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**EDUCATION AND QUALIFICATIONS****OF EMPLOYEES IN UKRAINE:****CHALLENGES AND THE EUROPEAN CONTEXT****ОСВІТА ТА КВАЛІФІКАЦІЯ ПРАЦІВНИКІВ В УКРАЇНІ:  
ВИКЛИКИ ТА ЄВРОПЕЙСЬКИЙ КОНТЕКСТ**

**Summary.** The article highlights the issues of education and qualification of employees in Ukraine in the context of integration into the European educational space. It analyses the current state of formal and informal education, identifies the main characteristics of employee qualifications, and compares the level of qualifications of the population of Ukraine and EU countries. Particular attention is paid to the relevance of vocational and higher education to the real needs of the labour market. The dynamics of the share of young people aged 15–24 who are not in employment, education or training (NEET) are considered, as well as the participation of the adult population in lifelong learning. Approaches to forecasting skills needs in EU countries are assessed and the problems of such forecasting in Ukraine are outlined. Directions for improving the national education and qualifications system are proposed, taking into account European practices, in particular the introduction of a results-oriented approach, the development of professional standards, the recognition of non-formal learning, the strengthening of partnerships with employers and the creation of conditions for lifelong learning.

**Keywords:** education, workforce qualification, labour market, vocational training, lifelong learning, NEET youth, European experience.

**Анотація.** У статті проаналізовано ключові виклики у сфері освіти та формування кваліфікації працівників в Україні в контексті європейської інтеграції. Досліджено стан формальної та неформальної освіти, особливості кваліфікації працівників та здійснено порівняльний аналіз рівнів освітніх та кваліфікаційних характеристик населення України та країн ЄС. Особливу увагу приділено відповідності результатів професійної та вищої освіти потребам ринку праці, виявлено суттєвий розрив між змістом освітніх програм та вимогами роботодавців, що стимулює формування висококваліфікованої робочої сили. Окремий акцент зроблено на динаміці молоді групи NEET (Not in Education, Employment, or Training), зростання якої свідчить про посилення ризиків соціальної вразливості та обмежені можливості інтеграції на ринок праці. Показано, що причинами цього є недостатня ефективність системи профорієнтації, обмежений доступ до якісного професійного навчання та невідповідність між освітою та зайнятістю. Проаналізовано участь додорослого населення в навчанні протягом життя: на відміну від країн ЄС, де діє розвинена інфраструктура безперервної освіти, в Україні зберігаються бар'єри щодо доступності програм та визнання результатів неформального навчання. У статті розглянуто європейські підходи до прогнозування потреб у кваліфікаціях,

які забезпечують узгодження змісту освіти з майбутніми структурними змінами на ринку праці. Показано, що в Україні відповідні механізми перебувають на початковій стадії розвитку, що ускладнює стратегічне планування та формування актуальних компетентностей. Запропоновано напрями вдосконалення національної системи кваліфікацій: впровадження результатаорієнтованого підходу в освіті, активне залучення роботодавців до розроблення професійних стандартів, розвиток системи визнання неформального навчання, розширення партнерств між освітою та бізнесом, а також стимулювання навчання протягом життя як інструменту підвищення мобільності та конкурентоспроможності робочої сили. Зроблено висновок про необхідність комплексних реформ на основі кращих європейських практик та адаптації їх до українських соціально-економічних реалій, що сприятиме формуванню сучасного людського капіталу та підвищенню конкурентоспроможності національної економіки.

**Ключові слова:** освіта; кваліфікація робочої сили; ринок праці; професійне навчання; навчання протягом життя; молодь NEET; європейський досвід.

**Problem statement.** The education and qualifications of workers are among the factors that determine the efficiency of the labour market and the competitiveness of the economy. In the context of globalisation, technological change and European integration, the role of qualifications has grown significantly. However, the education system in Ukraine faces a number of challenges that affect the ability of graduates to meet the demands of the modern labour market. These include not only insufficient updating of curricula and standards, but also a mismatch between the level of training of employees and the needs of business. At the same time, rapid changes require continuous improvement of skills, which confirms the importance of lifelong learning.

One of the main problems is the mismatch between educational standards and qualification training and the real requirements of the labour market, which limits the mobility of workers and their ability to adapt. This is a consequence of the insufficient flexibility of the education system, as well as the lack of adequate mechanisms for recognising the results of non-formal and informal learning. In this context, it is important to compare approaches to qualification systems in Ukraine and European Union countries, where the education and qualification system is much more adapted and integrates European standards (in particular, the European Qualifications Framework, EQF). Studying European experience in this area is extremely important for developing a strategy for the development of education and qualifications of workers in Ukraine.

