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DIGITIZATION OF EDUCATION: EUROPEAN FORMAT

Introduction. During the last decade, the transition to digital education has become one of the main policy issues of the European Union. The importance of responding to the challenges facing higher education lecturers in the digital world has become apparent.

Problem. The unprecedented transition to online learning caused by the COVID-19 pandemic has shown the real unpreparedness of the EU education system for a full transition to online education and demonstrated the main policy weaknesses that need to be eliminated.

Methods. General scientific methods are applied: analysis and synthesis, comparison, generalization, analytical and statistical.

Results. The Digital education action plan 2021–2027 of the European Commission stated that digital competences should be among the core skills for all educators and training staff. In its Conclusion,

ЦИФРОВІЗАЦІЯ ОСВІТИ: ЄВРОПЕЙСЬКИЙ ФОРМАТ

Вступ. Протягом останнього десятиліття перехід на цифрову освіту став одним з головних питань політики Європейського Союзу. Важливість реагування на виклики, з якими стикаються викладачі закладів вищої освіти у цифровому світі, – очевидна.

Проблема. Безпрецедентний перехід до онлайн-навчання, спричинений пандемією COVID-19, показав реальну неготовність освітньої системи ЄС до повного переходу на веб-освіту та продемонстрував основні недоліки політики, які необхідно усунути.

Методи. Застосовано загальнонаукові методи: аналіз і синтез, порівняння, узагальнення, аналітичні та статистичні.

Результати. У Плані дій Європейської комісії з цифрової освіти на 2021–2027 рр. зазначено, що цифрові компетенції мають бути одними з основних навичок для всіх викладачів

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the Council of the European Union confirmed the importance of digital competences of teachers. In its Resolution, the European Parliament stressed the importance of providing financial support for training courses and making them accessible to ensure that teachers possess the necessary digital skills. The EUA emphasized the importance of actions of the governments of EU member-states as the main policy developers at the national level to ensure the financial and professional support for universities staff.

Conclusions. Only the urgent transition to online learning, caused by the total closure of educational institutions of all levels during Covid-19, showed the real state of the EU digital education system and clarified the main problems that EU policy makers have to solve. Two strategic priorities have been identified that should be promoted at the EU level: promoting the development of a highly effective digital education ecosystem and enhancing digital skills and competences for the digital transformation.

Keywords: e-education, digital education, digital education action plan, digital competences, European union.

та навчального персоналу. Рада ЄС у своєму Висновку підтвердила важливість цифрових компетенцій викладачів. Європейський парламент у своїй резолюції підкреслив важливість надання фінансової підтримки для навчальних курсів і забезпечення їх доступності, щоб гарантувати, що викладачі володіють необхідними цифровими навичками. Європейська асоціація університетів наголосила на важливості дій урядів країн – членів ЄС як головних розробників політики на національному рівні щодо забезпечення фінансової та професійної підтримки персоналу університетів.

Висновки. Лише терміновий перехід до онлайн-навчання, викликаний повним закриттям освітніх закладів усіх рівнів під час COVID-19, показав реальний стан системи цифрової освіти в ЄС та з'ясував основні проблеми, які мають вирішувати політики ЄС. Визначено два стратегічні пріоритети, які варто просувати на рівні ЄС: сприяння розвитку високоєфективної екосистеми цифрової освіти та підвищення цифрових навичок і компетенцій для цифрової трансформації.

Ключові слова: електронна освіта, цифрова освіта, план дій цифрової освіти, цифрові компетенції, Європейський Союз.

JEL Classification: J21, J23, P36.

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Introduction. Digital transformation in education is a comprehensive work based on building digital ecosystem solutions in education and science which include creation of secure digital educational environment, providing the necessary digital infrastructure of educational institutions, increasing digital competence of teaching staff and students, digital transformation of educational processes and services.

In its overview [1] of digital transition the European University Association (EUA) stated «The digital transition is influencing large parts of society, including universities. Digital communication, the sharing of data and information, digitally enhanced learning, and teaching, as well as research, digital skills and many other topics are high on universities' agendas.»

Problem. The global lockdown caused by COVID-19 pandemic in March 2020 resulted in the closure of education institutions all over the world. The COVID-19 crisis put the world in a situation where there was little choice but use digital technologies to provide education and training [2]. Digitally enhanced learning and teaching has increased during the pandemic with universities quickly pivoting to remote learning [1].

