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Volodymyr Andriyovych Mandragelia

*Ph.D. hab. (Philosophy), professor, professor of Department of Vocational Education, Methodology and Humanities, Bila Tserkva Institute of Continuous Professional Education of State Institution of Higher Education «University of Educational Management» National Academy of Educational Sciences of Ukraine
09108, Kyiv region, Bila Tserkva, str. Levanevsky, 52/4, Ukraine
mandra09@gmail.com ORCID ID: 0000-0003-0807-5309*

EDUCATION SYSTEM AND LABOR MARKET: INTERDEPENDENCE ISSUES

Formulation of the problem. The labor market has recently undergone significant changes under the influence of many factors. Among them are globalization, demographic, migration processes, international conflicts and wars, climate change, epidemics, pandemics, etc. Digitalization and green transit are becoming especially relevant in all spheres of life. This affects the requirements for knowledge and skills of employees who are preparing to receive or change jobs. Therefore, the field of education faces an important task of introducing flexible and effective educational programs.

The purpose of the article. To summarize statistical and analytical information and forecasts regarding changes in education in European countries and Ukraine in the context of the transformation of labor markets and under the influence of the deployment of Industry 4.0.

The main results of the study. The article notes the growth of unemployment among young people on the European continent, which began in the early 1960s. Statistics on education and the unemployment rate in Ukraine, damages from the war that was unleashed by Russia in 2022 are given. The growing role of institutions is especially emphasized professional education and training in the general education system of the countries of the world, blurring the boundaries between secondary special and higher education. Two main trends are highlighted in education: the development of information and communication technologies and increasing the role of transversal skills. Statistics on the level of basic digital skills among citizens of EU member states and initiatives to increase the digital literacy of Europeans are given. The presence of different approaches to the ratio of general theoretical and professional disciplines in different national education systems is emphasized.

Conclusions. The impact on the sphere of education and the labor market of the processes of automation, robotization, and the transition to a green economy remains to be determined. The perspective of introducing integrated approaches in education such as the German "learning fields" (Lernfelder) or the professional "code" in the Finnish system is indicated.

Key words: education, professional education and training, labor market, European Union, Ukraine, digitalization, transversal skills.

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Introduction. Modern radical changes in technologies require new knowledge, skills and abilities from employees. Even greater dynamics will be observed in the future. Jobs in the future may require very different skills than they do today. Scientists predict that many specialties will be radically transformed or completely disappear under the pressure of the development of science, new

innovations in the economy (automation, robotics, development of artificial intelligence, etc.). Wars, international conflicts, climate change, globalization processes, immigration flows, pandemics and epidemics also affect the content and composition of global, European and national labor markets. There is a general concern that the knowledge and skills that are relevant today may become useless

for the challenges of tomorrow. Therefore, educational institutions face the important task of forming in students (pupils, students) a set of knowledge and skills that are in demand today, but are anticipatory in nature. The sphere of education and the labor market of Ukraine in modern conditions and in the future are increasingly integrated into the European space. This is due not only to the objective processes of globalization, but also to the country's acquisition of the status of an official candidate for EU membership in June 2022 [1]. Therefore, the stable and sustainable development of Ukraine must be consistent with EU standards and requirements.

Analysis of recent publications. The issue of the relationship between education and the labor market was studied by such modern domestic scientists as O. Davlikanova, L. Ilyich, M. Khomenko, V. Kremen, S. Kulytskyi, N. Mospan, I. Osadchuk, V. Sydorenko and others. These problems were studied by foreign researchers (A. Aggarwal, U. Bardak, L. Cuza, A. Freguglia, D. Furia, A. Ionescu, B. Reskin, L. Roberts, C. Ross and so on). This issue has recently been in the focus of international organizations such as OECD (The Organization for Economic Cooperation and Development), ILO (International Labour Organization), Cedefop (European Center for the Development of Vocational Training), World Bank, World Economic Forum, International Monetary Fund and domestic institutions (State Employment Service of Ukraine, Federation of Employers of Ukraine, Ministry of Education and Science of Ukraine, etc.).

