

FINANCIAL MANAGEMENT IN THE CONTEXT OF EDUCATIONAL REFORM

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Received 03 04 2026; Accepted 17 04 2026

Abstract

In the article, the peculiarities of functioning of educational institutions of different levels are examined. The influence of factors on the reform of the education system is substantiated. The importance of adapting the sphere of financial management to the modern needs of a market economy is proven. The European experience of financial management in educational institutions is studied, which proves the influence of the state-building system on the evolutionary development of the sphere of knowledge. The main models of financing the sphere of education are analyzed, which made it possible to identify both positive and contradictory aspects of each system. An analysis of education expenditures based on GDP and the share of expenditures in GDP in the global dimension, including in Ukraine, as well as an analysis of the structure and dynamics of sources of education financing in Ukraine were conducted. The main directions of improving financial management in the sphere of education were identified, which will contribute to the adaptation and flexibility of institutions in a turbulent environment and changing labor market conditions.

Keywords: Management System, Financial Management, European Education System, Ukrainian Education System, Adult Education, Educational Reforms.

JEL Codes: I22, H52.

Introduction

In the context of economic transformation, its further development largely depends on the quality of the education system at all levels. If we analyze the higher education system, it should be considered from two positions - as an infrastructure entity and as an element of the market environment. In this aspect, the issues of organizing the financing of institutions and attracting additional sources of resources arise. The quality of educational services depends on the efficiency of financing, which in turn affects the efficiency of the market environment and the intellectual capital of the state.

In modern conditions of education, financial management should be considered not only from the “technical” function but also as a strategic management of resources in the transformations caused by military actions, economic crisis, acceleration of European integration, etc. Under these conditions, state policy in the field of financing education should be focused on effectiveness, and not only on the historical distribution of funds. In conditions of demographic crisis, it is advisable to expand the areas of targeted support for youth (grants, scholarships), which have a positive impact on the development of intellectual capital in middle-income countries.

In this regard, research into new forms and methods of developing financial management in the direction of reforming the education system for the country is an urgent task.

Literature review

The issue of financing the education sector has been studied in the works of many scholars. Zuhroh D. et al. (2025), Garad A. et al. (2025) investigated the role of formal and informal education in micro and small enterprises, analyzed the impact of sharing economy platforms, management accounting systems, and demographic factors on financial performance. Mlakalaka P. et al. (2024), Zhavoronok A. et al. (2025) analyzed the effectiveness of financial management systems, studied global experience and Ukrainian practice of implementing models of higher education institutions.

Paul P. K. et al. (2023), Popelo O. et al. (2024) study the educational technology and e-learning sector in improving knowledge management systems, analyzing growth issues, financial and economic challenges, and explore global trends in the digitalization of universities in accordance with the sustainability concept. Sun X. (2022), Zhuravlova Y. et al. (2022), Kholiavko N. et al. (2023) analyze the management, financial regulation and impact on the pedagogical process of modern innovations in the education system, and investigate the activities of EU higher education institutions by implementing the SDGs. Cai H. et al. (2020), Arefiev S. et al. (2022) proposed a practical financial management training system based on innovation and entrepreneurship education, and investigated higher education as a determinant of sustainable development.

Unlike existing studies, this study focuses on the peculiarities of the functioning of educational institutions of different levels and analyzes the influence of various factors on the education system reform, which deepens the understanding of the interrelationships between economic and social aspects. The article emphasizes the importance of adapting financial management to the modern needs of a market economy, and provides new perspectives through the study of European experience, which may reveal new approaches to improving financial management in Ukraine. The study of educational financing models reveals both positive and controversial aspects, suggesting specific areas for improvement, which makes the article a valuable addition to existing research.

The purpose of this article is to study the features of financial management in the context of reforming the education system.

Methodology

In the process of studying the effectiveness of financial management in education during the reform of its system, the methodology provides for a comprehensive approach aimed at assessing the efficiency of resource use and identifying reserves for increasing the effectiveness of financing.

