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REINTERPRETATION OF THE FINANCIAL SUPPORT FOR THE DEVELOPMENT OF MUNICIPAL EDUCATION: THE EXPERIENCE OF DECENTRALIZATION REFORM IN UKRAINE

ABSTRACT

The transformation of local self-government systems under decentralization has significantly changed the architecture of education financing and strengthened the role of local authorities in ensuring the accessibility and quality of educational services. In Ukraine, the fiscal decentralization reform initiated in 2014 transferred substantial responsibilities for education management and financing to territorial communities, thereby enhancing their financial autonomy and expanding opportunities for municipal education development. However, disparities in the financial capacity of communities, demographic decline, migration processes, and wartime challenges continue to affect educational accessibility and quality.

The purpose of this study is to analyze financial support for municipal education development under decentralization and to substantiate an integrated approach to enhancing the financial sustainability and quality of educational services at the local level. The methodological framework is based on institutional, comparative, statistical, and systems analysis. The empirical basis includes official data from the Ministry of Finance of Ukraine, the Ministry of Education and Science of Ukraine, the State Statistics Service of Ukraine, and international organizations.

The findings indicate that decentralization has contributed to increasing local budget revenues and expanding opportunities for financing educational infrastructure, digitalization, and inclusive education. Nevertheless, significant disparities in the financial capacity of territorial communities persist, limiting equal access to quality education. The study proposes a cluster model of financial support for municipal education development that integrates state transfers, local budget resources, public-private partnerships, and international financial assistance.

It is substantiated that effective financial support for municipal education requires a balanced combination of fiscal decentralization instruments, fiscal equalization policies, and strategic investment. The proposed approach contributes to strengthening the financial sustainability of the educational system, improving educational quality, and promoting the sustainable development of territorial communities in the context of Ukraine's post-war recovery and European integration.

Keywords: municipal education, fiscal decentralization, local budgets, educational financing, territorial communities, financial support, intergovernmental transfers, educational clusters, public-private partnerships

JEL Classification: H72, H75, I22, I28, R58

INTRODUCTION

Education is one of the most important public goods and a fundamental determinant of sustainable socio-economic development. In the context of the knowledge economy and rapid technological change, educational systems increasingly influence the formation of human capital, labor productivity, innovation capacity, and social cohesion. Investment in education generates long-term economic returns through improved workforce quality,

increased competitiveness, and strengthened institutional resilience. Consequently, ensuring effective financial support for education has become a strategic priority of public policy and a significant area of academic research worldwide.

Over the past decades, many countries have implemented decentralization reforms aimed at improving the efficiency of public administration and enhancing the quality of public services. Fiscal decentralization, in particular, seeks to redistribute powers and financial resources among different levels of government, thereby strengthening local self-government and increasing the responsiveness of public institutions to local needs. In the educational sector, decentralization has transformed traditional models of financing and governance by expanding the role of municipalities in planning, allocating, and managing educational resources.

International experience demonstrates that decentralization can contribute to improving educational outcomes when accompanied by adequate financial resources, effective governance structures, and institutional accountability. At the same time, decentralization may generate fiscal disparities among territories due to differences in economic potential, demographic characteristics, and administrative capacity. Therefore, the effectiveness of educational decentralization depends on achieving a balance between local autonomy and state support through intergovernmental fiscal relations and equalization policies.

Ukraine has been implementing one of the most comprehensive decentralization reforms in Europe since 2014. The reform substantially transformed the architecture of intergovernmental fiscal relations by expanding the revenue base of local budgets and transferring significant expenditure responsibilities to territorial communities. The establishment of capable territorial communities strengthened local fiscal autonomy and increased the role of municipalities in the provision and financing of educational services.

Municipal education has become an important component of local development policy because educational institutions perform not only social functions but also contribute to the formation of human capital and the long-term competitiveness of territories. Education expenditures constitute one of the largest categories of local budget spending in Ukraine, accounting for a significant share of municipal expenditures. The decentralization reform enabled local governments to participate more actively in educational planning, infrastructure modernization, digital transformation, and the development of inclusive educational environments.

The current state of municipal education development in Ukraine reflects both positive achievements and persistent challenges. On the one hand, decentralization has improved the financial autonomy of territorial communities, expanded opportunities for attracting additional resources, and enhanced local responsibility for educational outcomes. On the other hand, considerable disparities remain in the fiscal capacity of communities due to differences in tax potential, economic development, demographic trends, and geographic location. Rural communities, in particular, often encounter difficulties in maintaining educational infrastructure, optimizing school networks, and ensuring equal access to quality educational services.

Additional challenges emerged as a consequence of the full-scale military aggression against Ukraine. The destruction of educational facilities, internal displacement of the population, migration processes, and growing security expenditures have significantly affected local budgets and increased financial pressure on municipalities. Under such conditions, ensuring the resilience and sustainability of municipal education systems has become a strategic objective of public policy and post-war recovery.

Furthermore, Ukraine's European integration process creates additional requirements for educational development. The implementation of European standards necessitates investments in digitalization, inclusive education, quality assurance systems, energy-efficient infrastructure, and innovative educational technologies. These priorities require not only increased financial resources but also new approaches to organizing and financing municipal education.

Despite the considerable scholarly attention devoted to educational finance and fiscal decentralization, insufficient attention has been paid to the reinterpretation of financial support for municipal education development under contemporary socio-economic transformations. Existing studies primarily focus on budgetary mechanisms and intergovernmental transfers, while the integration of multiple financial sources and stakeholder interactions remains underexplored.

