GREAT TRANSFORMATION PROGRAM

EDUCATION 4.0: UKRAINIAN SUNRISE

During the war and after the Victory
1. INDUSTRY 4.0 – EDUCATION 4.0

2. CHALLENGES AND OPPORTUNITIES

3. BASIC TERMS OF TRANSFORMATION

4. THE PROGRAM OF GREAT TRANSFORMATION "EDUCATION 4.0: UKRAINIAN SUNRISE"

5. HARMONIZATION OF THE NATIONAL AND EUROPEAN EDUCATIONAL AREAS
INDUSTRY EDUCATION 4.0
"EDUCATION 4.0 is education, which meets the human resources requirements IN dustries 4.0, where people and technologies are united for opening new opportunities”

(Anealka Aziz Hussin, Education 4.0 Made Simple: Ideas For Teaching, International Journal of Education & Literacy Studies)
THE PROGRAM OF GREAT TRANSFORMATION

EDUCATION 4.0: UKRAINIAN SUNRISE.

We are not catching up, we are working ahead of time!

EDUCATION 1.0
CONVEYING KNOWLEDGE FROM A TEACHER TO A STUDENT

EDUCATION 2.0
INTERACTION IN SUBSYSTEMS
TEACHER - STUDENTS - CONTENT BASED UPON COMMUNICATION, PARTICIPATION, COOPERATION

EDUCATION 3.0
SELF-EDUCATION BASED ON FREE CONTENT, INNOVATION AND CREATIVITY WHEN THE TEACHER IS A COORDINATOR OR PROCESS MANAGER

EDUCATION 4.0
INDIVIDUAL MULTIMODEL LONGLIFE EDUCATION BASED UPON PERSONALIZED CONTENT, WHEN THE TEACHER IS A MENTOR AMONGST THE STUDENTS

Source: Forbes, 2022
FRAMEWORK PROGRAM “EDUCATION 4.0” OF WORLD ECONOMIC FORUM

CONTENT (BUILT-IN SKILLS ADAPTATION MECHANISMS)

- Global citizenship skills
- Innovative and creative skills
- Technological skills
- Interpersonal communication skills

EXPERIENCE (APPLYING INNOVATIVE PEDAGOGY)

- Individual and independent studying
- Accessible and inclusive studying
- Problematic and common studying
- Longlife studying student-centered teaching

Source: World Economic Forum, 2020

CONTENT OF EDUCATION 4.0

Every:
- $1 invested in education gives $2.5-5.0 additional gross lifetime income
- additional year of education increases lifetime earnings by 9-15%

(Source: World Economic Forum, 2022)
CHALLENGES AND OPPORTUNITIES
# Challenges and Opportunities in the Field of Education

## Challenges

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<tr>
<th>Challenge</th>
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<tr>
<td>COVID-19</td>
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<td>Unequal opportunities in different countries</td>
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<td>The advent of 4IR</td>
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## Opportunities

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<tr>
<td>New knowledge assessment approaches. Knowledge assessment as a part of training, not a control of results</td>
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<td>New technologies for studying. Technologies do not replace but complement educationist</td>
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<tr>
<td>Expanding opportunities for educators. Investments in educators for all their professional life</td>
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Source: World Economic Forum, 2022

Potential growth of world GDP from investments in the development of only one of the skills formed by EDUCATION 4.0, is evaluated in $2.455 trillion.

(Catalysing EDUCATION 4.0 Investing in the Future of Learning for a Human-Centric Recovery. INSIGHT REPORT MAY 2022. World Economic Forum, 2022)
### CHALLENGES AND OPPORTUNITIES IN THE FIELD OF EDUCATION (UKRAINE)

<table>
<thead>
<tr>
<th>CHALLENGES</th>
<th>OPPORTUNITIES</th>
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<td>Armed invasion of the Russian Federation</td>
<td>Reconstruction of infrastructure according to new standards</td>
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<td>Ruined infrastructure</td>
<td>A new network of educational institutions</td>
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<td>Mass forced migration</td>
<td>Implementation of the NUS reform</td>
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<td>Unfinished programs and reforms</td>
<td>The leap in science and technologies</td>
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<td>COVID-19</td>
<td>Teachers training for EDUCATION 4.0</td>
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<tr>
<td>Unequal opportunities in communities and regions</td>
<td>A new generation of education managers</td>
</tr>
<tr>
<td>The advent of INDUSTRIAL 4.0</td>
<td>Transition to EDUCATION 4.0</td>
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“A country that aspires to be competitive in the modern world, must declare education and science to be the strategic spheres...”