The basis of the analysis is the gross domestic product indicator, which allows us to determine the absolute costs of education and compare them with the national capabilities of the economy. The share of education spending in GDP shows the priority of public investments in the education, and the dynamics of this indicator allows us to assess whether the increase in resource support is provided in response to the needs of reforms (Table 1).

Table 1. Methodology for calculating education expenditure indicators in Ukraine

Indicator	Formula / Algorithm	Appointment
Absolute education (AE) spending	$AE = GDP \left(\frac{Expenditure\ Share}{100} \right)$	Converts the share of costs into monetary terms for further analysis
Distribution of expenses by education level (%)	$\% of\ level = \left(\frac{Cost\ per\ level}{AE} \right) 100$	Shows the share of funds allocated to each level of education

Monetary costs at the level of education	$Level\ Cost = AE \left(\frac{\% \text{ of level}}{100} \right)$	Allows you to assess the resource provision of a specific level of education
Structure of funding sources (%)	$\% \text{ source} = \left(\frac{Source\ costs}{AE} \right) 100$	Reflects the share of funding from state, local budgets, private funds and grants
Cash expenses by source	$Source\ costs = AE \left(\frac{\% \text{ source}}{100} \right)$	Estimates the amount of resources from each funding source
Cost dynamics	$\Delta = Costs\ 2024 - Costs\ of\ year\ n$	Identifies trends in growth or decline in education spending
Comparison with other countries (%)	$\Delta\% = Ukraine's\ share - Other\ country's\ share$	Allows you to assess Ukraine's international position on education financing
Comparison of absolute costs with other countries	$\Delta = AE\ of\ Ukraine - AE\ of\ another\ country$	Compares the resource provision of the education system at the international level
Comprehensive analysis algorithm	<ol style="list-style-type: none"> 1. Definition of GDP and expenditure share 2. Calculation of absolute costs 3. Distribution by levels and sources 4. Dynamics calculation 5. Comparison with other countries 6. Interpretation 	Provides systematic analysis of financial management and preparation of recommendations for education reform

*Source: generated by the author.

Further analysis of absolute expenditures allows us to determine the real amount of resources directed to education and compare them with the indicators of other countries, including the average for the EU, the USA and other countries, and thereby assess Ukraine's lag or advantages in the global context.

Analysis of the distribution of costs by education levels makes it possible to determine the effectiveness of resource redistribution and increase the efficiency of financing individual segments of the education system. Analysis of the structure of funding sources allows you to assess the dependence of education on state and local budgets, private funds of the population and grants or international aid. Monetary costs by sources are determined in a similar way, which allows you to identify potential risks and reserves for optimizing financing.

Comparing the costs of 2024 with previous years allows us to assess the dynamics of financing and identify trends in changes in the resource provision of education. The generalization of all these indicators is carried out through the systematization of calculation algorithms, which

includes determining absolute costs, distribution by levels and sources, calculating the dynamics of costs, and constructing comparative analytical indicators.

This approach provides a comprehensive vision of the financial management of education, emphasizes the need to increase its efficiency, allows assessing the impact of reforms, identifying priority areas for resource provision, and developing recommendations for optimizing public and private spending to ensure more effective and balanced financing of the education system in the context of reform.

Results

Conditions of uncertainty, unfavorable security situation in the country, economic crisis affect the financial condition of the education system and other institutions that carry out their activities in the field of science and education. At the same time, new vectors of economic development require improvement of approaches to the issue of financial support of the educational sector. These aspects act as a factor complicating the management of educational institutions, since they

face issues not only of effective implementation of the educational process, but also of ensuring financing, material resources, and personnel. Thus, some scientists argue that achieving long-term financial sustainability of the institution is not possible without solving current problems (Shofolova N., 2022). That is why effective management is systemic in nature.