Therefore, there is a need to develop new conceptual approaches to financial support for municipal education that combine state transfers, local budget resources, public-private partnerships, and international assistance. In this context, the reinterpretation of financial support for municipal education development acquires particular scientific and practical significance.

LITERATURE REVIEW

The theoretical foundations of educational financing are closely connected with the theory of fiscal federalism. The seminal works of Oates (1972) emphasize that decentralized provision of public goods enhances allocative efficiency because local authorities possess better information regarding citizens' preferences. Similarly, Musgrave (1959) argued that public finance should balance allocation, distribution, and stabilization functions.

Research on fiscal decentralization demonstrates mixed effects on educational outcomes. According to Hanushek and Woessmann (2015), efficient educational systems significantly contribute to economic growth through human capital accumulation. However, decentralization may increase inequalities if the equalization mechanism remains insufficient.

Bahl and Bird (2018) emphasize that successful decentralization requires adequate revenue assignment, intergovernmental transfers, and accountability systems. The authors argue that local governments can effectively manage educational services only when they possess stable financial resources and sufficient administrative capacity.

Studies by Rodríguez-Pose and Ezcurra (2011) indicate that decentralization may stimulate regional development, but disparities between wealthy and poor regions often increase without appropriate fiscal equalization. Similar findings are observed in educational systems where financial capacities differ substantially across municipalities.

International experience demonstrates various models of educational financing. In Poland, educational subventions distributed according to formula-based approaches have become an effective instrument of balancing local disparities following decentralization reforms. Estonia has successfully integrated digital technologies into educational governance, improving resource efficiency and educational quality.

Research conducted by OECD (2017) stresses that local educational governance must combine autonomy with accountability mechanisms. Effective systems require transparent allocation formulas, performance indicators, and long-term investment strategies.

The conceptual foundations of financial support for municipal education development have been extensively studied by international scholars within the frameworks of decentralization, fiscal federalism, and educational policy. Bray (1996) emphasizes the role of local communities in education financing and highlights the importance of community participation in mobilizing resources for educational development. Melo (2024) investigates decentralized public finance mechanisms and their implications for local public goods provision, including education.

Issues of budget inequality and educational resource allocation are addressed by Duncombe and Yinger (1998), who advocate for improving school aid formulas and intergovernmental transfer mechanisms to ensure equitable access to quality education. Hanushek (1996) argues that educational outcomes depend not only on the amount of financial resources allocated to schools but also on the efficiency of resource utilization and management. Rechul and Surówka (2024) identify local budgets as a key source of education financing under decentralization reforms and emphasize the growing role of municipalities in supporting educational institutions.

Research by Wang and Cheng (2023) confirms that fiscal decentralization significantly affects municipal fiscal health and the capacity of local governments to provide public services, including education. Similarly, Meoded and BenDavid-Hadar (2025) demonstrate that effective education financing requires a balance between local autonomy and equalization mechanisms to ensure equity in access to educational resources.

Lewis (2022) examines the relationship between local government mandates and fiscal decentralization, emphasizing their implications for budgetary flexibility and public service provision. Empirical evidence from Romanian municipalities provided by Onofrei, Bostan, Chigu, and Vățamanu (2024) indicates that the efficiency of local public finance depends on an appropriate balance between local financial autonomy and state regulation.

In addition, Vedel and Delvolvé (1992) explore the legal foundations of public administration in decentralized governance systems, while Tawil (2011) highlights the importance of safeguarding the right to education during war and armed conflicts, which is particularly relevant for contemporary Ukraine.

Ukrainian scholars have substantially contributed to the study of educational finance and decentralization. Melnyk (2012) emphasized the importance of improving educational resource allocation at the regional level, while Kovalenko (2017) analyzed the impact of decentralization on educational expenditures and local financial autonomy. Slatvinska and Androsova (2024) highlighted contemporary challenges of financing education under digital transformation. Maslov (2022) comprehensively considers all aspects of the preparation and implementation of public-private partnership projects in the field of education from the point of view of economic, financial, social, legal, technical, and environmental parameters in order

to determine the needs and opportunities for their implementation, the necessary investments (resources), and expected results. However, the issue of financial support for municipal education development, particularly in the context of post-war recovery and European integration, remains insufficiently explored, which determines the relevance of this study.

Recent studies emphasize challenges associated with war-related destruction and educational recovery. International organizations, including the World Bank (2023) and UNESCO (2024), estimate substantial investment needs for restoring educational infrastructure damaged during military aggression.

Despite substantial scholarly achievements, several aspects of financial support for municipal education development remain insufficiently explored. In particular, the existing literature tends to examine educational financing and decentralization separately, while municipal education rarely serves as an independent object of financial analysis. Furthermore, limited attention has been devoted to the transformation of education financing mechanisms under wartime challenges, post-war recovery, and Ukraine's European integration processes.

This highlights the need for further research aimed at developing an effective financial support mechanism for municipal education development capable of ensuring its sustainability and effectiveness under contemporary conditions.