Although digital technologies enabled many pupils, students, and adult learners to continue learning, it also proved a major barrier when access, equipment, connectivity, or skills were lacking. Many Member States experienced shortcomings in the system and a widespread lack of digital readiness [2].

According to UNESCO research [3], nearly 1.6 billion learners in more than 190 countries – 94 % of the global learner population – were affected by the closure of education and training institutions at the height of the *COVID-19* crisis. According to European commission [4] only 39 % of EU teachers were totally ready to shift for the remote learning and use digital technologies in their professional activity.

The *COVID-19* crisis required to rethink how education and training, in all disciplines, are designed and provided to meet the demands of a rapidly changing and increasingly digital world [5]. The importance to respond to the challenges the tertiary educators face in digital world, the necessity to ensure their digital skills and competences development, the significance of materials copyright and ownership insurance were obvious.

Analysis of recent research and publications. Over the past decades, many initiatives and investments have been undertaken in high education digital skills development in the European Union: improvement and modernization of education [4], shaping of the future of European Education area by 2025 [6], renewing EU agenda for higher education [7]. Finally, in 2018 the EU framework for digital education was set in the first Digital Education Action Plan 2018–2020 [2] as an integral part of the European Education Area. The initiatives were often short-lived or limited in scale and had marginal impact at educational system levels possibly because the need for digitalization was not understood.

In Ukraine the problem of digital education and e-learning also attained an unprecedented significance among the scientific communities after the *COVID-19* lockdown. The questions of improving distance learning in higher education in the context of pandemic were considered in the articles of A. Oleshko and S. Bondarenko [8], V. Bakirov and M. Ogarkov [9], N. Prytul'ska, T. Bozhko and S. Kaminskyi [10].

The aim of the study is to carry out an in-depth analysis of the latest steps and developments of the European Union in resetting education for the digital age.

Methods. General scientific methods of analysis and synthesis, comparison, generalisation, as well as analytical and statistical methods to assess the EU approach to the digitalization of education were applied in the study.

Results. The need for a new Action Plan, based on the first Digital Education Action Plan (DEAP) was expressed in the Political Guidelines [11] of European Commission President, President Ursula von der Leyen, in July 2019. She stressed that the best investment is the EU citizens education and skills development that would «drive Europe's

competitiveness and innovation». Nevertheless, Europe was not yet totally ready to shift to digital education, Ursula von der Leyen ensured to use all tools and funds available to commit to «making the European Education Area a reality by 2025» [2]. It was also stated that the barriers to access the quality education should be brought down, the mobility and lifelong learning should be ensured.

To better face the new challenges raised before EU educational system by *COVID-19* lockdown and urgent switch to online learning, the European Commission carried out the analysis of outcomes of the first DEAP 2018–2020.

The 2018 DEAP focused on formal education (primary and secondary schools, VET, and higher education) and covered three priority areas:

- making better use of digital technology for teaching and learning;
- digital competences and skills development;
- improving education through better data analysis and foresight.

According to the Communication of the European Commission [4] the 2018 Digital education Action Plan played an important role in bringing together existing and new EU initiatives within one framework and coordinating the overall approach to technology in education and digital competence development. It triggered discussion and influenced policy more widely across Europe. Its implementation boosted cooperation and dialogue on digital education. Mainly, the first DEAP focused on using digital technologies to respond to changing labour market needs [2].

In 2019 the EUA published its research [1] on the role of universities in the digital transformation, emphasizing on the fact that «new technologies will spread widely in society and the graduates without the necessary skills to use the technologies of tomorrow’s labour market will not be able to get a job».

The spread of *COVID-19* all over the world caused the restrictions of most EU countries to access to buildings and campuses of schools, universities and other centers of education and training, as part of their measures to slow down the spread of the virus [13]. It appeared a real test of the DEAP 2018 effectiveness and the readiness of all the players in the field of education to switch to the remote learning.

The numerous research on the higher education’s impacts and lessons from the *COVID-19* crisis showed that about 76 million pupils and students in the EU were affected [14], access to and quality of the learning experience varied a lot depending on the availability of infrastructure and devices, the presence of digitally competent educators, including capacity to adapt pedagogical methods and digital content, tools, services and platforms [2].

The UNESCO International commission on the future of education reported [15] that *COVID-19* has brought to the surface weaknesses and vulnerabilities along with positive features of education within our

societies. Among the main challenges to deal with are mentioned the accentuation of inequality, risks caused by privatization of education, and unpreparedness of all parties for a massive shift to digital and distance learning.