The President of Ukraine
Volodymyr Zelenskyy
BASIC TERMS OF TRANSFORMATION
Ministry of Education and Sciences of Ukraine is not a passive observer, but rather an active participant.
Owing to the financial model, a citizen of Ukraine becomes a subject of educational policy.
PROGRAM OF GREAT TRANSFORMATION “EDUCATION 4.0: UKRAINIAN SUNRISE”
DIGITAL TRANSFORMATION OF EDUCATION AND SCIENCE

DIGITAL EDUCATIONAL INFRASTRUCTURE:
- Access to content without restrictions
- Free internet territory
- A laptop for each teacher
- Digital spaces in every institution
- Working tablets for students

MODERN DIGITAL INSTRUMENTS:
- “All-Ukrainian online school” (+English version)
- Project TEACHER 4.0
- Cloud library for all teachers
- Electronic textbooks, e-registers / daybooks
- Digital skills of teachers according to the EU standard
- Online exams, testing, External Independent Evaluation (ZNO), NMT
- New model of IT education
- Hub of the European cloud of open science

A SINGLE DIGITAL DOCUMENT:
- Digital educational passport (DEP) in “Dnya”
- Electronic document flow
- Big-Data in management processes
- Physical DEP medium for students
- Online entrance campaign

In partnership with the Ministry of Digital Transformation

PURPOSES:
- Development of digital competences
- Digital modernization
- Debureaucratization of education and science

17+ National projects
**PURPOSES:**
- Self-realization of each child
- Early detection of abilities and formation of a future specialist
- Development of the EDUCATION 4.0 system in Ukraine

**27+ National projects**

**150+ Recovery Plan tasks**
PROFESSIONAL EDUCATION

UKRAINIAN CITIZENS GET QUALITY PROFESSIONAL EDUCATION FOLLOWING THEIR OWN TRAJECTORY:
- retraining of P(PT)E institutions teaching staff according to modern programs – 80%
- introduction of online courses – 160+, available on the platform "Professional education online"
- launching short-term professional training programs – 1500+
- updating educational standards for professions – 300

BALANCED AND EFFICIENT NETWORK FOR THE NEEDS OF THE ECONOMY AND COMMUNITIES:
- renovating 100 P(PT)E institutions and 40 dormitories to accommodate the security component
- creation of 12 innovative Centres for Professional Excellence and 200 Partial Skills Training Centres (PTCs)
- expansion of the network of P(PT)E institutions through the reform of Faculty of Postgraduate Education Institutions

EMPLOYEE MOBILITY IN THE LABOR MARKET:
- 100% of P(PT)E institutions should have career development centers
- introduction of a dual form of education and internship programs in at least 50% of P(PT)E institutions with the participation of at least 30% of employers
- opening of 100 qualification centers for professional competencies evaluation

OBJECTIVES:
- Meeting the needs of the economy in qualified personnel after the Victory (builders, farmers, IT workers and technologically sophisticated professions, etc.)
- Rapid entry into the labor market and lifelong education

17+ National projects
55+ Recovery Plan tasks
PROFESSIONAL PRE-HIGHER, HIGHER EDUCATION AND SCIENCE

CREDIBILITY OF EDUCATIONAL, SCIENTIFIC AND EXPERT ACTIVITIES OF THE UNIVERSITY:
- use of digital tools
- formation of European culture and academic integrity
- bringing the level of the minimum salary of a university teacher to the average in the Baltic countries

MODERN NETWORK AND EDUCATIONAL SPACE:
- optimization of universities through their merger and enlargement
- 2 thousand laboratories and classrooms (World Bank project)
- reconstruction of 200 student dormitories (public-private partnership)
- dual education in all universities
- private capital in the ecosystem of 70 universities
- development of university autonomy in line with European standards
- university scholarship programs

INTERNATIONALIZATION OF HIGHER EDUCATION AND SCIENCE OF UKRAINE:
- inclusion of at least 20 Ukrainian universities into the world’s top 1,000 universities
- increase in the number of foreign students in Ukraine up to 200 thousand people Integration into the European educational space, harmonization of educational and scientific legislation and public policy of Ukraine with the EU
- bringing internal education quality assurance systems in line with the “European standards and guidelines”

STATUS, CONDITIONS AND OPPORTUNITIES FOR SCIENTISTS:
- salary (min, €): Candidate of Sciences (PhD) ~ 1000+, Doctors of Sciences ~ 1500+
- research funding: + UAH 531 million (“Horizon Europe”), + 20 million € (EIC for startups)
- access to 27 scientific databases
- scientific mobility for 27 thousand scientists
- increased R&D funding for levels 4-6 on Technology Readiness Level (TRL)
- integration into the European Research Area (ERA)

CUTTING-EDGE INFRASTRUCTURE:
- co-financing by business of 7 innovation parks
- International infrastructure research consortium (Chernobyl Radiation and Ecology Biosphere Reserve)
- National Portal for International Scientific and Technological Cooperation
- Science and Invention program on the basis of universities and research institutes (Ministry of Education and Science + Ministry of Economy)

RESULT FOR THE ECONOMY:
- preservation and enhancement of intellectual potential
- increase in the share of researchers under the age of 40 from 30.7% to 34%
- focus on the post-war development of Ukraine: defense, security, medicine, IT, biotechnology, energy, space, etc.