AIMS AND OBJECTIVES

The aim of this study is to assess the transformation of financial support for municipal education under decentralization reforms in Ukraine and develop an integrated model for improving financial sustainability and educational quality. The objectives of the study are:

- to examine the theoretical foundations of financial support for municipal education development under fiscal decentralization;
- to analyze the transformation of municipal education financing in Ukraine during the implementation of decentralization reform;
- to assess the dynamics of local budget revenues, educational expenditures, and the financial capacity of territorial communities;
- to identify key challenges and disparities affecting the financial sustainability of municipal education systems under wartime conditions;
- to develop and substantiate an author's cluster model of financial support for municipal education development aimed at improving resource mobilization, strengthening stakeholder interaction, and enhancing the financial sustainability of territorial communities under decentralization conditions.

METHODS

The study is based on an interdisciplinary methodological approach that integrates theoretical and empirical methods to investigate the transformation of financial support for municipal education development under decentralization reform in Ukraine.

The methodological framework of the study is grounded in the theories of fiscal federalism, public finance, and human capital. Institutional analysis was used to examine transformations in educational governance and financial relations under decentralization reform. Comparative analysis enabled the assessment of international practices in municipal education financing.

Statistical methods were applied to evaluate local budget revenues, educational expenditures, intergovernmental transfers, and the financial capacity of territorial communities. The empirical basis includes data from the Ministry of Finance of Ukraine, the Ministry of Education and Science of Ukraine, the State Statistics Service of Ukraine, and international organizations.

Systems and structural-functional analyses facilitated the identification of relationships among financial resources, governance mechanisms, and educational outcomes. The applied methodology enabled the reinterpretation of financial support for municipal education development and the substantiation of a cluster model aimed at enhancing the sustainability and quality of educational services.

RESULTS

The decentralization reform in Ukraine has substantially transformed the financial architecture of the education system by transferring expenditure responsibilities and revenue-generation powers to territorial communities. As a result, local self-government bodies have become key actors in financing educational institutions, maintaining educational infrastructure, and ensuring access to high-quality educational services. At the same time, despite the increased financial capacity of local budgets, significant disparities in the financial resources of communities persist, limiting equal access to educational opportunities and quality education.

Under these conditions, the development of cluster-based approaches to the financial support of municipal education has become particularly important. Such approaches facilitate the diversification of funding sources, attract additional investments, strengthen cross-sectoral cooperation, and enhance the financial sustainability of territorial communities.

To assess the impact of decentralization on the financial capacity of local governments and educational financing, the dynamics of local budget revenues and educational expenditures during 2015–2025 are presented in Table 1. The analysis of these indicators makes it possible to identify long-term trends in educational financing, evaluate changes in expenditure priorities, and determine the role of local governments in ensuring sustainable educational development.

Table 1. Dynamics of local budget revenues and educational expenditures in Ukraine, 2015–2025. Note: *Estimated according to the Ministry of Finance of Ukraine and UNICEF budget projections. **Calculated by the author based on the Law of Ukraine "On the State Budget of Ukraine for 2025", medium-term budget forecasts, and local budget execution trends. (Source: compiled by the author based on data from the Ministry of Finance of Ukraine, the State Treasury Service of Ukraine, the Open Budget Portal, and UNICEF)

Year	Local Budget Revenues, UAH billion	Educational Expenditures of Local Budgets, UAH billion	Share of Education in Local Budget Expenditures, %
2015	99.8	84.0	32.8
2016	146.6	129.4	34.1
2017	192.7	177.8	35.5
2018	234.1	210.0	36.4
2019	275.0	238.8	37.0
2020	290.1	252.3	38.2
2021	351.9	291.8	39.1
2022	393.1	315.7	40.3
2023	441.9	248.0	39.5
2024*	496.5	260.0	40.0
2025**	538.0	279.5	40.8

The data presented in Table 1 reveal a profound transformation of local public finance in Ukraine during the implementation of fiscal decentralization reforms. Between 2015 and 2025, local budget revenues increased from UAH 99.8 billion to an estimated UAH 538.0 billion, representing more than a fivefold increase. Such growth reflects the expansion of local fiscal autonomy, improvements in tax administration, and the reassignment of revenue sources to territorial communities.

A significant acceleration in revenue growth occurred after the introduction of decentralization measures in 2015–2016, when local governments obtained increased shares of personal income tax revenues and broader authority in collecting local taxes and fees. Consequently, local budgets became more financially independent and capable of financing social infrastructure, including education.

Educational expenditures of local budgets also demonstrated a substantial upward trend. Expenditures increased from UAH 84.0 billion in 2015 to an estimated UAH 279.5 billion in 2025. Overall growth exceeded 230%, confirming that education remains one of the highest priorities of local public finance. The increase in educational spending reflects not only rising labor costs and inflationary pressures but also greater investments in educational infrastructure, digital technologies, safety measures, and inclusive learning environments.

Particularly noteworthy is the growth in the share of education within total local budget expenditures. This indicator increased from 32.8% in 2015 to 40.8% in 2025, demonstrating the strengthening role of municipalities in ensuring access to quality educational services. In many territorial communities, education constitutes the largest expenditure category, often exceeding healthcare and housing services.

However, the dynamics of educational expenditures reveal certain structural shifts. In 2023, educational expenditures decreased compared with 2022 despite growing local revenues. This reduction can be explained by wartime conditions, the reallocation of budget resources toward defense and security needs, demographic losses caused by migration, and optimization of the educational network in certain regions.