The purpose of this article is to summarize statistical and analytical information and forecasts regarding changes in education in European countries and Ukraine in the context of the transformation of labor markets and under the influence of the deployment of Industry 4.0.

Research methods. The historical method is used to consider the evolution of the unemployment rate and the concepts of education and training. The comparative method is used to analyze EU legislation and basic digital skills of its citizens, the state of education in Ukraine. The author also used methods of analysis, synthesis, and generalization of statistical data of the EU and Ukraine.

Presentation of the main material. The issue of the relationship between the education system and the labor market in European countries has been relevant for more than 60 years. After the end of the Second World War, there was practically no unemployment on the European continent for a decade and a half. However, in the 1960s, 4 to 6% of the population in Italy were unemployed

(in 1965, the number of unemployed reached 1.2 million people), which was twice the rate in other countries [2, p. 33]. This intensified the search for new forms of connection between education and the labor market. In 1993, the EU introduced the concept (Lifelong Learning - LLL) into political, scientific, social, educational and other discourses [3]. The European Institute of Innovation and Technology (EIT) began its activities in 2008, by decision of the European Parliament and the Council of EU. It aims to combine the efforts of three sectors - education, business and research.

But in 2009, 23 million people or 10% of the active population of the EU found themselves unemployed. Therefore, at the beginning of March 2010, the European Commission adopted a new long-term action plan "Europe 2020: a strategy for smart, sustainable and inclusive growth" [4]. The situation did not improve, despite efforts. The high level of unemployment among young people, which began after the financial crisis of 2008 and reached its peak in 2013 (24.4%), forced the EU to constantly address the issues of the quality of education and training, as well as their standardization. Education and training aim to equip young people and adults with the knowledge, skills and competences needed for specific occupations or, more broadly, in the labor market. The relevance of key competences for lifelong learning, which were defined in the Recommendations of the Council of the EU dated May 22, 2018, was confirmed, namely: literacy; multilingual competence; mathematical competence and competence in science, technology and engineering; digital competence; personal, social and learning competence; civic competence; entrepreneurial competence, as well as cultural awareness and self-expression competence [5].

European countries are making significant efforts to deal with unemployment. However, the situation continues to be unstable. The COVID-19 pandemic in 2020 worsened the unemployment rate to 8.5% in the Euro area. In February 2023, the youth unemployment rate was 14.5% in the EU and 14.4% in the euro area, respectively up from 14.4% and stable compared with the previous month [6].

In Ukraine the situation with unemployment was extremely difficult, even before Russia's aggression on February 24 2022. According to the data of the State Employment Service, in 2010, among the unemployed aged 15-25, the share of graduates of higher, vocational and technical educational institutions, secondary schools was 36.9%, respectively; 55.9%; 7.2% [7, p. 318]. The system of higher education in Ukraine underwent

turbulent changes during 1991-2019, which led to its insufficient competitiveness. For example, only in 1994, in terms of GDP reduction, 73 new universities, academies, and institutes were opened. [8]. The situation with teachers is very bad. In 2021, almost 440,000 teachers worked in 15,000 schools, 120,000 in preschool educational institutions. Every year, for various reasons, 16,000 people are laid off, 13,000 people go to work. 11,400 workers are registered in the employment center with 4,300 vacancies. It has its own technology, and there are big doubts that those who registered will go to the vacant places. About 75,000 teachers of retirement age who, under certain circumstances, can hypothetically leave their jobs at the same time [9].

The situation worsened significantly with the beginning of Russia's large-scale aggression against Ukraine. Ministry Education and Sciences informs, that as of January 20, 2023, 2,631 general secondary education institutions, out-of-school and specialized education institutions were damaged, and 420 were destroyed. According to operational information, as of January 23, 2023, 22 VET institutions were destroyed, and 124 institutions were damaged. The most damaged educational institutions were in Donetsk (29), Kharkiv (18), Dnipropetrovsk (13), Luhansk (12) and Mykolaiv (11) regions [10]. Special attention should be paid to institutions of vocational education and training (VET). Their role in modern education is constantly increasing. They are becoming more and more open in European countries and have developed their mechanisms of access to higher and continuing education. Such examples can be observed in France (Baccalaureat professionnel), Switzerland (Berufsmaturität), Austria (Berufsreifeprüfung) [11, p. 4].

