.

Thus, 3798 educational institutions were damaged by bombing and shelling, and at least 365 of them were completely destroyed during the 2-year of the aggressor's invasion of Ukraine.

The greatest destruction of the educational infrastructure was recorded in the territories in the eastern, south-eastern and north-eastern parts of Ukraine. In these difficult conditions of the russian-Ukrainian war, the Ministry of Education and Science of Ukraine (MESU), as the central executive body responsible to society for the sustainable and innovative development of the education and science system of Ukraine at the national, European and global levels, has done and continues to do everything possible to organize the continuity and safety of the educational process for Ukrainian pupils and students on the territory of Ukraine, as well as for all refugee students abroad.

For this reason, a series of online meetings were organized with European Ministers of Education to discuss priority steps for assistance to Ukraine, during which the parties discussed the following issues:

• provision of educational services to forcibly evacuated citizens of Ukraine, creation of the necessary conditions for distance learning on the Ukrainian curricula (e.g., All-Ukrainian Online School platform);

• integration of Ukrainian refugee students into the education system of European countries, in particular, the opportunity to enroll acquired knowledge, skills, assessments and mutual recognition in the education systems of the EU and Ukraine;

• psychological support and socialization of students in EU countries;

• organization of temporary examination locations for the basic and additional sessions of the national multi-subject test within the admission campaign for the 2022/23 school year;

• directions for diversification of financial instruments of assistance to the Ukrainian education system, as well as strengthening cooperation and participation in joint international scientific projects;

• implementation of student academic exchange and mobility programs, etc.

Another important topic of bilateral meetings was the termination of cooperation with russian organizations in the field of research, science and innovation, in which Europe confirmed its absolute agreement with Ukraine.

Against the background of the fullscale russian invasion of Ukraine, European partners offer modern European tools to support Ukrainian schoolchildren, students, teachers, scientists and all staff of science and education, in particular:

• European Commission launched the **ERA**4**Ukraine portal** to provide information and support services to Ukrainian scientists forced to go abroad due to the war. The portal brings together initiatives at the level of the EU, individual countries and nongovernmental organizations. The portal provides information on recognition of diplomas, current vacancies, social assistance, housing offers for scientists and their families, etc.;

• **Science**4**Refugees** and the EURAXESS portal provide refugee research internships, part-time and full-time jobs, and access to the European Research Community. Ukrainian researchers have the right to take advantage of the initiative Science4Refugees without the need to have refugee status;

• Ukrainian institutions are granted free access to full-text electronic resources available within the Research4Life project (in particular, Dimensions – a scientometric platform from the "Digital Science" company, Scopus – one of the largest referral databases of scientific citations from the "Elsevier" company, ProQuest Dissertations & Theses Global (PQDT) – the world's most comprehensive collection of multidisciplinary dissertations and theses from the company "ProQuest"). During the War, more than 500 Ukrainian institutions exercised their right and registered on this resource,

while the number of databases on the Research4Life platform for Ukrainian researches increased to 40;

• Council of Europe has created a special page for the adaptation of Ukrainians to European educational standards "Education in time of crisis". Language learning, recognition of qualifications and training are among the main tools that facilitate the integration of migrants and refugees from Ukraine;

• European Center for Modern Languages at the Council of Europe has created a website to support the linguistic integration of immigrants from Ukraine. The site presents tools for children's adaptation to the new environment and schools. Some materials were developed specifically for the new realities that arose as a result of the aggression of the russian federation on the territory of Ukraine; others are adapted from a toolkit for adults developed within the Council of Europe's Linguistic Integration of Adult Migrants (LIAM) project.

During the full-scale russian invasion of the territory of Ukraine, the question of creating an educational space friendly to children and adults arose. Thus, on the initiative of the MESU, the Institute of Education Content Modernization and the Association of Innovative and Digital Education, the project of Ukrainian Educational Hubs was implemented, which realizes the concept of Life Long Learning for the human capital development of Ukraine.

The project aims to educate children and adults for successful careers. It should be noted that the project shares the principles of the global initiative of the World Bank "Human Capital Development Project". Educational hubs offer, among other things, the opportunity to study IT and working professions, acquire the most demanded skills for professional growth, improve Ukrainian and English languages, receive psychological support, etc.

As of April 2024, 25 hubs, of which 11 are located in Ukraine, 13 in the EU and one in the UK, have already been successfully operating. The functioning of hubs within Ukraine and abroad, in addition to stated purposes, has also certain regional features. Educational hubs located in the territory of Ukraine, primarily designed to help Ukrainians realize their potential in their own country and stop the massive outflow of Ukrainian citizens abroad. Educational hubs, depending on the characteristics of the countries and the needs of the refugees, also have certain characteristics, but one of the main tasks of these centers is also to prevent the gap between the Ukrainian refugees and their homeland, education and social and cultural

activities. The expansion of the network of educational hubs is continuing and new locations are expected to open soon.

An important component of the process of Ukraine's integration into the European educational research and innovation space is the digital component. In conditions of war, it was important to provide uninterrupted functioning of the software and technological complexes and local educational databases in the field of education and research.

