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Halyna T. Hanushchak

State Vocational and Technical Educational Institution "Masurian Agrarian Center of Vocational and Technical Education", Vinnytsia, Ukraine

**THEORETICAL AND METHODOLOGICAL PRINCIPLES
OF HIGHER EDUCATION MANAGEMENT, TAKING INTO ACCOUNT
THE INERTIA OF ITS DEVELOPMENT IN THE CONDITIONS OF WAR**

The article presents the results of research on the management of higher education and found out that the main factors that influenced the development of higher education, in particular, the growth of the scientific and technical level of social production, the intensification of competition in the market of educational services, the increased attention of the state to higher education, the creation of a single educational space, the development of information technologies, the influence of global educational trends, a change in the educational paradigm regarding the transformation of education into a continuous process, the risks of a pandemic and a full-scale war in the state. It has been established that crisis phenomena in higher education are not the same as crises in socio-economic systems. The lack of synchronicity and a certain delay in the development of higher education in relation to the changes taking place in society determine the continuous reformation of higher education. The natural lag of higher education in relation to the evolution of society is determined by inertial processes and is a manifestation of an inherent property of the development of higher education - its inertia. It has been established that the study of inertia is the basis for improving the management of higher education. Taking into account inertia in management and theoretical and methodological approaches to the study of individual subsystems of higher education from the standpoint of inertia of its development, assessment of their interrelationships allows to resolve the existing contradiction between the requirements of the economy and the quality of training of specialists, to balance demand and supply in the labor market, to increase efficiency functioning of higher education in conditions of war.

Keywords: higher education; inertia; efficiency of higher education; quality management of higher education.

Галина Т. Ганущак

Державний професійно-технічний навчальний заклад «Мазурівський аграрний центр професійно-технічної освіти», Вінниця, Україна

**ТЕОРЕТИКО-МЕТОДИЧНІ ЗАСАДИ УПРАВЛІННЯ ВИЩОЮ ОСВІТОЮ
З УРАХУВАННЯМ ІНЕРЦІЙНОСТІ ЇЇ РОЗВИТКУ В УМОВАХ ВІЙНИ**

В статті викладено результати досліджень щодо управління вищою освітою та з'ясовано, що основні чинники, що вплинули на розвиток вищої освіти, зокрема зростання науково-технічного рівня суспільного виробництва, загострення конкурентної боротьби на ринку освітніх послуг, підвищена увага з боку держави до вищої освіти, створення єдиного освітнього простору, розвиток інформаційних технологій, вплив глобальних освітніх тенденцій, зміна освітньої парадигми щодо перетворення отримання освіти на безперервний процес ризику пандемії та повномасштабна війна в державі. Встановлено, що кризові явища у вищій освіті нетотожні кризі у соціально-економічних системах. Відсутність синхронності і певне запізнювання розвитку вищої освіти стосовно змін, які відбуваються у суспільстві, обумовлюють безперервне реформування вищої освіти. Природне відставання вищої освіти по відношенню до еволюції суспільства визначене інерційними процесами і є проявом невід'ємної властивості розвитку вищої освіти – його інерційності. Встановлено, що вивчення інерційності є основою удосконалення управління

вищою освітою. Врахування інерційності в управлінні та теоретико-методичні підходи до дослідження окремих підсистем вищої освіти з позиції інерційності її розвитку, оцінка їх взаємозв'язків дозволяє розв'язати існуюче протиріччя між вимогами економіки і якістю підготовки фахівців, збалансувати попит та пропозицію на ринку праці, підвищити ефективність функціонування вищої освіти в умовах війни.

Ключові слова: *вища освіта; інерційність; ефективність вищої освіти; управління якістю вищої освіти.*

Statement of the problem. According to the general scientific point of view, processes in different spheres are characterized by differences that distinguish them from each other. This refers to material and immaterial systems and the dynamics of their development. Knowing the nature of the signs allows for effective object management and behavior prediction. Higher education is no exception. Properties that distinguish higher education from the development of other socio-economic systems have been formed over a thousand-year history. One of these is the inertial nature of development, which is inextricably linked to higher education and determines its functioning.