Thus, the relevance of the problem lies in the need to develop and implement new approaches to employee qualification, taking into account the European context, which will contribute to better integration of the Ukrainian workforce into the global labour market and increase its competitiveness.

**Analysis of recent research and publications.** Research into education systems, employee qualification and human capital formation is a subject of interest to both international organisations and Ukrainian scholars. The OECD's international report "Education at a Glance 2023" contains comprehensive statistics on the accessibility, quality

and effectiveness of education in OECD countries, as well as adult participation in lifelong learning [1]. The World Bank report "Skills for a Modern Ukraine" focuses on the gap between the skills provided by the Ukrainian education system and the needs of the labour market [2]. The UNESCO Global Report "Technology in Education: A Tool on Whose Terms?" highlights the challenges associated with the digitisation of education [3]. In theoretical terms, Gary Becker, author of the concept of human capital, made an important contribution by substantiating the economic effect of investment in education. [4].

In the Ukrainian context, the report by the Institute of Higher Education of the National Academy of Pedagogical Sciences of Ukraine, dedicated to the interaction between the higher education system and the labour market in conditions of martial law, is of considerable analytical value [5]. The National Report on the State and Prospects of Education Development in Ukraine provides a comprehensive overview of all levels of education and an assessment of the implementation of European standards [6]. A separate place is occupied by V. Krushlo's study, which analyses the role of digitalisation and the importance of continuous learning [7]. Thus, scientific and analytical sources point to the urgent need to adapt the education system to the needs of the modern labour market, increase the flexibility of vocational training and encourage the adult population to participate in lifelong learning.

**Highlighting previously unresolved problems.** An analysis of scientific literature, policy reports, and empirical data reveals that several crucial issues in the development of education and workforce qualifications in Ukraine remain insufficiently addressed. Existing research tends to examine formal education, vocational training, and labour-market outcomes separately, which prevents the formation of a unified understanding of how these elements interact within a coherent national skills system. As a result, the relationship between educational provision, qualification requirements, and real labour-market demand remains fragmented.

Another unresolved problem is the lack of effective quantitative tools for assessing the alignment between acquired qualifications and the needs of

the economy. Although Ukraine collects separate indicators on educational attainment, employment, and training participation, no integrated index exists to measure the correspondence between workforce skills and labour-market requirements, particularly across different sectors and age groups. This hinders evidence-based decision-making and limits the ability to forecast future qualification needs.

A further gap concerns the insufficient development of mechanisms for recognising non-formal and informal learning. While EU countries employ structured frameworks for validating competencies acquired outside formal education, Ukraine lacks comprehensive procedures for assessing such learning outcomes. This reduces labour-force mobility and restricts opportunities for adult upskilling and reskilling.

Additionally, the absence of a national system for forecasting skills demand-similar to CEDEFOP models widely used in the EU-forces policymakers to rely on fragmented data sources and short-term labour-market trends. This weakens strategic planning in education and undermines the ability of institutions to adapt programmes to technological, demographic, and structural economic changes.

Altogether, these unresolved problems highlight the disconnect between theoretical approaches, existing educational policy measures, and the real needs of the labour market. Addressing these issues is essential for improving the effectiveness of Ukraine's education and qualification system in the context of European integration.

**The purpose of the article** is to conduct a comprehensive analysis of the current state of education and employee qualifications in Ukraine, to identify key challenges in this sphere, and to compare national practices with those of the European Union in order to develop recommendations for improving the

quality of the labour force in the context of Ukraine's European integration.

Research objectives:

1. To analyse the current state of formal and non-formal education in Ukraine.
2. To assess the level of employee qualifications by industry and age group.
3. To examine European approaches to qualification recognition and lifelong learning.
4. To identify differences between Ukraine and EU member states regarding the training and upskilling of personnel.
5. To propose directions for improving the national system of education and qualifications, taking into account European experience.

The study applies a comprehensive methodological approach that combines qualitative and quantitative analytical methods. A comparative analysis of education levels, participation in vocational training, and the alignment of employee qualifications with labour market needs in Ukraine and EU member states was conducted using data from the State Statistics Service of Ukraine, Eurostat, and the OECD. Statistical techniques (comparison of mean values, trend analysis, and structural analysis of indicators) were employed, along with an analytical review of scientific literature, strategic documents, and reports of international organisations.

