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EDUCATIONAL INDICATORS AS A MEANS OF HARMONISING UKRAINIAN AND EUROPEAN EDUCATION SYSTEMS

Abstract. *The article examines the role of educational indicators as a key tool for harmonising the Ukrainian and European education systems. In the context of reforming Ukraine's educational system within the framework of European integration processes, there is a need to introduce criteria that address current challenges and meet the requirements of the European Union, and at the same time enable the positioning of the Ukrainian education system among those of the EU member states. Educational indicators serve as a tool for assessing the quality of educational processes and ensuring the comparability of learning outcomes both nationally and internationally. In this article, the authors consider the main approaches to defining educational indicators and their role in the development of national educational criteria. The article focuses on indicators based on branch statistical reporting and information obtained from monitoring studies on the implementation of reforms in the education sector. The issue of adapting European educational criteria in the Ukrainian context, taking into account the peculiarities of the national education system, is highlighted separately. The OECD educational indicators on education expenditures, access to educational services, and the number of learners per teacher are used as examples. This study aims to analyse the possibilities of using European indicators as a benchmark for improving the quality of education in Ukraine. The conclusions of the study presented in the article confirm that the integration of European educational indicators will help to improve the quality of Ukrainian education, increase its competitiveness in the international arena, and strengthen the relationship between national and European educational systems.*

Keywords: *globalisation, integration, educational indicators, education system of Ukraine, quality of education, general secondary education.*

JEL classification: I18.

DOI: 10.32987/2617-8532-2025-1-99-106.

In the modern world, it is essential to recognize every individual's right to access quality education. Under the influence of globalisation, this right can be realised through the harmonisation of international education policies. The harmonisation and unification of these

policies enable the improvement of educational services across all levels and facilitate the creation of a cohesive European Education Area (EEA) [1]. The establishment of the international platform «European Education Area: Quality Education and Learning for All»

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serves as a cornerstone for aligning and harmonising educational policies. This process is supported, among other factors, by the availability of comparable statistical data. The foundation of such data lies in relevant indicators, developed by individual countries and aligned with international standards.

The development of indicators represents the initial stage in the collection of statistical data on specific processes, forming the foundation for shaping European educational policy and constructing the EEA.

The harmonisation of European and Ukrainian education systems has been extensively examined by scholars. For instance, S. Konstantinov [2] emphasises that aligning the Ukrainian educational system with European standards and fostering conditions for enhanced international cooperation can be achieved through the harmonisation of knowledge areas. Similarly, M. Yevdokimova [3] explores the integration of Ukrainian and EEA through the alignment of academic specialities. Furthermore, I. Hamerska's research focuses on the harmonisation of Ukrainian and European educational systems by aligning assessment practices, particularly within the framework of the Bologna Process [4].

This study focuses on the alignment of education indicators to facilitate the harmonisation of the Ukrainian and EEA. Particular attention is given to indicators of material and technical support, the level of pupil coverage in general secondary education, and the average pupil-to-teacher ratio across the country. Additionally, two primary sources of data for calculating education indicators in Ukraine have been considered: annual branch statistical reports

and data derived from monitoring studies on the implementation of educational reforms.

In 2016, researchers at the SSI «Institute of Educational Analytics» developed a comprehensive list of national education indicators encompassing all components of the educational process. This list, along with methodologies for calculating indicators of efficiency and quality in general secondary education, was approved and implemented by the Ministry of Education and Science of Ukraine [5].

The development of the national system of educational indicators was carried out by aligning them with the indicators established by the Organisation for Economic Co-operation and Development (OECD) and Eurostat.

The education indicators developed by the OECD serve as a crucial tool for analysing and comparing education systems across the European Union and its member states. These indicators are utilised to evaluate the effectiveness of education policies, accessibility of education, as well as its quality and efficiency. Furthermore, they contribute to the establishment of a robust evidence base for strategic decision-making in the education sector.