Unsolved parts of the problem. Carrying out socio-economic and political transformations in society, the priority direction of which in accordance with modern requirements is the modernization of higher education, is impossible without structural reforms of all state institutions. This requires taking into account the inertia of the system in management, that is, its ability to resist external or internal influences to return to a steady state. This task is especially relevant for countries with transition economies.

Inertia is a universal characteristic of socio-economic systems that reflects changes in the state of objects or processes. It is also characteristic of higher education as a system and manifests itself in the form of conservatism and lagging behind the development of society. This shortcoming ultimately leads to a crisis in the educational system and the unattainability of the main goal - the training of qualified personnel who meet the needs of society. At the same time, inertia plays a positive role, stabilizing the higher education system under the negative influence of external factors. This creates prerequisites for maintaining stability, which can be considered as a necessary condition for social development.

The purpose of the study is to substantiate the theoretical and methodological foundations of higher education management, taking into account the inertia of its development.

Presentation of the main material It is common knowledge that inertia as a universal property is inherent in dynamic objects and systems. The positive and negative effects of inertia indicate its ambiguity. Many aspects of inertia are widely used in economic and socio-economic research. However, the breadth of use does not mean a thorough study of this phenomenon in various areas, in particular, in higher education. The impossibility of managing the inertia of educational processes and taking it into account in management creates new problems caused by the disruption of the functioning of higher education.

The works of domestic and foreign scientists contain the results of research on inertia and its connections with the development of socio-economic systems. The increased attention of scientists to the problem of inertia testifies first of all to the significance of the influence of this property on socio-economic systems. At the same time, attention is drawn to the insufficient theoretical substantiation of issues related to the definition of the forms of manifestation of inertia, the selection of types of inertia, their interrelationships, the relationship between inertia and stability, the use of inertia and its influence to optimize the management of social development processes.

Determining the main signs of the manifestation of inertia in relation to higher education will make it possible to theoretically substantiate the key provisions that form the general direction

and architecture of the study of this phenomenon, and to highlight the conceptual principles of higher education management taking into account the inertia of its development.

Analysis of recent publications on the issue. The inertia of socio-economic systems manifests itself in various aspects. The works of domestic and foreign researchers contain ideas about the preservation of motion and the connection of inertia with socio-economic phenomena and processes. This theory is still in demand today. Thus, J. Mill considers the inertia of production and accumulation processes outside the context of the influence of external and internal causes [2]. According to J. Mill, economic inertia reflects the constant development of production relations and the ratio of interacting socio-economic forces of self-movement of matter and consists in the dynamism of system development. The study of economic development from the standpoint of inertia involves taking into account all the diversity of interacting forces in the economy, finding out how reforming the economy can actually generate restraining forces [3]. T. Hannan and J. Freeman emphasize that inertia is determined by the external and internal forces of the system that keep it from changing [4].

Socio-economic and, as a special case, economic systems are much more complex objects compared to physical ones, so inertia manifests itself in a greater variety of forms. This is confirmed by the research of domestic and foreign scientists. Thus, D. Sakovich, considering the causes of economic crises in the context of the inertia of capital markets, noted that inertia determines the characteristics of both stability and variability, as it manifests itself through the preservation of existing characteristics of the movement and through resistance to the formation of new relations and characteristics of the economy [5].

According to research by a group of scientists, inertia is inherent in physical (material) and immaterial (for example, socio-economic) systems, namely enterprises, industries, regions, the national economy and the world economy as a whole. At different levels of the hierarchical system of management and organization, inertia is determined by specific features [6]. The inertia of high-level natural-anthropogenic systems includes the inertia of lower-level systems as components.

Presentation of the main material The study of inertia in various fields of knowledge (economics, sociology, psychology, pedagogy) shows the universality of the phenomenon and the insufficient study of this property in non-material systems. Insignificant coverage of this issue reflects the fact that there are no works that determine the magnitude of the inertia of social processes, its management, taking into account the inertial influence of external and internal factors on the processes of development of socio-economic systems.

The encyclopedic source gives the following wording: "Economic inertia is the property of economic systems and objects to maintain or very slowly change their state; it is caused, on the one hand, by the scale of large economic objects, the size of the economic "mass" and, on the other hand, by inertia thinking of persons and bodies managing economic objects and processes" [7]. The definition does not contain a causal relationship between the influence of external and internal forces and the appearance of inertia, while any changes occurring in the system are caused by quite certain forces of an internal or external nature.