On the initiative of the MESU, the Directorate of Science and Innovation of the MESU, and the State Scientific and Technical Library of Ukraine, in August 2022, the beta version of the national "Ukrainian Research Information System" (URIS system) was presented. The URIS system is a new multifunctional information and telecommunication platform that provides collection, formation, processing, storage, use of data and information in the field of scientific and technical activities of Ukraine, as well as automation of procedures and processes of interaction of subjects and users of the system

Among the main functions of the URIS system is the aggregation of data on the sphere of scientific and technical activity of Ukraine; data integration, its presentation and provision of analytical tools for users to explore it; aggregation of information useful for domestic scientists, employees of scientific institutions and HEIs on a single platform, etc.

Specific support for Ukrainian research and innovation

Financial assistance from international partners is no less important instrument to support Ukrainian R&D under martial law. Thus, in March 2022, the United Nations global fund for education – the ECW ("Education Cannot Wait") Foundation approved a $5 million grant "First Emergency Response" to meet critical education needs as a result of russian invasion.

Another example of financial assistance is the redistribution of funds for 2023 within the implementation of the Erasmus+: 200 million euros from the budget of this program for 2021–2027 will be redistributed to support Ukrainian students and teachers, and 25 million euros – for scholarships for Ukrainian researchers due to a new initiative led by the Marie Skłodowska-Curie Actions, which will allow 200 researchers to continue their research for two years at the university of the EU member state or a country that is an Associated Country for Horizon Europe.

On 9 June 2022, the Agreement associating Ukraine to Horizon Europe, the EU research and innovation programme (2021–2027), and to the

Euratom Research and Training Programme (2021–2025) entered into force. The Ukrainian research and innovation actors can fully participate in these programmes on equal terms with entities from the EU Member States.

Ukraine does not have to contribute financially for the present and there is a general encouragement across the Horizon Europe Work Programme to create opportunities, where possible, for the affected persons and entities of Ukraine.

In addition, the EU offered dedicated tangible support to the Ukrainian research and innovation community. Among dedicated initiatives we can point:

• MSCA4Ukraine (€25 million) offered fellowships to displaced researchers of Ukraine in the EU and Associated Countries.

• EIC4Ukraine (€20 million) offers financial support and advice to deep tech start-ups

• ERC4Ukraine has over 500 vacancies linked to ERC grants available (still opened)

• Research Infrastructure (RI) service providers in health, green, digital and frontier knowledge are encouraged to offer fast-track access to Ukrainian researchers

• EU Mission for Climate Neutral and Smart Cities: €5 million action will support peer-to-peer cooperation with the Ukrainian cities to help them integrate climate neutrality in local recovery plans

• Human Frontier Science Program for health scientists from Ukraine

• Call on Political perspectives for the Eastern Neighbourhood and Western Balkans required the participation of at least one entity from Ukraine, Georgia or Moldova

• Excellence Hubs Initiative: Ukrainian entities encouraged to apply for 'mentoring scheme' on innovation [8].

Challenges

Many challenges exist in Ukraine in achieving the objectives of higher education reform. However, it is important to emphasize that Ukraine has no alternative but to be integrated into Bologna process and the European higher education space. Reforms are taking a long time to have any effect. There is a great deal to do in order to make the positive goals of the Bologna reforms a reality. Ukrainian universities are only minimally represented on the leading international ranking lists. This situation serves as evidence of the low competitiveness of Ukrainian higher education institutions

Other challenges include the following: low performance and publication rates of Ukrainian scientists; lack of societal recognition of the Bachelor's degree as a qualification level; complexity of the Ukrainian system of scientific degrees compared to the system in Europe; difficulties in implementing the results of research into higher education processes; problems with establishing contacts between Ukrainian and European universities and, in this context, the issue of implementation of Joint Programmes and Joint Degrees; modernization of the system of quality control; and the gap between education and the labor market.

On the basis of the materials of this lecture we have pointed **some proposals** that will contribute to the European integration of Ukrainian education and science, in particular:

continuation of the initiated reforms in the field of education and science of Ukraine based on the best European experience;

raising the level of English language proficiency and digital skills of students and teachers;

development of a network of educational hubs both within Ukraine and abroad;

attraction of foreign investments in reconstruction of damaged educational infrastructure;

updating of the roadmap for the integration of the scientific and innovative system of Ukraine into the European Research Area;

strengthening international cooperation and increasing the participation of Ukrainian scientists in EU research and innovation programs (e.g., Erasmus, Horizon Europe etc.);

commercialization of intellectual property and intensification of cooperation between science and business;

increasing the publication activity of Ukrainian researches in scientific journals, which are included to the Scopus and Web of Science databases, etc.

It is also important to take into account the need for psychological assistance to participants in the educational process both during hostilities and after the war. At the same time, it is important that the Ukrainian education and science system, in the process of European integration, preserve its unique features, including a rich cultural and historical heritage. Therefore, regardless of the unprecedented cruelty of the russian aggressors towards the Ukrainian people, these events have led to the acceleration of the processes of integration of Ukraine into the European educational and innovative space, strengthening the harmonization of Ukrainian legislation

with EU directives, increasing the number of international grants and cooperation between Ukraine and Europe. The EU fully supports Ukraine and has already taken important steps, including financial support for the development of the national education and science system.

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