The European Expert Network on Economics of Education (EENEE) [16] as well as OECD [17] in their reports on assessment of *COVID-19* impact on education defined that the educational system of the EU was not ready totally shift to online learning as all the students should have a device, internet connection, technical equipment, and experience to receive the course materials. The different level of access to above mentioned facilities of all members of educational process revealed the inequality as the main problem in digital education.

At the same time EENEE [16] states that «in line with the mechanism of self-regulation and metacognition of students, there is little observed impact of the *COVID-19* crisis on learning in higher education». The preparedness to urgently switch to the online learning is proved to be higher at tertiary institutions compared with secondary ones.

From February to September 2020 the European Commission organised the stakeholder' consultations to inform and gather evidence for this initiative. The consultations involved public and private-sector, education and training organisations, research institutions and civil society (*Figure*).

STAKEHOLDERS CONSULTATIONS ON DIGITAL EDUCATION ACTION PLAN



Contributions to Open Public Consultation divided by respondents replying in organisational capacity by category

Contributions to Open Public Consultation divided by respondents replying in personal capacity by category

https://ec.europa.eu/education/sites/default/files/document-library-docs/deap-communication-sept2020_en.pdf

Figure. DEAP 2021–2027 stakeholders’ consultation structure [5]

As a result of stakeholders’ consultation, it was revealed [7] that the education authorities highlighted the need to learn from the *COVID-19* crisis, stressed the importance of the Member states' experience exchange on implementation of different educational approaches, identifying their strengths and weaknesses. The crisis has increased the need to boost the digital skills of educators with the elaboration of practical guidelines for educational institutions at EU level. The importance of strategic and consistent approach by the EU on digital education was highlighted [5].

According to respondents on DEAP [5], action at EU level should support professional development for teachers; guidance on digital education; enhance Member States' efforts to improve connectivity and infrastructure, provide support to education and training institutions for the development of digital education strategies and specific measures for disadvantaged groups.

Respondents from several Member States consider it essential to invest in infrastructure, digital skills, digital literacy, and secure online environments (platforms/ tools) with high-quality content. Respondents said that educational institutions should do this by making the most of innovative solutions offered by private education providers and technology developers

Having taken into consideration the results of consultations, on September 30, 2020, the European Commission issued its Communication «Digital Education Action Plan 2021-27 «Resetting education and training for the digital age» that was a collegial work led by Directorate-General for Education, Youth, Sport and Culture of the European Commission.

According to the Communication [2] the European Union should ambitiously address the opportunities and challenges of digital transformation in education. The two strategic priorities to be taken forward at the EU level were defined:

- fostering the development of a high performing digital education ecosystem;
- enhancing digital skills and competences for the digital transformation.

It is stated [5] that digital competence should be a core skill for all educators and training staff and should be embedded in all areas of teacher professional development.

In December 2020 the Council of the European Union issued its Conclusions [18] on digital education in Europe's knowledge societies noting that the European Commission has published a renewed Digital Education Action Plan 2021–2027 [5], which should be followed-up in a co-creative process with the Member States, where appropriate and relevant.

The Council also stated that «digital competences and adequate pedagogical approaches are needed for teachers, trainers, educators and other pedagogical staff and learners of all ages in all types and levels of education and training to make meaningful use of digital technologies in education. The provision of digital competences should be age- and gender-sensitive and should also cover media, digital and data literacy, critical thinking, and the fight against mis- and disinformation, hateful and harmful speech, and cyberbullying and addiction, and address security issues such as the protection of privacy, data protection and intellectual property rights».

The Council [18] invited the Member states, in accordance with national circumstances:

- to reflect on pedagogical models and the education and training of teachers, trainers and educators and other pedagogical staff in order to better take advantage of the various opportunities offered by digital education technologies;
- to enable and motivate teachers, trainers and educators and other pedagogical staff, such as teacher trainers to undertake initial and continuous professional development to develop and improve their own digital skills and competences and basic knowledge of information and communications technology (ICT) to a level that enables them to work confidently with digital education technologies and to deliver high quality education and training.

On March 25, 2021, the European Parliament (EP) issued Resolution on shaping digital education policy (2020/2135(INI) [19]. The document reflected the position of the EP on digital education policy, in particular after the *COVID-19* pandemic, and welcomed the Digital Education Action Plan [5], its ambition, expanded scope beyond formal education.

The European parliament admitted that «inclusive, equitable and properly funded quality education is a key driver of the green and digital transitions and represents an investment in our common future, contributing to social cohesion, sustainable economic growth, job creation and employment and thereby to a fair a society».