OBJECTIVES:
- Industrial competitiveness and the development of high-tech production
- Increase of GDP science intensity by 3 times
- Global challenges, cooperation with global scientific community

7+ National Projects
140+ Recovery Plan tasks
LIFELONG EDUCATION

ECOSYSTEM FOR LIFELONG EDUCATION:
- provision of an individual educational trajectory
- formation of a system of individual study accounts (financing of retraining – vouchers, etc.) (EU recommendations concerning individual study accounts)
- support for retraining and advanced training, at the workplace in particular
- introduction of micro-qualifications - recognition of results of short-term training (EU recommendations regarding European course on micro-qualifications and employment improvement)
- forecasting the needs of the labor market in qualifications and development of in-demand skills, including digital and green skills
- support for the development of qualification centers and recognition of the results of non-formal and informal learning on their basis

TRAINING OF VETERANS AND DEMOBILIZED PEOPLE:
- introduction of vouchers for obtaining the first professional or the first higher education for the demobilized people
- providing access to educational programs on social adaptation (online programs in particular)
- providing access to training programs for retraining

EDUCATION FOR AN ACTIVE LIFE IN THE THIRD AGE:
- implementation of the EU recommendations and WHO recommendations on active aging
- development of a network of universities of the third age and educational and leisure hubs (at educational institutions)
- development of intergenerational programs, in particular on teaching digital skills, supporting the employment of elderly people, popular educational programs in the network of educational institutions "Popular History of Ukraine", "Physical Culture without Limits"

PURPOSES:
- Increase of economically active population and sustainable competitiveness of Ukrainian market
- Provision of constitutional rights to education
- Quick response to crises and challenges
- Social integration of individual population groups by formal and non-formal education

4+ National projects
50+ Recovery Plan tasks
PROJECT MAP

UNTIL THE END OF 2022

Implementation of current projects that are crucial for the support of education and science systems in working condition, fulfillment of wartime tasks

2023-2025

Projects aimed at infrastructure development and transformation of the content of education and science, respectively to EU standards and the LUCANO program

2026-2032

Implementation of a package of projects that complete a large transformation of the system of education and science “EDUCATION 4.0: UKRAINIAN SUNRISE”

“The journey of a thousand miles begins with one step…”

Lao Tzu

(“The Tao Te Ching. A book about the way and the power”)

Adoption and amendment of 143+ NPA
HARMONIZATION IN UKRAINIAN AND EUROPEAN EDUCATIONAL AREAS
PAN-EUROPEAN QUALIFICATIONS AREA ENTRY

HARMONIZATION AND DEVELOPMENT OF THE REGULATORY FRAMEWORK:
- the enactment of the National Qualifications System Law
- streamlining of the National Qualifications Framework
- modernization of special laws regarding qualification, taking into consideration European criteria
- developing sector- and industry-specific qualification frameworks
- streamlining the processes for mutually recognizing qualification for regulated professions

UA

EU

PURPOSES:
- Mutual recognition of qualifications between the EU and Ukraine
- Ensuring labor and educational mobility
- Meeting the needs of the local labor market

ESTABLISHMENT OF INSTITUTIONS AND USE OF COMMON TOOLS:
- joining Europass and establishing the National Europass Center
- Launching The National Coordination Center for the European Qualifications Framework
- using ECTS to express various qualification kinds (vocational education, retraining, etc.)
- making the switch to the ESCO program

TRANSPARENCY AND QUALITY ASSURANCE QUALIFICATIONS:
- ensuring the availability of information about qualifications, their comparability, requirements for the assessment of qualifications, qualifications/standards developers, etc., in particular in English.
- developing the Register of Qualifications, taking into consideration European criteria, and joining the Europass platform
- harmonizing the requirements for the development and use of professional and educational standards.
HARMONIZATION IN UKRAINIAN AND EUROPEAN EDUCATION AND SCIENCE SYSTEMS

INDUSTRY 4.0

EDUCATION 4.0

10 years, a sufficient budget and efficient work transform Ukraine into an advanced educational and scientific hub of the European Union of 4E4 level

(INDUSTRIAL 4.0 – EDUCATION 4.0)
CREATING THE FUTURE

EDUCATION 4.0: UKRAINIAN SUNRISE