The main OECD education indicators include:

1. Access to and coverage of education:
 - Percentage of the population enrolled in pre-school, primary, secondary, and tertiary education.
 - Indicators of access to education for different social groups.
 - Level of adult participation in life-long learning programmes.
2. Financing of education:
 - Share of GDP (Gross Domestic Product) allocated to education.

- The structure of education financing, including public and private investment.

- Expenditure per pupil at different levels of education.

3. Quality of education:

- The level of learners' competence in reading, mathematics, and science (in particular, based on the results of the international PISA study).

- Pupil-teacher ratio.

- Qualification and professional development of teaching staff.

4. Equality in access to education:

- Differences in educational achievement between different socio-economic groups.

- Gender gap in education indicators.

- The level of inclusion for children with special educational needs.

5. Educational outcomes:

- Secondary and higher education completion rates.

- Employment rate among graduates of educational institutions.

- Contribution of education to human capital formation and economic growth.

OECD education indicators form the basis for international rankings and reports, such as Education at a Glance [6]. These indicators enable the governments of participating countries to evaluate their education systems, benchmark them against other nations, and adopt best practices in education. Furthermore, the data provided by these indicators are essential for researchers, analysts, and non-governmental organisations (NGOs) studying the impact of education on the socio-economic development of countries.

Information required for the calculation of national education indicators can be derived not only from statistical data but also from monitoring studies on the

organisation of educational institutions and the implementation of educational reforms.

Indicators calculated based on branch statistical reporting are generally more stable, providing the opportunity to obtain more accurate information about the state of the education sector at the time of data collection. These indicators can also be compared with similar international benchmarks for conducting comparative analyses [7].

In addition, the basis for calculating education indicators can be derived from the results of monitoring studies. For instance, such studies may include the implementation of the New Ukrainian School Concept or the development of an effective network of general secondary education institutions within amalgamated territorial communities (ATCs), particularly in the context of establishing hub schools.

However, there are challenges in using monitoring study results as a source of statistical data for calculating education indicators. Specifically, due to ongoing transformations occurring in the national education sector, the focus areas of monitoring studies, and consequently, the quality indicators of educational activities, are subject to change.

Monitoring studies on the implementation of reforms are typically conducted through surveys of stakeholders, such as school principals, deputy principals, teachers, and parents of learners. These surveys are often characterised by the subjectivity of respondents' answers, which may influence the reliability of research results. Consequently, there is a risk of inaccurate data being utilised in the calculation of national education indicators. To enhance the reliability and comparability of results, researchers de-

sign questionnaires that include repeated questions at different stages of the study. This approach allows for cross-verification of responses and helps mitigate the impact of subjective biases [8].

Let us examine in greater detail the indicators reflecting the quality of the educational system's organisation derived from monitoring studies and compare them with the quality of education indicators in the European educational area.

For example, after the next stage of implementation of the NUS Concept in primary school, the following indicators were obtained in pilot educational institutions [9] as sources for calculating education quality indicators:

Material and technical support of the classroom. The material and technical equipment of classrooms represent a crucial component in ensuring a high-quality educational process. It facilitates the effective implementation of curricula and contributes to the development of a modern educational environment. As an indicator of education quality, this aspect reflects the level of resource provision for learning activities, which is essential for achieving educational goals and objectives. The following components were used in the survey of respondents regarding the material and technical support of classrooms in the monitoring study of pilot educational institutions:

- availability of a computer/laptop with uninterrupted Internet access both in the educational institution and at home;
- availability of a computer/laptop with uninterrupted Internet access only in the educational institution;
- having a computer/laptop with uninterrupted Internet access only at home;
- lack of equipment necessary for work.

In the OECD system of education indicators, the issue of material support for educational institutions is addressed by the Expenditure on Education indicator. This indicator is analysed in detail, particularly in the context of how education expenditure contributes to enhancing the material and technical support of educational institutions and improving their efficiency.