Analysis of education spending based on GDP and the share of spending in GDP allows comparing this indicator between countries with

different levels of economic development, since large absolute amounts of spending do not always correspond to a high share in GDP, and helps to assess the priority of funding and the effectiveness of its use on a national scale (Table 2).

Analyzing the indicators in Table 2, it is possible to note significant differences between countries both in terms of the scale of their economies and in terms of priorities for financing education.

Table 2. Analysis of education spending based on GDP

Country	GDP, billion USD				% of GDP on education				2024 to		
	2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023
USA	23300	25500	26000	27200	5.4	5.4	5.5	5.5	+0.1	+0.1	—
France	2800	2780	3061	3161	5.4	5.4	5.5	5.5	+0.1	+0.1	—
Germany	4000	4070	4526	4660	4.8	4.8	4.9	4.9	+0.1	+0.1	—
Denmark	350	360	365	380	5.9	5.9	6.0	6.0	+0.1	+0.1	—
Sweden	540	560	570	585	6.9	6.9	7.0	7.0	+0.1	+0.1	—
Belgium	620	640	650	670	6.2	6.2	6.3	6.3	+0.1	+0.1	—
Austria	430	440	445	460	5.2	5.2	5.3	5.3	+0.1	+0.1	—
Slovakia	110	120	125	130	4.7	4.7	4.8	4.8	+0.1	+0.1	—
Lithuania	60	65	68	70	4.1	4.2	4.2	4.3	+0.2	+0.1	+0.1
Czech Republic	250	260	270	280	4.2	4.2	4.3	4.3	+0.1	+0.1	—
Spain	1400	1400	1450	1480	4.4	4.4	4.5	4.5	+0.1	+0.1	—
Portugal	230	240	245	250	4.5	4.5	4.6	4.6	+0.1	+0.1	—
Slovenia	55	58	60	63	4.9	4.9	5.0	5.0	+0.1	+0.1	—
Luxembourg	90	95	98	102	3.7	3.7	3.8	3.8	+0.1	+0.1	—
EU average	—	—	—	—	4.9	4.9	5.0	5.0	+0.1	+0.1	—
Great Britain	3000	3100	3200	3300	5.5	5.5	5.6	5.6	+0.1	+0.1	—
USA	23300	25500	26,000	27200	5.4	5.4	5.5	5.5	+0.1	+0.1	—
Australia	1700	1820	1880	1950	6.1	6.1	6.2	6.2	+0.1	+0.1	—
Chile	300	310	315	330	6.5	6.5	6.6	6.6	+0.1	—	—
Colombia	330	350	360	380	6.6	6.6	6.7	6.7	+0.1	—	—
New Zealand	210	230	235	245	6.0	6.0	6.1	6.1	+0.1	+0.1	—
Israel	400	420	430	450	7.9	8.0	8.0	8.1	+0.2	+0.1	+0.1
Ukraine	200	220	230	250	5.1	5.9	6.4	7.0	+1.9	+1.1	+0.6

**Source: calculated by the authors based on OECD, Analytical portal, Official National Unit of the Eurydice Network in Ukraine.*

The leaders in terms of GDP are the USA, the UK and Australia, where the high size of the economy allows, even with a relatively moderate share of education spending of 5–6%, to provide significant resources for the education system, which contributes to maintaining high standards of education and innovation. At the same time, countries with smaller GDPs, including Lithuania, Slovenia, Slovakia and the Czech Republic, even

with a moderate or growing percentage of education spending, are limited in their ability to generate large absolute resources for the education sector, which poses the task of effective financial management for them. In terms of the dynamics of the share of education spending in GDP, the leaders are Israel and Sweden, where it consistently exceeds 7% and demonstrates a small but steady growth during 2021–2024, which indicates a high

priority for education in budgetary policy. The countries with the lowest indicators are Luxembourg and Lithuania, where the share of

education spending in GDP remained within 3.7–4.3%, reflecting the relatively low level of priority given to education in financial planning (Fig. 1).