The projected increase in educational expenditures in 2024–2025 indicates gradual adaptation of local governments to wartime realities and growing investment in educational recovery. The implementation of international assistance programs, including the Ukraine Facility and donor-funded reconstruction initiatives, creates additional opportunities for restoring damaged educational infrastructure and modernizing municipal education systems.

Overall, the results indicate that fiscal decentralization has strengthened the financial basis of municipal education development; however, ensuring equitable access to educational services still requires effective fiscal equalization mechanisms and diversified funding sources.

The transformation of financial support has been accompanied by substantial changes in the educational infrastructure of territorial communities. The decentralization process coincided with demographic decline, migration flows, urbanization, and wartime challenges, significantly affecting the structure and operation of educational institutions across the country.

Optimization of the educational network became one of the key directions of educational policy aimed at improving efficiency, rationalizing expenditures, and ensuring the long-term sustainability of municipal education systems. In particular, the creation of hub schools and branch institutions was intended to enhance educational quality while maintaining access to education in rural areas.

Official statistics indicate a gradual reduction in the number of general secondary education institutions, primarily due to demographic trends, administrative-territorial reform, and military-related destruction of infrastructure. At the same time, educational expenditures per student increased substantially, reflecting investments in infrastructure modernization, digital technologies, inclusive education, and safety requirements.

The main indicators characterizing the transformation of educational infrastructure in Ukraine during 2015–2025 are summarized in Table 2.

Table 2. Dynamics of educational infrastructure in Ukraine, 2015–2025. Note: *Estimated on the basis of the Ministry of Education and Science of Ukraine, the State Statistics Service of Ukraine, and the Institute of Educational Analytics. (Source: compiled by the author using data from the State Statistics Service of Ukraine, the Ministry of Education and Science of Ukraine, the Institute of Educational Analytics, and the State Education Quality Service of Ukraine)

Indicator	2015	2020	2023	2024	2025*
General secondary schools, units	17.337	14.873	12.701	12.586	12.450
Students, thousand persons	3.846	4.230	3.908	3.804	3.744
Teachers, thousand persons	440	438	425	422	420
Territorial communities, units	159	1.469	1.469	1.469	1.469
Average expenditure per student, UAH	16.200	28.700	39.500	43.800	46.000

The data in Table 2 indicate significant transformations in Ukraine's educational infrastructure under decentralization reforms and wartime conditions. Between 2015 and 2025, the number of general secondary schools decreased from 17,337 to an estimated 12,450 units, representing a reduction of 28.2%. This trend is primarily associated with demographic decline, optimization of school networks through the creation of hub schools, and the destruction or temporary occupation of territories caused by military aggression.

The number of students increased from 3.85 million in 2015 to 4.23 million in 2020 but subsequently declined to an estimated 3.74 million in 2025. The decrease can be explained by migration processes, internal displacement, lower birth rates, and wartime population losses. These demographic changes have directly affected demand for educational services and the distribution of financial resources among communities.

The number of teachers remained relatively stable, declining moderately from 440 thousand in 2015 to 420 thousand in 2025. However, the educational sector continues to face challenges related to teacher shortages, migration of qualified staff, and workforce aging, particularly in rural areas.

A notable trend is the substantial increase in average expenditure per student, which rose from UAH 16,200 in 2015 to UAH 46,000 in 2025. This growth reflects higher teacher salaries, inflationary pressures, investments in digitalization, inclusive education, safety measures, and reconstruction of educational infrastructure damaged during the war.

The stability in the number of territorial communities following the completion of administrative reform created institutional conditions for more effective educational governance. Nevertheless, significant disparities in fiscal capacity persist among municipalities. Financially stronger communities possess greater opportunities for educational modernization, whereas weaker communities remain highly dependent on intergovernmental transfers.

Overall, the findings suggest that Ukraine's educational system is gradually shifting from an extensive model toward a more efficient and financially sustainable network. However, ensuring equal access to quality education requires further strengthening of the fiscal equalization mechanism and targeted support for vulnerable communities.

The analysis of financial and institutional transformations in municipal education demonstrates that decentralization reforms have significantly expanded the capacity of territorial communities to manage educational development. At the same time, the persistence of interregional disparities, demographic challenges, and wartime risks indicates the need to rethink traditional approaches to educational financing.

Under such conditions, ensuring the long-term sustainability of municipal education requires the diversification of financial resources, the activation of public-private partnership mechanisms, and the development of effective collaboration among local governments, educational institutions, businesses, and international partners within the framework of financial support for the educational development of territorial communities (Figure 1).