**Summary of the main research material.** In the context of globalization, digital transformation and rapidly changing labour market conditions, the role of education and employee qualifications has become increasingly significant. A highly qualified workforce is a critical determinant of economic competitiveness and innovation potential. To better understand these processes, a conceptual analysis of qualification, formal and non-formal education is presented in table 1, which outlines their essential characteristics.

**Table 1 – Comparative characteristics of qualification, formal and non-formal education**

Comparison criterion	Qualification	Education	
		formal	informal
1	2	3	4
Essence of the concept	The set of knowledge, abilities, skills and competencies that enable a person to perform professional activities effectively	Systematised process of acquiring knowledge within the state education system	Targeted education provided outside the formal education system
Form of organisation	It can be formed as a result of formal, informal or informal education.	Institutionally organised education (school, college, university)	Short-term courses, training sessions, seminars, on-the-job training
Documentary confirmation	Confirmed by diplomas, certificates, professional qualifications, and sometimes work experience	It ends with the issuance of a state document on education (diploma, certificate, etc.)	May be accompanied by a certificate, but is not a mandatory element
Purpose of acquisition	Confirmation of professional suitability and competitiveness in the labour market	Obtaining an educational degree or professional qualification	Improvement of professional competencies, development of applied skills

End of Table 1

1	2	3	4
Regulatory framework	National Qualifications Framework (NQF), Resolution of the Cabinet of Ministers of Ukraine No. 1341 of 23 November 2011	Law of Ukraine «On Education» (Articles 9, 13), State Standards of Education	Law of Ukraine 'On Education', Article 10; international recommendations (ECC)
Recognition in the field of employment	Recognised as the basis for professional selection and promotion	It has a high level of recognition, especially in the public and education sectors	The level of recognition depends on the content, the authority of the education provider, and compliance with market requirements
Education as an investment in human capital	Is the result of investments in knowledge, skills and experience that increase employee productivity	It is considered a long-term investment with a delayed effect, aimed at acquiring systematic knowledge and official qualifications	Focused on the rapid updating and expansion of professional competencies, it increases employee flexibility and adaptability

Source: compiled by the authors based on [8–10]

The comparison demonstrates that qualification is an integrated outcome shaped by different forms of learning. Formal education provides a foundation of systematic knowledge, whereas non-formal learning ensures flexibility, rapid skills renewal and improved adaptability to evolving labour market needs.

Over the past decade, formal education in Ukraine has undergone substantial structural changes. A steady decline in the number of educational institutions at all levels has been observed, driven by demographic factors, migration and the consequences of war. These trends are illustrated in Figure 1, which shows the dynamics of formal education institutions in Ukraine.