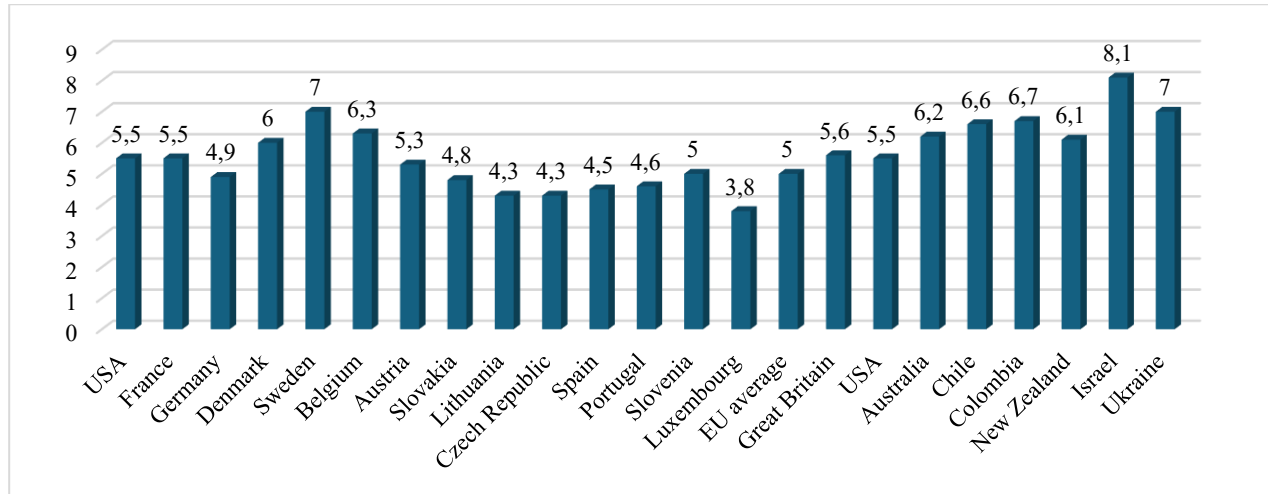


Figure 1. Percentage of GDP spent on education in countries around the world, 2024

**Source: calculated by the authors.*

Ukraine, compared to these countries, demonstrates the most pronounced increase in the share of education spending in GDP - from 5.1% in 2021 to 7.0% in 2024, which not only exceeds the EU average (5.0%), but also brings it closer to the level of leading countries in this indicator. However, the absolute size of Ukraine's economy is significantly smaller than the USA, the UK, Australia and Israel, so the increase in the percentage of spending does not guarantee equivalent financial resources compared to these countries.

This data structure allows us to draw an important conclusion: for Ukraine, the key task is not only to increase the share of education spending in GDP, but also to increase the efficiency of financial management in the education sector, optimize the distribution of funds between levels and areas of education, as well as focus on priority investments in critically important areas. This will ensure a more rational use of limited resources, convergence with the standards of leading

countries, and the formation of a sustainable education system capable of supporting modernization processes and the implementation of reforms in the long term.

Analysis of the indicators in Table 3 allows us to assess both the volume of funding and the dynamics of their changes in different countries, in particular the USA, the UK, Australia, Israel and Ukraine. The leaders in absolute spending remain the USA, where spending increases from 1,258 billion USD in 2021 to 1,496 billion USD in 2024, ensuring stable funding of the education system in conditions of large GDP. The UK and Australia also demonstrate high absolute indicators - 184.8 and 120.9 billion USD in 2024, respectively, reflecting a combination of a significant GDP and a moderate share of spending on education. Israel, although it has a smaller economy, maintains a consistently high level of funding - 36.5 billion USD in 2024, which emphasizes the high priority of education in public spending.