Provision of teaching and learning materials. Teaching and learning materials play a crucial role in equipping teachers with modern tools for planning, delivering lessons, and assessing pupils' learning outcomes. Their availability, relevance, and alignment with educational standards facilitate the implementation of innovative approaches, including competency-based learning. The survey assessed the level of provision of pilot teachers with textbooks (either in full or in separate sections/blocks), digital resources, teacher's guides, diagnostic tools, etc.

Similar to the level of material provision in classrooms, the availability of teaching materials for teachers also correlates with the OECD's Education Expenditure indicator, particularly in the context of enhancing the material and technical support of educational institutions.

The level of accessibility to quality education for learners can also be assessed using indicators derived from monitoring studies. Specifically, the data obtained from the monitoring study on the formation of an effective network of general secondary education institutions in ATCs [10] allow a comparison with the OECD indicators on access to education. These include the proportion of the population covered by secondary education and the level of access to education for different social groups.

Thus, based on the results of the study on the formation of the general secondary education institutions (GSEI) network in amalgamated territorial communities, a number of indicators were employed to obtain reliable data. The analysis of these data enabled the determination of the effectiveness of the current GSEI network in ATCs, the identification of problem areas, and the assessment of the potential for further optimisation of the network. This group of indicators includes:

1. «General secondary schools located in rural areas». This analysis provided information on the level of access to educational services for pupils living in rural areas.
2. «Reorganisation of GSEI into hub schools». This indicator provided information on the state of reorganisation of general education institutions into hub schools in the dynamics during 2016–2022.
3. «Hub educational institutions in the regional context». The indicator allowed us to track the dynamics of changes in the number of hub institutions in the regional context.
4. «GSEIs by educational levels, by urban/rural area, by region», etc. The analysis of general trends in the distribution of GSEIs across educational levels has facilitated the development of an indicator for assessing education quality. This indicator serves to examine the structure of the educational system

and its capacity to provide educational services at various stages of education. It indicates whether there are sufficient schools at each educational level to meet the population's needs. Additionally, it offers information on the Gross Enrolment Ratio (GER) by education level, region, and type of area.

When analysing the alignment of European education quality indicators with those derived from branch statistical reporting in Ukraine, one example is the indicator «Number of pupils per teacher». This indicator is calculated based on the annual collection of branch statistical reports. Similarly, a comparable indicator is included in the OECD report Education at a Glance.

An example of the dynamics of the change in the number of pupils per teacher according to national statistical reporting for the period 2017/2018–2023/2024 is shown in Fig. 1.

The following figure (Fig. 2) presents a comparable OECD indicator from the Education at a Glance 2021 report, which illustrates the number of pupils per teacher in the European education area. The figure also includes Ukraine's indicator to provide a visual representation of Ukraine's position in terms of the number of learners per teacher relative to other EU countries.

The alignment of European and Ukrainian education quality indicators is of strategic importance for Ukraine's

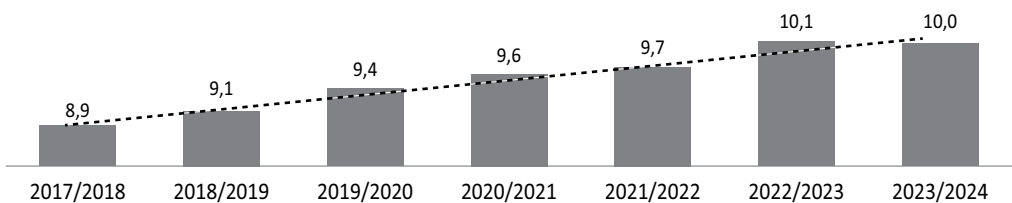


Fig. 1. **Distribution of the number of pupils per teacher in Ukraine for the school years 2017/2018 – 2023/2024, persons**

Created by the authors [10].