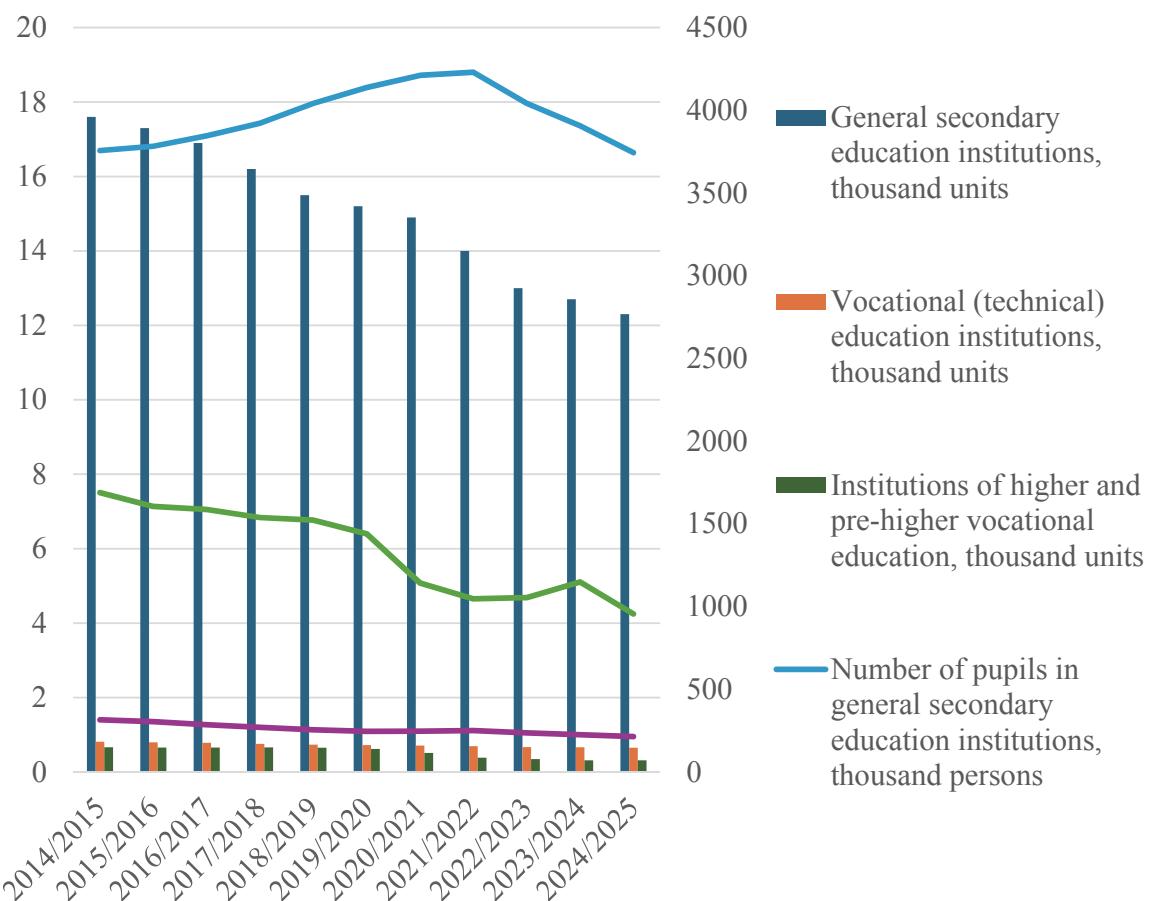


Figure 1 – Dynamics of formal education institutions in Ukraine

Source: [11]

The contraction of the educational network, particularly within vocational education, highlights the need to modernise curricula, strengthen cooperation with employers and increase the attractiveness of vocational professions. At the same time, formal education does not always ensure the practical skills required in a modern economy.

A comparison of the Ukrainian qualifications system with European approaches is presented in table 2. The European Qualifications Framework (EQF) provides transparency, comparability and recognition of qualifications across EU Member States, while in Ukraine the practical implementation of the National Qualifications Framework (NQF) remains limited.

Despite formal alignment, significant gaps persist, particularly regarding the recognition of non-formal learning, modular programme design and lifelong learning opportunities. These differences have a direct impact on labour market adaptability and workforce mobility [19].

Sectoral and age-specific differences in employee qualifications in Ukraine are summarised in table 3.

The data demonstrate substantial disparities: high mobility of IT professionals, acute shortages of skilled industrial workers, unstable skill development in the service sector and limited learning opportunities for

employees aged 50+. These imbalances intensify structural tensions within the labour market and indicate the need for targeted reskilling and upskilling policies.

A key strategic component in this context is the development of Lifelong Learning (LLL). LLL aims to improve knowledge and competencies for both personal and professional purposes and is essential under conditions of rapid technological change. In EU Member States, adult participation (aged 25–64) in LLL grew from 5.3% in 2002 to 12.7% in 2023 [1; 22], and the EU target for 2030 envisages participation of at least 60% of adults in this age group.

Closely related to LLL is the issue of youth vulnerability, reflected in the NEET indicator (Not in Education, Employment or Training). In EU countries, the average NEET rate declined to 11.0% in 2024 [21]. In Ukraine, the pre-war NEET rate ranged between 14.3% and 15.5% [11], but since 2022 the indicator is projected to increase significantly due to war-related disruptions and migration.

EU countries have long implemented structural coordination between education systems and labour market needs, including dual vocational training models and advanced qualification forecasting mechanisms provided by CEDEFOP [20]. Several

**Table 2 – Comparison of the qualifications systems of Ukraine and the EU**

Criterion	Ukraine (NQF)	EU (EQF)
Definition of the concept	Recognised level of knowledge, skills, abilities and other competences acquired through education or professional activity	Formal assessment and recognition of learning outcomes after completion of the educational process or assessment
Number of levels	10	8
Main components of the results	Knowledge, skills, communication skills, autonomy, responsibility	Knowledge, skills, competencies (in the context of autonomy and responsibility)
Recognition of informal learning	Legislatively provided for, but applied to a limited extent in practice	Actively used, is part of the qualification system
Main purpose of the framework	Harmonization of qualifications and their compliance with educational and professional standards	Ensuring transparency, mobility and mutual recognition of qualifications in the European area