Table 3. Analysis of absolute spending on education 2021–2024, billion USD

Country	2021	2022	2023	2024	2024 to		
					2021	2022	2023
USA	1258	1377	1430	1496	+238	+119	+66
France	151	150	168	174	+23	+24	+6
Germany	192	195	222	229	+37	+34	+7
Denmark	21	21	22	23	+2	+2	+1
Sweden	37	39	40	41	+4	+2	+1
Belgium	38	40	41	42	+4	+2	+1
Austria	22	23	24	24	+2	+1	-
Slovakia	5	6	6	6	+1	-	-
Lithuania	2.46	2.73	2.86	3.01	+0.55	+0.28	+0.15
Czech Republic	10.5	10.9	11.6	12.0	+1.5	+1.1	+0.4
Spain	61.6	61.6	65.3	66.6	+5.0	+5.0	+1.3
Portugal	10.35	10.8	11.3	11.5	+1.15	+0.7	+0.2
Slovenia	2.70	2.84	3.0	3.15	+0.45	+0.31	+0.15
Luxembourg	3.33	3.52	3.72	3.88	+0.55	+0.36	+0.16
Israel	31.6	33.6	34.4	36.5	+4.9	+2.9	+2.1
Chile	19.5	20.15	20.5	21.78	+2.28	+1.63	+1.28
Colombia	21.78	23.1	24.1	25.5	+3.72	+2.4	+1.4
Australia	103.7	111.0	116.6	120.9	+17.2	+9.9	+4.3
New Zealand	12.6	13.8	14.3	14.9	+2.3	+1.1	+0.6
Great Britain	165.0	170.5	179.2	184.8	+19.8	+14.3	+5.6
Australia	103.7	111.0	116.6	120.9	+17.2	+9.9	+4.3
Israel	31.6	33.6	34.4	36.5	+4.9	+2.9	+2.1
Ukraine	10.2	12.98	14.72	17.5	+7.3	+4.52	+2.78

*Source: calculated by the authors based on OECD, Analytical portal, Official National Unit of the Eurydice Network in Ukraine.

The lowest absolute expenditures are observed in Lithuania, Slovenia and Slovakia, where they remain within the range of 3–6 billion USD, reflecting the limited economic opportunities for financing education even with some growth in expenditures as a percentage of GDP. Ukraine demonstrates the most pronounced growth in percentage and absolute terms – from 10.2 billion USD in 2021 to 17.5 billion USD in 2024, which is 7.3 billion higher than in 2021 and 4.52 billion higher than in 2022. Compared to the average value for EU countries, Ukraine still lags behind in absolute amounts, but the growth rates of

expenditures indicate an active increase in investments in the education system (Table 4).

The analysis also emphasizes that even with the increase in funding, Ukraine's absolute capabilities remain limited due to its smaller GDP compared to the leaders, so the key task is to increase the efficiency of financial management, rationally allocate funds, and prioritize spending on critical areas of education in order to maximize results and approach the standards of leading countries. This approach allows not only to assess real funding opportunities, but also to identify strategic directions for reforming the education system in conditions of limited resources.

Table 4. Analysis of the structure and dynamics of sources of education financing in Ukraine

Source	2021		2022		2023		2024		2024 to, billion USD		
	%	billion USD	%	billion USD	%	billion USD	%	billion USD	2021	2022	2023
State budget	87	8.87	87	11.30	86	12.66	85	14.88	+6.01	+3.58	+2.22
Local budgets	4	0.41	4	0.52	3.5	0.51	3	0.53	+0.12	+0.01	+0.02

Private funds of the population	8	0.82	8	1.04	9	1.33	10	1.75	+0.93	+0.71	+0.42
Grants and international assistance	1	0.10	1	0.13	1.5	0.22	2	0.35	+0.25	+0.22	+0.13
Together	100	10.2	100	12.98	100	14.72	100	17.5	+7.3	+4.52	+2.78

*Source: calculated by the authors based on OECD, Analytical portal, Official National Unit of the Eurydice Network in Ukraine.