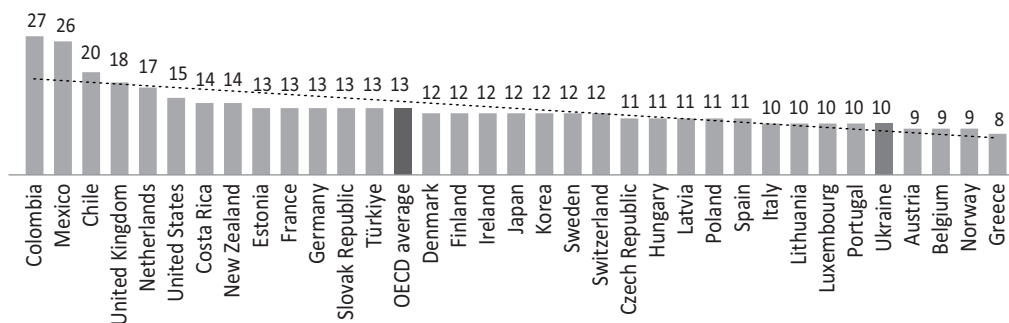


Fig. 2. Ratio of learners to teaching staff in secondary education in OECD countries and Ukraine, 2021

Created by the authors [6].

integration into the EEA. This task is particularly crucial in the context of harmonising educational standards, ensuring the transparency of assessments, and enhancing the competitiveness of Ukrainian educational institutions on the international stage. The alignment of indicators establishes a common methodological framework for comparing educational systems, stimulates the modernisation of Ukraine's education system, and enables an objective analysis of the effectiveness of educational policies.

Despite its clear importance, comparing education quality indicators requires overcoming challenges such as differ-

ences in data collection methodologies, financial constraints, and the need to enhance staff competencies. Nevertheless, the successful implementation of this task opens up prospects for improving the quality, accessibility, and management efficiency of education.

Overall, aligning European and Ukrainian education quality indicators is a pivotal step in modernising Ukraine's education system. It facilitates integration into the EEA, ensures international recognition of Ukrainian education, and creates conditions for the sustainable development of education in the face of global challenges.

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ОСВІТНІ ІНДИКАТОРИ ЯК ЗАСІБ УЗГОДЖЕННЯ УКРАЇНСЬКОЇ ТА ЄВРОПЕЙСЬКОЇ СИСТЕМ ОСВІТИ

Анотація. У статті досліджено роль освітніх індикаторів як ключового інструмента гармонізації української та європейської систем освіти. Під час реформування освітньої системи України на тлі євроінтеграційних процесів постає потреба в упродовженні критеріїв, що відповідають сучасним викликам і вимогам Європейського Союзу та дають можливість визначити місце освітньої системи країни серед освітніх систем країн ЄС. Освітні індикатори слугують інструментом оцінки якості освітніх процесів, забезпечуючи порівняльність результатів навчання на національному й міжнародному рівнях. Автори статті розглядають основні підходи до визначен-

ня освітніх індикаторів та їхню роль у розвитку національних освітніх критеріїв. Акцент зроблено на індикаторах, розрахунок яких базується на галузевій статистичній звітності та на інформації, отриманій за результатами моніторингових досліджень щодо запровадження реформ в освітній сфері. Окремо висвітлюється питання адаптації європейських освітніх критеріїв в українському контексті з урахуванням особливостей національної системи освіти. Як приклад розглянуто освітні індикатори ОЕСР щодо витрат на освіту, рівня доступу до освітніх послуг та чисельності учнів на одного вчителя. Мета дослідження – проаналізувати можливості застосування європейських індикаторів як орієнтира для підвищення якості освіти в Україні. Висновки, наведені в статті, підтверджують, що інтеграція європейських освітніх індикаторів сприятиме поліпшенню якості української освіти, підвищенню її конкурентоспроможності на міжнародній арені й посиленню взаємозв'язку національної та європейських освітніх систем.

Ключові слова: глобалізація, інтеграція, освітні індикатори, система освіти України, якість освіти, загальна середня освіта.

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