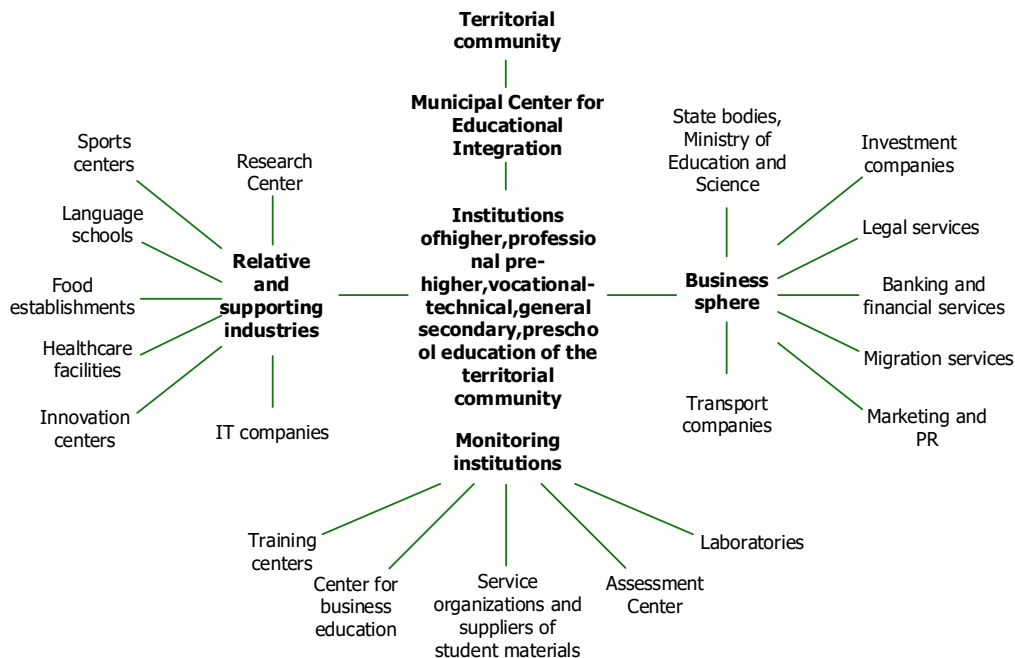


Figure 1. Author's cluster model of interaction among municipal education stakeholders for enhancing financial support.

Figure 1 presents the author's cluster model of interaction among municipal education stakeholders, developed in light of the outcomes of decentralization reforms in Ukraine and the need to reinterpret the mechanisms of financial support for municipal education development. The model places institutions of higher education, professional pre-higher education, vocational education and training, general secondary education, and preschool education within a territorial community at its core, around which a network of institutional, organizational, and financial-economic relationships is formed.

The key coordinating element of the proposed model is the Municipal Center for Educational Integration, which ensures the alignment of interests among territorial communities, public authorities, businesses, research institutions, and civil society organizations. Such an approach enables the transition from a traditional budget-based model of educational financing to a multi-channel system of financial resource mobilization.

Within the cluster framework, financial support for municipal education development is based on the integration of multiple funding sources, including state and local budget resources, educational subventions, targeted government programs, grants from international organizations, private sector investments, charitable contributions, and public-private partnership mechanisms. Under decentralization, territorial communities have acquired expanded powers in the allocation of budgetary resources, thereby creating preconditions for the formation of an effective local financial policy in the field of education.

The use of budgetary resources within the proposed model is aimed not only at financing the current expenditures of educational institutions but also at implementing investment projects, modernizing educational infrastructure, digitalizing educational processes, promoting inclusive education, and enhancing the quality of human capital. At the same time, the limited availability of budgetary resources under wartime conditions increases the need to attract alternative funding sources and strengthen the financial sustainability of municipal education.

Public-private partnership mechanisms play a significant role in ensuring the sustainable development of municipal education by facilitating the consolidation of resources from the state, businesses, and local communities. The participation of investment companies, financial institutions, IT firms, service organizations, and other economic actors enables the implementation of joint educational projects, the establishment of modern laboratories, assessment centers, innovation hubs, and research centers, as well as the expansion of opportunities for vocational training in accordance with the needs of regional labor markets.

The proposed cluster model creates an institutional environment for effective interaction among education, science, business, and government, ensures the diversification of financial flows, and enhances the adaptability of the municipal education system to contemporary socio-economic and wartime challenges. The implementation of this model will contribute to strengthening the financial autonomy of territorial communities, improving the quality of educational services, and fostering competitive human capital as a foundation for sustainable local development.

However, the effectiveness of implementing the cluster-based model of financial support largely depends on the institutional capacity of territorial communities, the level of partnership development among educational stakeholders, and the availability of a supportive regulatory and legal framework. The analysis of Ukraine's decentralization reform demonstrates that, alongside new opportunities for strengthening local financial autonomy and improving educational governance, a number of constraints and risks have emerged. These factors may hinder the development of municipal educational clusters and reduce the effectiveness of the financial mechanisms designed to support their sustainable functioning and long-term development. The major constraints and limiting factors affecting the implementation of cluster interaction in municipal education include:

- the insufficient development of the legislative framework regulating the establishment and functioning of clusters, particularly educational clusters;
- the underdeveloped municipal small business sector, as well as inadequate infrastructural and organizational conditions that would encourage private investment in the development of education at the local level;
- the low level of effective communication among key stakeholders, which is particularly evident in the relationships among business, education, and government;
- the predominance of factor-based conditions, primarily access to inexpensive resources, as the main determinant of the successful development of municipal educational clusters;
- insufficient information transparency, which undermines the trust of potential cluster participants and contributes to unfair competition;
- the existence of adverse trends that deteriorate the business environment and negatively affect the functioning of economic entities;
- unfavorable national conditions characterized by a high degree of socio-economic risks, particularly those associated with wartime challenges;
- the insufficient development of associative structures that are unable to effectively formulate and promote the priorities and interests of municipal businesses;
- the prevalence of short-term planning approaches, given that the tangible outcomes of educational cluster development typically emerge only over an extended period.

The identified constraints indicate that traditional approaches to the financial support of municipal education no longer fully correspond to the development needs of territorial communities under the conditions of decentralization, wartime challenges, and European integration transformations. This necessitates the search for new organizational and financial approaches capable of ensuring effective coordination of the interests of all stakeholders involved in the educational process and the diversification of funding sources.