The indicators in Table 4 show that in the structure of funding sources, the state budget continues to play the largest role, the share of which gradually decreases from 87% in 2021 to 85% in 2024, which in monetary terms reflects an increase in expenditures from 8.87 billion USD to 14.88 billion USD. Local budgets reduce their share from 4% to 3%, while the absolute amounts increase slightly from 0.41 billion USD to 0.53 billion USD, demonstrating the limited impact of local resources on total funding. The share of private funds of the population, which includes payment for contract education, increases from 8% in 2021 to 10% in 2024, and absolute expenditures increase from 0.82 billion USD to 1.75 billion USD, which emphasizes the real weight of student contributions in financing the education system. Grants and international assistance maintain a small but growing share of 1% to 2%, and absolute amounts increase from USD

0.10 billion to USD 0.35 billion, reflecting a gradual increase in external sources of financing.

Analysis of the indicators in Table 5 demonstrates the complex dynamics of increasing budget resources and changing financial priorities, taking into account the real role of contract education in higher education institutions.

Total spending on education increases from 10.2 billion USD in 2021 to 17.5 billion USD in 2024, which reflects increased state support for the education sector and the need for effective management of these resources. In the structure by education levels, the largest share is traditionally occupied by higher education, which in percentage terms increases from 27.4% to 30.0%, and in absolute terms its funding increases from 2.79 billion USD to 5.25 billion USD, including funds received from higher education applicants under contracts.

Table 5. Analysis of the structure and dynamics of expenditures by education level in Ukraine

Education level	2021		2022		2023		2024		2024 to, billion USD		
	%	billion USD	%	billion USD	%	billion USD	%	billion USD	2021	2022	2023
Preschool education	15.9	1.62	15.5	2.01	15.2	2.24	15.0	2.63	+1.01	+0.62	+0.39
Primary education	20.5	2.09	20.0	2.60	19.8	2.91	19.5	3.41	+1.32	+0.81	+0.50
The first stage of secondary education	23.6	2.41	23.0	2.99	22.5	3.31	22.0	3.85	+1.44	+0.86	+0.54
Second stage of secondary education	6.1	0.62	6.3	0.82	6.5	0.96	6.8	1.19	+0.57	+0.37	+0.23
Post-secondary, not higher education	5.1	0.52	5.2	0.68	5.3	0.78	5.4	0.95	+0.43	+0.27	+0.17
Higher education	27.4	2.79	28.5	3.70	29.5	4.34	30.0	5.25	+2.46	+1.55	+0.91
Graduate studies, doctoral studies	1.2	0.12	1.5	0.19	1.7	0.25	1.8	0.32	+0.20	+0.13	+0.07
Together	100	10.2	100	12.98	100	14.72	100	17.5	+7.3	+4.52	+2.78

*Source: calculated by the authors based on OECD, Analytical portal, Official National Unit of the Eurydice Network in Ukraine.

Lower secondary and primary education gradually decrease their share from 23.6% to 22.0% and from 20.5% to 19.5% respectively, however, absolute expenditures for these levels increase due to the general budget increase, ensuring support for basic educational levels. Preschool education decreases its share from 15.9% to 15.0%, but receives more resources in monetary terms – from 1.62 billion USD to 2.63 billion USD. Higher secondary and post-secondary education, as well as doctoral programs, demonstrate a moderate increase in share and a corresponding increase in absolute funding, which emphasizes the state’s desire to support specialized and scientific areas (Fig. 2).

It is advisable to improve the financing system taking into account the indicators of the efficiency of educational institutions (number of students, employment rate of graduates, results of scientific income, participation in international projects, etc.) from a formal feature to practical accounting according to unified standards. Such approaches will allow to avoid formal compliance with requirements and qualitatively improve the results of activities. During the pre-war period of the issue of improving the financial management of educational institutions, the Ministry has already begun to implement directions for equalizing the conditions of activity of institutions regardless of the region of location by introducing a system of regional coefficients.