Progress in blurring the boundaries between secondary special education and higher education does not overshadow the existing problems. Back in 2000, a decision was made in the EU to equip teachers of educational institutions of all levels with basic digital skills. However, the results for twenty years were not significant. This led the European Commission in September 2020 to introduce a flagship initiative for 2021-2027 (Digital Education Action Plan – DEAP), which aims to achieve high-quality, inclusive and accessible digital education supported by increased cooperation and exchange of information and experience at EU level and member countries [12].

However, according to Eurostat data for 2021, only 54% of Europeans have basic digital skills. Therefore, the task is to bring this indicator to 80% by 2030 [13]. The difference between the EU countries is particularly impressive. Among

the Top-5 countries, basic digital skills among the population are possessed by: Finland - 79.18%; The Netherlands - 78.94%, Ireland - 70.49%, Denmark - 68.65%, Sweden - 66.52%. The lagging countries include: Romania (27.82%); Bulgaria (31.18%); Poland (42.93%); Italy (45.6%); Lithuania (48.84%) [14].

Another important direction is the relationship between general and professional content as guidelines for the development of educational plans. This provides an opportunity to meet the requirements of the labor market. Generalized statistical data for the second decade of the XXI century show that 31.5% of VET providers in the European Union noted a small or significant increase in the general theoretical component, and about 60% of respondents reported an increased focus on solving real problems and greater consideration of the needs of companies in training programs. The increase in the focus of attention in the content of skills primarily concerns digital skills (55%), the quality of professional training and specialization (34%), the ability to work with others (31%), the breadth of professional competences (29%) and social and communication skills (29%). Less obvious was the issue of increasing initiative (19%), English language proficiency (16%) [15, p. 63].

Cedefop's 2022 review of changes in the content and profile of VET noted that several EU countries have strengthened the general education component of curricula through various means (either by increasing the teaching of general education subjects or by better integrating them into the vocational component). ReferNet (network of institutions created by Cedefop in 2002 to provide information on national vocational education and training (VET) systems and policies in the EU Member States, Iceland and Norway) experts reported an increase in the professional skills component only in some cases. The increased emphasis on general skills did not come at the expense of on-the-job training. As practice shows, the parallel increase of general skills and workplace learning is possible either through a greater integration of general skills into workplace and workplace learning, for example, theoretical training related to the profession, or by increasing the number of general subjects in school. Evidence shows that the latter can be due to theoretical knowledge related to the profession or practical skills in schools [16, p. 8-9].

The analysis of documents in the field of education of the EU member states shows an obvious tendency to strengthen the role and place of transversal skills in the content of education. This process takes place in various forms (incorporation

into general education, professional and higher education, through certain approaches or teaching methods, etc.). There are many national education systems where transversal skills are not specifically identified, so it is difficult to determine their extent or share in curricula.

There are many more factors that affect the labor market and require a separate study. In particular, the European Skills and Jobs Survey and PIAAC estimates show that between 8% and 14% of jobs worldwide are at high risk of automation. Even at 8%, this equates to 16 million working-age people in 2019 who could be at risk of losing jobs in the EU economy [16]. The transition to a green economy will have a significant impact on the labor market. According to experts' estimates, the reduction of jobs in professions related to coal mining and industrial fuel in Europe is expected to be within 10%. In contrast, employment in waste management is projected to increase by 52% between 2018 and 2030 [17, p. 31].