Any economic system consists of many subsystems, and each component in itself is inertial, heterogeneous or heterogeneous in its nature, composition, properties of parts [6]. This heterogeneity must be taken into account when determining the inertia control capabilities of the system or its individual components. Similarly, structural inertia as a mechanism that regulates the activity of the collective components of the organization is described by the "weak link" effect: "...the strength of the chain is determined by the weakest link, the speed of the squadron – by the slowest ship, etc." [7], – the following pattern can be deduced: the measure or degree of inertia of the system as a whole is determined by the subsystem with the greatest inertia. Or, abstracting at a higher level, the measure of inertia of the whole is determined by the measure of inertia of the part.

The development of the economy and science will always proceed at an anticipatory pace, therefore the discrepancy between the education system and economic development is also natural and is a necessary condition for the existence of higher education. Steady lagging, turning into a steady decline, is an integral feature of the functioning of higher education. Even the stage of stable, sustainable development of higher education consists in slowing down the steady decline, which is a manifestation of inertia.

The period of steady decline depends on the influence of external and internal components and can range from several centuries to several years. That is, a state of rest, to which the term "stability" can be applied, is not observed in higher education. In this way, higher education differs from economic systems, where states of sustainable development, stabilization, decline and recession are clearly visible. Thus, taking inertia into account in the management of HE will ensure its sustainable development, thereby slowing down the steady lag behind economic development and maximally increasing the period of relative conformity of the system to the needs of society in the conditions of rapidly changing social processes [8].

According, sustainable development is "...a process of change in which the exploitation of resources, the direction of investments, the orientation of scientific and technical development, and institutional changes are in harmony with each other and strengthen the current and future potential of the enterprise" [8].

Thus, inertia and stability are a manifestation of the properties of the economic system. According to different researchers, their definitions are practically identical. However, if the property of inertia is inherent to any economic system, then stability is acquired. That is, the system can either maintain stability in its development, or not have it at all. Moreover, the system, being in an equilibrium or in an unbalanced state, can also have the property of stability. Therefore, considering the stages of existence of the economic system, we can conclude that the rise, stabilization, decline, recession can be stable. Only decline can be sustainable for higher education. The period of jump-like changes does not have the property of stability in connection with the relative short-term changes and the system's desire for an equilibrium state. Correlation of inertia, steady growth and steady decline reflects the possibility of inertia to maintain an increasing trend in the boom period, to contribute to the preservation of the decline in the recession period, and in a crisis period to prevent a change in the state of the system. But at the same time, the property of inertia manifests itself in a completely different way than the property of stability.

A steady rise will ensure the preservation of system parameters under the negative influence of external or internal forces by counteracting them at the expense of its internal reserves. In this case, the inertial influence caused by the action of external or internal forces will tend to support the negative influence, that is, it will play a negative role, and must be overcome. On the contrary, with a steady decline, inertia tends to return the system to a state of equilibrium, thereby slowing down negative trends, i.e. fulfilling the mission of a stabilizing factor. Thus, for economic systems, depending on the conditions, inertia and stability can play both a positive and a negative role. It can be said that inertia and stability are directed by influence in opposite directions. Inertia is an inhibiting force that slows down balancing processes, or, in other words, existing inertia inhibits both getting out of balance and returning to it.

In addition to stability, the characteristic of variability is directly related to the property of inertia. Stability is considered along with variability as a more general category and reflects the system's ability to maintain its parameters in dynamics, that is, with changes associated with the system. Preservation of system characteristics is due to preservation of functions and means stability, which can also be considered as a form of manifestation of inertia. Sustainable development assumes positive changes in significant indicators, and their negative dynamics, in

turn, indicates a crisis. Invariance of system parameters over time for economic and socio-economic systems or zero growth ultimately leads to a decline and manifests itself as a recession [1, 7].

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In general, the parameters of inertia are the preservation of a state of rest or the provision of sustainable development, the dependence of its value on the mass of the system and the applied set of external forces, the reaction time to external influence. These features are inherent in the education system at various stages of its development, which is under the influence of a set of factors that determine global trends in the evolution of higher education. They are caused by the globalization of the world economy and determine the development of any national education system. On the other hand, attention needs to be paid to the factors that identify individual educational systems, taking into account national characteristics, mentality, culture and level of development.