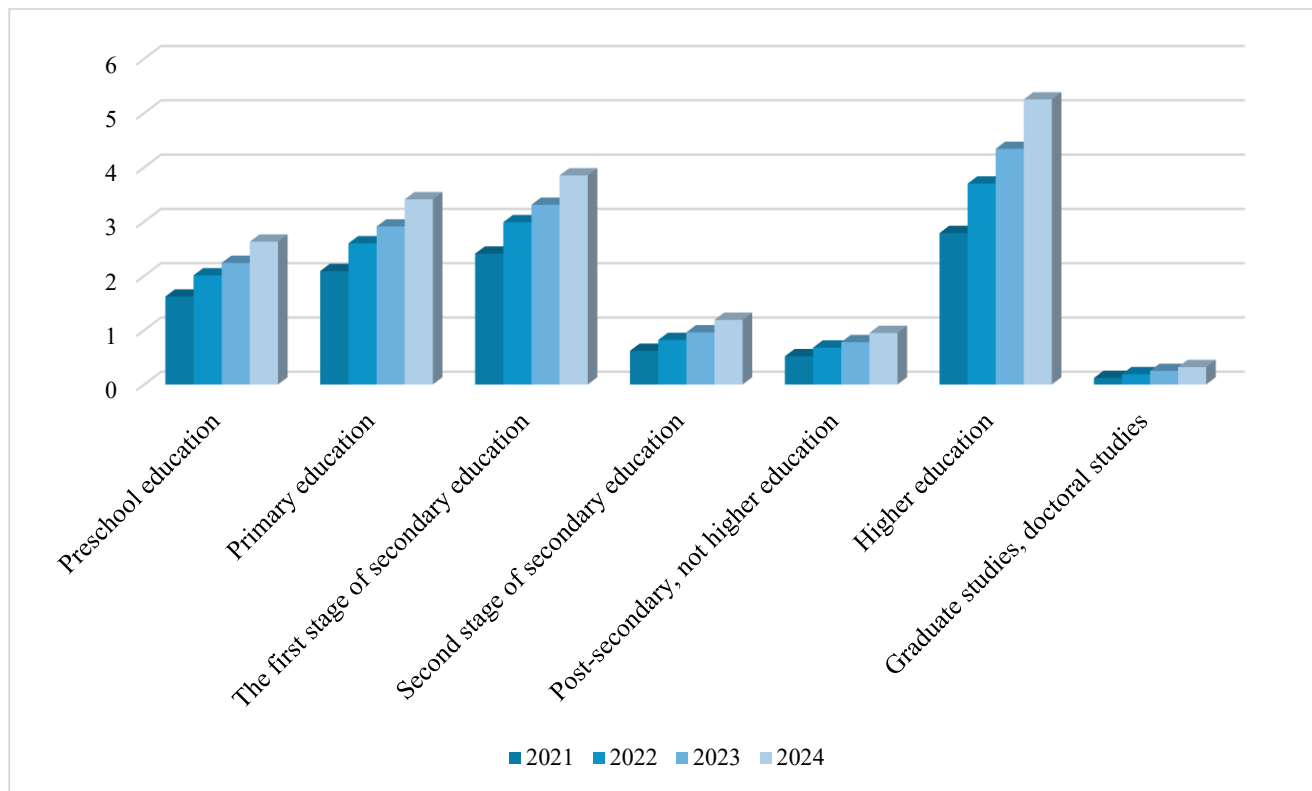


Figure 2. Expenditure structure by education levels in Ukraine, 2021-2023, billion USD

**Source: calculated by the authors.*

However, during the period of hostilities, for institutions of frontline territories and territories of temporary occupation, in comparison with other territories, the issue of distribution of funding is relevant. Educational institutions that were forced to relocate their facilities to more peaceful regions, or

institutions located in the frontline zone, the basic costs of infrastructure and security are different than in more remote territories. It is important to take into account the effectiveness of the activities of institutions, which is expressed by various coefficients (scientific activity, employment of

graduates, etc.), which significantly improves the practical aspect of the education sector.