Source: compiled by the authors based on [8–10]

**Table 3 – Levels of employee qualifications in Ukraine by sector and age group**

Category	Skill level / Trends	Problems / Risks
IT sector	High qualifications, international certificates	High mobility, brain drain abroad
Industry	Average or insufficient qualifications. Significant labour shortage	Ageing workforce, low attractiveness of professions
Service sector	Level varies, especially in small businesses	Lack of motivation to learn, job instability
Young people (under 35)	Actively use informal education, adapt quickly	Supply exceeds demand in certain specialities
50+ years	Fewer opportunities and motivation to learn	Displacement from the market, age discrimination

Source: compiled by the authors based on [2; 12–15]

EU-level instruments support transparency, mobility and quality assurance:

- EQF (European Qualifications Framework): Facilitates mobility and recognises outcomes of formal and non-formal learning [16].
- ECVET (European Credit System for Vocational Education and Training): Enables modular learning and the accumulation and transfer of learning outcomes [17].
- Europass: Provides standardised tools for documenting and presenting skills [18].

A central EU instrument is the CEDEFOP Skills Forecast, which uses macroeconomic modelling to predict qualification needs up to 2035. The forecast anticipates rising demand for highly skilled workers (IT, healthcare) and transversal skills such as digital literacy and adaptability.

In contrast, Ukraine lacks an integrated national system of long-term forecasting. Short-term forecasts produced by the State Employment Service remain fragmented due to insufficient integration of statistical, demographic and labour-market data (table 4).

Overall, the analysis shows that Ukraine's education and qualification system requires comprehensive modernisation based on European practices. Enhancing flexibility, strengthening employer engagement and expanding lifelong learning opportunities are essential to improving workforce competitiveness and supporting Ukraine's European integration trajectory.

**Conclusions.** The conducted research has identified several key factors influencing the effectiveness of Ukraine's education and qualifications system:

1. Structural contraction of formal education. A sustained decline in the number of educational institutions and student enrolment – combined with a notable imbalance between the oversupply of graduates in humanities and the shortage of skilled workers – indicates systemic mismatches between educational outputs and labour market needs.

2. Sectoral and demographic disparities in qualification levels. Significant differences persist across sectors and age groups: high mobility and competitive skills in the IT sector, workforce ageing in industry, and vulnerability of workers aged 50+, which collectively widen qualification gaps.

3. Partial implementation of European instruments. While the Ukrainian qualifications framework is aligned with EQF principles, practical tools such as the recognition of non-formal learning, modular learning pathways and competency-based assessment remain underdeveloped compared to EU practices (EQF, ECVET, Europass).

4. Challenges related to NEET and lifelong learning (LLL). Low participation rates of adults in lifelong learning – combined with a projected increase in the share of NEET youth due to the war – pose a risk of substantial human capital loss.

5. Strategic priorities for improvement. To align qualifications with contemporary challenges, Ukraine must implement systemic reforms informed by European experience, consistent with the country's European integration trajectory.

Recommendations for improving Ukraine's national system of education and qualifications:

- Adopt a learning-outcomes-oriented approach: strengthen the integration of the NQF and update educational standards based on competency-based methodology.
- Enhance labour market alignment: establish sectoral qualification councils, expand dual education and ensure structured employer participation in curriculum design.
- Develop recognition of non-formal and informal learning: introduce transparent and accessible procedures for validating non-formal competences.
- Strengthen lifelong learning infrastructure: create regional adult education centres, expand digital learning platforms and introduce training vouchers for reskilling purposes.
- Support institutional modernisation: ensure stable functioning of the National Qualifications Agency and integrate data flows across education, labour market and statistical institutions.

In conclusion, the implementation of advanced European practices can significantly enhance the competitiveness of Ukraine's workforce and contribute to sustainable socio-economic development. Future research should focus on assessing the impact of lifelong learning on employee productivity and examining labour market needs in the context of emerging technologies.

**Table 4 – Key differences between Ukraine and EU Member States**

Indicator	Ukraine	EU Member States
Recognition of non-formal learning	Limited	Widely implemented
Flexibility of educational programmes	Low, focused on formal diplomas	Modular, learning-outcome-based structure
Educational opportunities for 50+	Minimal incentives	Systematic lifelong learning support
Linkages between education and labour market	Weak	Strong cooperation between education and business

Source: developed by authors

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