Within the framework of reinterpreting the financial support for municipal education development, we propose a cluster model based on the principles of partnership, network interaction, and multi-channel financing. The implementation of this model envisages the gradual formation of interconnected components of cluster cooperation, among which the creation

of a unified information space, the improvement of educational and research processes, the enhancement of the professional capacity of educational personnel, as well as the development of an effective educational policy within territorial communities and a modern mechanism for the financial support of municipal education are of particular importance.

1. *Establishment of a unified information environment*, in which the interaction between the leading educational institution and other participants in the educational process at the local level generates new knowledge and information as key drivers of socio-economic and educational development. This objective can be achieved through:
 - the creation and exchange of new information, including the provision of data to educational institutions regarding measures aimed at optimizing financial resources, improving the quality of educational services through the implementation of innovative technologies and funding mechanisms, disseminating best domestic and international practices, and organizing seminars, workshops, and training events;
 - the unity of the financial space, which involves the settlement of outstanding budgetary obligations in the education sector, ensuring their full elimination, as well as conducting financial settlements with suppliers and contractors upon the request of organizations participating in the municipal educational cluster, thereby improving their financial sustainability;
 - the unity of the educational and scientific space, aimed at preserving educational cohesion within territorial communities and coordinating the range of educational services provided at all levels of education and financed during a given fiscal year;
 - the unity of the legal space, through the provision of methodological and advisory support to educational institutions, enterprises, and organizations participating in the cluster network on financial, legal, and regulatory matters;
 - practical assistance to educational institutions, enterprises, and organizations in protecting their economic interests, obtaining and renewing licenses for educational activities, and ensuring compliance with regulatory requirements;
 - consulting and methodological support for educational institutions, enterprises, and organizations in the field of material and technical provision of municipal education, including infrastructure modernization and resource management.

The formation of a unified information, financial, educational, and legal environment within the municipal educational cluster enhances institutional cooperation, increases the efficiency of resource allocation, and creates favorable conditions for sustainable educational development under decentralization.

2. *Improvement of Educational and Research Processes*. An individual municipal educational institution is highly dependent on financial resources administered by public authorities at both local and national levels. By becoming integrated into an educational network, educational institutions gain access to the following opportunities:
 - Implementation of effective educational technologies, including the introduction of innovative and experimental educational approaches that comply with contemporary educational standards, local development priorities, and modern regulatory requirements.
 - Development and improvement of financing mechanisms for municipal education, as well as the adoption of effective managerial and financial decision-making technologies aimed at enhancing the efficiency of educational governance.
 - Modernization and restructuring of municipal education systems through adequate financial support, accompanied by the activation of scientific and innovation capacities and the integration of advanced inclusive educational practices and international teaching models.
 - Implementation of strategic and incentive-based solutions, including the selection and evaluation of educational project portfolios in accordance with contemporary European educational standards and the revision of previously introduced educational programs.
 - Development of a municipal education project catalog, aimed at systematizing investment priorities and facilitating the attraction of financial resources from public, private, and international sources.
 - Application of innovative operational models within the Municipal Center for Educational Integration, ensuring the provision of high-quality educational services and strengthening cooperation among educational institutions and stakeholders.

3. *Enhancing the Professional Capacity of Educational Personnel.* This principle of the municipal educational cluster involves continuous professional development of administrators, lecturers, and teachers, as well as the implementation of incentive mechanisms and social protection measures for educational staff.

The functioning of municipal educational clusters within territorial communities in Ukraine can provide numerous benefits to their participants.

First, it expands opportunities for attracting financial resources to the education sector through the consolidation of the financial capacities of cluster participants, the attraction of external investments, joint participation in grant-funded educational projects, and pooling financial resources to secure access to credit financing.

Second, the cluster approach reduces the dependence of educational institutions on state budget financing. The availability of municipal financial resources and contributions from business entities participating in municipal educational clusters facilitates the resolution of educational challenges and reduces expenditures associated with addressing systemic problems in the sector. Moreover, the provision and consumption of educational services become more efficient, as all stakeholders within the territorial community share a common interest in ensuring high-quality educational outcomes, with resources being utilized within the municipal educational cluster itself.

Third, the implementation of municipal educational clusters ensures the sustainable functioning of the education sector at the local level and stimulates the development of related industries. It contributes to job creation, revitalizes educational infrastructure in specific regions, and supports the development of educational institutions of different levels. Furthermore, the clustering of municipal education introduces a new stage of educational integration that would be difficult to achieve if educational institutions operated independently in a competitive market environment.

Fourth, the integration of organizations at the community level fosters a fundamentally new type of relationship based on trust, mutual responsibility, and cooperation among cluster participants. Such interaction contributes to the formation of social capital and promotes a new culture of partnership-oriented governance in municipal education.