Considering the general level of education, then in world practice, mechanisms for financing secondary education include the redistribution of funds between institutions, taking into account formulas that make the process more transparent and open. Formulas are designed as to create certain incentives to increase the effectiveness of the educational process and the functioning of the institution.

The main factors that influence the financing of education in different countries of the world include:

- distribution of total costs into certain categories (expenses for teaching staff, capital

expenditures, support staff, etc.), taking into account the level of management at which funding will be distributed (state, regional, community);

- taking into account the degree of autonomy of the educational institution and the use of tools for distributing financial allocations;

- development of an effective system for assessing the effectiveness of financing educational institutions.

Ukraine has a extensive system of private educational institutions of various levels, which allows consumers to freely choose the areas of receiving services. If we examine the experience of some European countries, we can form the following differences (Table 6).

Table 6. Main aspects of financial management in educational institutions in some countries of the world

Country	Financing features	Principles of financial management
Denmark	Academic activity and performance are taken into account (including graduate employment)	Emphasis on managing “costs per student”, controlling academic performance, planning capacities and risks from deductions.
Netherlands	autonomy in the distribution of funds and taking into account the effectiveness of training	KPI-oriented planning, internal quality systems, change project management and costs are being strengthened to achieve agreed goals.
Austria	autonomy in the distribution of funds	development of medium-term financial planning (3–4 years), program-specific budgeting, management of a portfolio of strategic initiatives
Finland	funding is based on performance in education and research plus strategic funding; criteria include employment outcomes and feedback	cost-performance management accounting, quality management as a financial factor, investment in student experience and support
Great Britain	financing is based on an extensive system of benefits and grant support for consumers	The emphasis is on self-financing of educational institutions, but there is strict legislation on the management of funds.
Canada	Most educational institutions have complete autonomy; almost all institutions are financed from the state budget.	when distributing funds, various indicators of their effectiveness are taken into account

**Source: summarized by the authors.*

The issue of prioritizing financial management in the education sector is currently a debatable issue, as there are both positive and contradictory views on the principles of public and private financing. Public financing of private institutions assumes that the management of the institution will depend on the authorities, while private institutions wish to have complete autonomy in matters of their functioning. Today,

some private educational institutions attract external sources of financing (investors), expand grant support, which allows them to improve their financial capacity without losing autonomy.

Conclusions

The article proves that the current stage of reforming the education system is characterized by the growing role of improving financial

management in the context of ensuring the effective functioning and development of educational institutions of various levels. The main goal is to ensure a stable financial condition of educational institutions in the long term with minimizing external risks. It is argued that the effectiveness of the application of financial management tools largely depends on understanding the peculiarities of the functioning of the financial management mechanism, the organization of financial work in educational institutions, the use of material and technical resources, etc. The analysis shows that the Ukrainian education system is actively increasing resources, but the efficiency of their use is becoming critical for ensuring sustainable development and successful implementation of reforms. Effective financial management will optimize the distribution of funds between levels of education, increase the effectiveness of public investments, reduce dependence on unpredictable sources of financing, and ensure transparency and

control over the use of budget resources. In the medium and long term, this creates the prerequisites for improving the quality of education, supporting innovative and scientific areas, and bringing the Ukrainian education system closer to international standards.

In general, we can conclude that today most European educational institutions have quite significant autonomy in the distribution of funds and take into account the effectiveness of training, which is expressed in the study of the international and scientific activity of institutions, the effectiveness of graduates' employment. Ukraine adopts the best practices of European countries and gradually introduces the need to take into account the elements of effectiveness and activity of educational institutions and their graduates. The changes concern all levels of education, since the reforms reflect the needs of the modern labor market and the requirements for specialists.

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