In its Resolution the EP stated that whereas the content of teaching and the education systems structuring is a national competence, new challenges nevertheless call for effective coordination, and the appropriate European Union digital education policies and tools is an important dimension of the European Education Area.

The European Parliament believes that embracing and maximising the potential of digital technologies must go together with modernising existing curricula and learning and teaching methods and stresses in this regard the importance of providing financial support for training courses designed for teachers. It insists, that greater attention be devoted to accessible teacher training to ensure that teachers and educators not only possess digital skills but can also teach them.

The EP also encourages, in this regard, investments in specialisation courses in digital teaching skills for teachers and stresses the essential role of Erasmus+ and teacher mobility for the acquisition of skills. It notes the potential of the future Teacher Academy and calls on the European Commission to present to the Parliament a clear concept and budget. The EP calls for a pan Union initiative to develop new pedagogical and assessment methods for the digital environment, recognising specific digital challenges such as asynchronous learning and the importance of fostering critical engagement.

In respond to the suggestion of the European Commission for ‘active involvement of the Committee of the Regions and local authorities’ in the implementation of high-performing digital education ecosystem and fostering digital skills and competences for the digital transformation, the Committee issued on May 7th, 2021, its Opinion [20] on the Digital education action plan 2021–2027.

The Committee in its Opinion called for direct public funding aimed at the development of new teaching models and promoting 21st century skills at all education levels, from school to university, as well as at further simplifying the structure of EU funding programs.

The Committee suggested that teacher training models across the European Union should be harmonized through enhanced co-operation among the universities and teacher training centers. Furthermore, it urged for the creation of physical «hubs» in university cities so that «teachers across the education system can avail of in-service and quality continuing professional development».

In January 2021 the EUA published the report [21] describing the situation regarding digitally enhanced learning and teaching (DELT) at European higher education institutions mainly based on data from a survey conducted between April and June 2020. Among the main enablers for digital learning and training, staff training achieved the second highest rating. As the concrete challenges, educators referred to the pressure on research achievement and lack of protection from overly high workload resulting from digitalisation that often resulted in cancellation of plans for curriculum reform and staff development.

During the preparation of the Digital Education Action Plan (2021–2027), extensive stakeholder consultations carried out by the European Commission highlighted the need for strengthened cooperation between relevant organizations and the fragmentation of digital education policies. The Digital Education Hub should be a way to address the issues in the field of digital education [22; 23].

According to Communication of the European Commission [5], the European Digital Education Hub (EDEH) should support European Union Member States to exchange experience and good practice on the digital education, link stakeholders, monitor the implementation of the Action Plan and the development of digital education in Europe, share best practices by contributing to research experimentation and the systematic collection and analysis of empirical evidence, support cross-sector collaboration and new models for the seamless exchange of digital learning content.

The EDEH has been launched in July 2022. To achieve the objectives, the creation of the following communities is foreseen under the EDEH: a community for cooperation on digital education; a network of National Advisory Services (NAS) for cooperating on the implementation of digital education polices and a new Support, Advanced Learning and Training Opportunities (SALTO) resource centre for digital education [22].

In October 2021, the European Commission supported a dialogue within the creation of a network of National Advisory Services working primarily on the implementation of digital education policies. The network aims at promoting the exchange of experiences concerning digital education and ensures cooperation between countries. The preparatory work was launched in 2022 for creation of a new Digital SALTO resource center, which will develop as a resource centre working to support Erasmus National Agencies in the digital dimension of the programme. The National Agency of Finland was appointed for implementing this new network of SALTO, which started its activities from August 2022.

Conclusions. Digital education has already been in the EU policy-making process for more than a decade, but only the full urgent shift to the online learning caused by total closure of educational institutions of all levels during *COVID-19* showed the real state of EU digital education system and figured out the main problems to be addressed by EU policy makers.

The Digital Education Action Plan 2021–2027 of the European Commission sets out a coordinated policy response at EU level promoting high-quality and inclusive digital education, addressing unequal access, and improving connectivity and empowering educators.

It is important to highlight that EU level policy makers mainly focus on students’ digital literacy development and equal accessibility to the learning resources. The EUA stresses that National governments of the Member states as main policy makers on the national level should assess the current digital environment of the MS universities, perform the research of teaching staff readiness to deliver online trainings, uncover main difficulties and needs of educators, enable the possibility, and provide support for educators’ digital literacy development.

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