4. *The Formation of Educational Policy in Territorial Communities* and the Effective Financial Support of Municipal Educational Clusters are determined by the following factors:

- Participation in educational investment projects, including the preparation of documentation for competitive selection procedures related to the implementation of projects and the provision of educational services, thereby maximizing investment inflows into the education sector.
- International educational cooperation, involving collaboration with foreign partners in the structural modernization of education systems, scientific support for the implementation of innovative educational technologies, and the enhancement of the competitiveness of educational services on a mutually beneficial basis.
- Cooperation among cluster participants, which ensures the efficient utilization of the collective financial potential of network-based structures.
- Reduction of modernization costs in the education sector through the delegation of specific activities to partners specializing in particular fields of expertise.
- Enhancement of the efficiency of financial support mechanisms for municipal education through the refinement of financing instruments and the establishment of long-term partnership relations.
- Improvement in the effectiveness of managerial functions through the division of labor, specialization, and the involvement of specialized educational organizations and institutions.
- Increased efficiency in the provision of municipal educational and support services, accompanied by the allocation of necessary resources to ensure the delivery of high-quality educational services.
- Strengthening the reliability and resilience of network partners within the framework of investment, financial, educational, and scientific cooperation.

It should be emphasized that a municipal educational cluster represents a distinctive form of cluster organization, as it constitutes a type of educational activity primarily oriented toward meeting the educational needs of territorial communities. Its principal objective is to provide high-quality and modern educational services through the effective integration of educational institutions, public authorities, businesses, and civil society organizations, while actively attracting additional sources of financial support.

Unlike traditional models of educational governance, municipal educational clusters facilitate the diversification of funding sources by combining public financial resources with private investments, international grants, charitable contributions,

and public-private partnership mechanisms. Such an approach enhances the financial sustainability of educational institutions, strengthens their innovation capacity, and promotes the efficient allocation of resources within territorial communities.

Moreover, the cluster model contributes to the development of a collaborative educational ecosystem in which stakeholders jointly address strategic challenges related to educational quality, infrastructure modernization, digital transformation, and human capital development. Consequently, municipal educational clusters serve not only as an instrument for improving educational services but also as a mechanism for ensuring the long-term socio-economic development and competitiveness of territorial communities.

Under the decentralization reform in Ukraine, municipal educational clusters have acquired new significance as instruments for mobilizing financial resources and strengthening the financial autonomy of territorial communities. The transfer of powers and financial responsibilities to the local level has created preconditions for the development of innovative approaches to the financial support of municipal education based on the principles of subsidiarity, partnership, and results-oriented governance. In this context, the reinterpretation of financial support for municipal education development implies a transition from a predominantly budget-based financing model to a diversified system that combines budgetary resources, private investments, international technical assistance, grant funding, charitable contributions, and public-private partnership mechanisms.

The functioning of municipal educational clusters creates opportunities for the joint development of new educational products and services, the implementation of innovative projects, the modernization of educational infrastructure, and the improvement of the quality and accessibility of education. The synergistic interaction among educational institutions, local governments, businesses, and civil society organizations contributes to more efficient resource allocation, lower transaction costs, and enhanced competitiveness of education at the municipal level.

Cluster interaction contributes to human capital development, the formation of regional innovation ecosystems, and the strengthening of the resilience of territorial communities to contemporary socio-economic and wartime challenges. Therefore, municipal educational clusters serve not only as instruments for educational development but also as important drivers of sustainable local development and the post-war recovery of Ukraine.

DISCUSSION

The findings of this study confirm that fiscal decentralization has substantially transformed the financial architecture of municipal education in Ukraine. The increase in local budget revenues and educational expenditures demonstrates that territorial communities have become key actors in ensuring the provision and development of educational services. These results are consistent with the theory of fiscal federalism developed by Oates (1972), which argues that local governments are better positioned to allocate resources efficiently according to local needs.

The observed growth in local fiscal capacity supports the conclusions of Bahl and Bird (2018), who emphasized that successful decentralization requires an appropriate assignment of revenue sources and expenditure responsibilities. The Ukrainian experience demonstrates that increased fiscal autonomy creates additional opportunities for educational investment, infrastructure modernization, and innovation. However, the study also reveals that decentralization alone cannot eliminate territorial inequalities in educational provision.

The results are in line with the findings of Rodríguez-Pose and Ezcurra (2011), who argued that fiscal decentralization may generate uneven regional development when equalization mechanisms remain insufficient. In Ukraine, wealthier municipalities possess stronger tax bases and greater opportunities for educational investment, whereas rural and war-affected communities remain highly dependent on state transfers. Similar conclusions were reached by Lunina (2018), who highlighted the persistence of fiscal disparities among territorial communities despite decentralization reforms.

The analysis further confirms the importance of human capital theory proposed by Hanushek and Woessmann (2015), according to which investments in education contribute significantly to long-term economic growth and competitiveness. The increase in educational expenditures per student observed in Ukraine reflects not only inflationary pressures but also growing investments in digital technologies, inclusive education, and educational infrastructure.

The proposed cluster model of municipal education financing expands existing approaches by integrating public resources, private investments, and international assistance into a unified governance framework. Such an approach corresponds to OECD recommendations regarding diversified and sustainable educational financing systems (OECD, 2017). Moreover,

international support mechanisms, including the Ukraine Facility and European educational programs, create additional opportunities for strengthening educational resilience in the post-war period.

Nevertheless, several limitations of this study should be acknowledged. First, the ongoing military aggression against Ukraine creates uncertainty regarding future fiscal trends and demographic developments. Second, statistical information for certain temporarily occupied territories remains incomplete or unavailable. Third, the analysis mainly focuses on financial indicators and does not directly assess educational quality outcomes, such as student achievement or learning performance.