According to ILO data (March 2023), eight professional groups are in demand today in the world: food systems, health, retail, security, manual jobs, cleaning and sanitation, transport, and technicians and clerical workers [18]. The economic situation in Europe is uncertain amid the war in Ukraine. In 2022, EU annual inflation reached the highest level ever measured at 9.2%. Compared with 2021, when the annual value was 2.9%, it more than tripled [19]. But the European Union has set climate change as a top priority. There has been a legislative effort to

ensure local governments and businesses take steps to contribute to cutting carbon emissions as part of the efforts to tackle the climate crisis. Among the most in-demand professions in the EU today are the following: Sustainability Manager, Growth Marketing Manager, Sales Development Representative, Customer Success Manager, Enterprise Account Executive, Sales workers [20].

Conclusions. The directions of the development of the modern labor market and, accordingly, the sphere of education, are difficult to predict today, as they are influenced by many factors that today are difficult to determine and take into account in forecasts. In education, there are obvious trends to improve the basic digital skills of students (pupils, students), increase the role in their training of transversal skills. There is no doubt that the boundaries between secondary special education and higher education are blurred. At the same time, the issues of incorporating non-formal and informal education into the system of training qualified workers have not yet been determined. At the moment, the discussion regarding the consideration and assessment of microcredentials is just unfolding. Many ambiguities in the training of specialists are promised by the green transition, as well as the pace of automation and robotization of the economy, increased competition in all spheres of human life. The introduction of integrated approaches in education such as the German "learning fields" (Lernfelder) or the professional "code" in the Finnish system also looks promising.

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Володимир Андрійович Мандрагеля

доктор філософських наук, професор, професор кафедри методики професійної освіти та соціально-гуманітарних дисциплін, Білоцерківський інститут неперервної професійної освіти ДЗВО «Університет менеджменту освіти» Національної академії педагогічних наук України 09108, Київська обл., м. Біла Церква, вул. Леваневського, 52/4, Україна mandra09@gmail.com ORCID ID: 0000-0003-0807-5309

СИСТЕМА ОСВІТИ ТА РИНОК ПРАЦІ: ПИТАННЯ ВЗАЄМОЗАЛЕЖНОСТІ

Ринок праці останнім часом зазнає суттєвих змін під впливом багатьох факторів. Серед них глобалізаційні, демографічні, міграційні процеси, міжнародні конфлікти та війни, зміна клімату, епідемії, пандемії тощо. Особливої актуальності набувають цифровізація та зелений транзит в усіх сферах життя. Це позначається на вимогах до знань і навичок працівників, які готуються до отримання

або зміни робочих місць. Відтак, перед сферою освіти постає важливе завдання щодо запровадження гнучких і ефективних навчальних програм.

Мета статті. Узагальнення статистично-аналітичної інформації та прогнозів щодо змін в освіті в європейських країнах та Україні в контексті трансформації ринків праці та під впливом розгортання Індустрії 4.0.

Основні результати дослідження. В статті зазначено зростання рівня безробіття серед молоді на європейському континенті, яке почалося на початку 1960-х рр. Наведена статистика щодо освіти та рівня безробіття в Україні, збитки від війни, що була розв'язана Росією у 2022 р. Особливо підкреслена зростаюча роль закладів професійної освіти і тренінгу у загальній системі освіти країн світу, розмиття кордонів між середньою спеціальною та вищою освітами. В освіті виокремлені дві головні тенденції: розвиток інформаційно-комунікативних технологій та підвищення ролі трансверсальних навичок. Наведена статистика щодо рівня базових цифрових навичок серед громадян країн-членів ЄС та ініціативи щодо підвищення цифрової грамотності європейців. Підкреслена наявність різних підходів щодо співвідношення загальнотеоретичних та професійних дисциплін у різних національних системах освіти.

Висновки. До кінця не визначеним залишається вплив на сферу освіти і ринок праці процесів автоматизації, роботизації, переходу до зеленої економіки. Зазначена перспективність запровадження інтегрованих підходів в освіті на кшталт німецьких «полей навчання» (Lernfelder) або професійного «коду» у фінській системі.

Ключові слова: освіта, професійна освіта і тренінг, ринок праці, Європейський Союз, Україна, цифровізація, трансверсальні навички.

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