CONCLUSIONS

The study provides a reinterpretation of financial support for municipal education development in the context of decentralization reform in Ukraine and demonstrates the growing role of local governments in ensuring educational accessibility and quality. The findings confirm that financial support for municipal education should be regarded not only as a budgetary function but also as a strategic instrument for human capital formation and sustainable territorial development.

The analysis of theoretical approaches to educational finance under fiscal decentralization indicates that an effective system of municipal education financing requires a balanced combination of local autonomy, state regulation, and fiscal equalization. The principles of fiscal federalism, public finance, and human capital theory provide an appropriate conceptual framework for understanding the transformation of educational financing systems.

The study reveals that decentralization reform substantially transformed intergovernmental fiscal relations in Ukraine by expanding local revenue sources and expenditure responsibilities. As a result, territorial communities have become key actors in financing educational services and managing educational infrastructure.

The assessment of local budget revenues and educational expenditures during 2015–2025 demonstrates a significant strengthening of the financial capacity of local governments and an increasing role of education within local public finance. However, considerable disparities in fiscal capacity among territorial communities persist, limiting equal access to quality educational services.

The research identifies major challenges affecting municipal education development, including demographic decline, uneven tax potential, institutional asymmetries, and the consequences of military aggression. These factors increase financial pressures on local governments and necessitate new approaches to educational financing under conditions of uncertainty and post-war recovery.

To address these challenges, the study substantiates that municipal educational clusters are characterized by a number of specific features that determine their effectiveness under decentralization conditions. These features include the presence of leading educational institutions that shape the educational and financial strategy of the entire municipal education system; the territorial concentration of cluster participants; the financial sustainability of educational institutions, which ensures the stable functioning and development of the majority of participants; and the long-term coordination of interaction among cluster stakeholders within the framework of socio-economic development programs of territorial communities and the implementation of strategic objectives of structured financial support.

The functioning of municipal educational clusters creates preconditions for the consolidation of financial, institutional, and intellectual resources of territorial communities, promotes the efficient use of budgetary funds, facilitates the attraction of additional investment resources, and fosters sustainable partnerships among educational institutions, local governments, businesses, and civil society organizations.

The practical significance of the study lies in the possibility of applying the proposed cluster model to ensure the financial sustainability of municipal education, improve the quality of educational services, and foster competitive human capital as a foundation for the sustainable development of territorial communities under conditions of decentralization, European integration, and the post-war recovery of Ukraine.

Prospects for further research include the development of a system of indicators for assessing the financial sustainability of territorial communities in the field of education. Particular attention should be devoted to the implementation of results-oriented financial support mechanisms for municipal education development in accordance with the requirements of European integration and the post-war reconstruction of Ukraine.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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РЕІНТЕПРЕТАЦІЯ ФІНАНСОВОГО ЗАБЕЗПЕЧЕННЯ РОЗВИТКУ МУНІЦИПАЛЬНОЇ ОСВІТИ: ДОСВІД РЕФОРМИ ДЕЦЕНТРАЛІЗАЦІЇ В УКРАЇНІ

Трансформація систем місцевого самоврядування в умовах децентралізації суттєво змінила архітектуру фінансування освіти в багатьох країнах світу та посилила роль органів місцевого самоврядування в забезпеченні доступності та якості освітніх послуг. В Україні реформа фіскальної децентралізації, започаткована 2014 року, передала значну частину повноважень щодо управління освітою та її фінансування територіальним громадам, що сприяло зміцненню їхньої фінансової автономії та розширенню можливостей розвитку муніципальної освіти. Водночас посилювалися міжтериторіальні диспропорції у фінансовій спроможності громад, актуалізувалися проблеми демографічного спаду, міграційних процесів і забезпечення рівного доступу до якісної освіти.

Метою дослідження є аналіз фінансового забезпечення розвитку муніципальної освіти в умовах децентралізації й обґрунтування інтегрованого підходу до підвищення фінансової стійкості та якості освітніх послуг на місцевому рівні. Методологічну основу дослідження становлять інституційний, порівняльний, статистичний і системний методи аналізу. Інформаційну базу формують офіційні дані Міністерства фінансів України, Міністерства освіти і науки України, Державної служби статистики України, а також матеріали міжнародних організацій.

Результати дослідження засвідчили, що децентралізація сприяла зростанню доходів місцевих бюджетів і розширенню можливостей фінансування освітньої інфраструктури, цифровізації та інклюзивного навчання. Водночас зберігаються суттєві відмінності у фінансовому потенціалі територіальних громад, що впливають на якість і доступність освітніх послуг. Запропоновано кластерну модель фінансового забезпечення розвитку муніципальної освіти, яка інтегрує державні трансферти, ресурси місцевих бюджетів, механізми державно-приватного партнерства та міжнародну фінансову підтримку.

Обґрунтовано, що ефективне фінансове забезпечення муніципальної освіти потребує збалансованого поєднання інструментів фіскальної децентралізації, бюджетного вирівнювання та стратегічного інвестування. Запропонований підхід сприятиме зміцненню фінансової стійкості освітньої системи, підвищенню якості освітніх послуг і забезпеченню сталого розвитку територіальних громад в умовах післявоєнного відновлення України та її європейської інтеграції.

Ключові слова: муніципальна освіта, фіскальна децентралізація, місцеві бюджети, фінансування освіти, територіальні громади, фінансове забезпечення, міжбюджетні трансферти, освітні кластери, державно-приватне партнерство

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