Conclusions and prospects for further research. Summarizing what has been said, it should be concluded that the insufficient study of issues related to the definition of these main characteristics of higher education causes errors in the influence of society on the course of socio-economic development.

The stability of the economic system, in contrast to inertia, is considered by analogy with a mechanical system as a kind of equilibrium state. Moreover, some characteristics of such a system may be static. If for a mechanical system imbalance is caused by external influence, then for an economic one external and internal factors can be used as driving forces. So, for higher education, external forces can be regulatory and legal regulation of educational activities, financial support, demographic situation. Internal forces that can disrupt the balanced position of the system can be called deficiencies in the management of educational activities, aging curricula and methods, deficiencies in personnel support. Therefore, to analyze the inertia and stability of the education system, it is necessary to analyze the impact of individual external and internal components, as well as their total impact.

If we consider mechanical systems, then a violation of the balance leads to the desire of the mechanical system to return to its initial state. Moreover, this aspiration is determined by the internal structure of the system, its internal forces and is natural. In economic systems, imbalance does not mean clearly defined, determined steps to restore the system. This is related to the complexity and structuredness of the systems themselves, which differ in the consequences of the

influence of external and internal factors and the variety of options that allow solving the task of restoring the system. The value of inertia must increase to resist unwanted influences and decrease when the system strives for an equilibrium state. Thus, in higher education, inertia should increase with the deepening of the political and economic crisis and, accordingly, crisis phenomena in education, and should not prevent the introduction of innovations for the transition to a higher level. That is, regulation of inertia will allow to achieve optimal parameters of the functioning of any system. Therefore, the inertia of the economic system should be a considered, regulated function that can reach an optimal value. Since any economic system is generally socio-economic, taking into account the possibilities of self-regulation of the system, i.e. attracting internal reserves, will also affect its inertia. As a result, in order to determine the methods of managing the inertia of economic systems, it is necessary to: develop the theory of managing economic systems taking into account the inertia of the processes taking place; to investigate the regularities of the manifestation of inertia and its influence on the functioning of the system; develop inertial management mechanisms for the possibility of its increase or decrease depending on the state of the system in a given time period.

Inertia manifests itself through the static and dynamic parameters of the system, therefore, in relation to higher education, it can be said that it is always related to the level of efficiency of the educational process, which means the efficiency of the applied educational technologies, methods and forms of organization of the education system, optimal management, including financial and personnel management and educational activities.

Summarizing what has been said, we can conclude that in economic and socio-economic systems, almost all researchers identify such basic forms of inertia as stability and the ability to preserve the integrity and direction of development. In higher education, inertia manifests itself in the form of a natural lag behind the needs of society, which determines the inability of higher education to adapt to new conditions and leads to disparities in the labor market, the impossibility of meeting the needs of the national economy with the necessary labor resources, and causes a decrease in the level of training of graduates. The inertial influence limits the ability of higher education to quickly respond to external changes, which ultimately causes an increase in crisis phenomena in education and society.

References

Література

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| <p>1. Pro vyshchu osvitu: Zakon Ukrainy № 1556-VII vid 01.07.2014 [On higher education: Law of Ukraine]. URL: http://vnz.org.ua/zakonodavstvo/111-zakon-ukrayiny-pro-vyschu-osvitu [in Ukrainian].</p> <p>2. Mill, Dzh. S. (1980). Osnovy politjekonomii i ih prilozhenie k social'noj filosofii: v 3 t. [Fundamentals of political economy and their application to social philosophy: in 3 volumes]. Moscow: Progress. Vol. 2. 316 p. [in Russian].</p> <p>3. Shmujlo, D. G. (2009). Inercionnye javlenija v upravlenii narodnym hozjajstvom [Inertial phenomena in economic management]. <i>Innovacionnoe razvitie: materialy I Molodezhnogo jekonomicheskogo foruma = Innovative development: materials of the 1st Youth Economic Forum</i> (November 13–14, 2008, Petrozavodsk). P. 165–167. [in Russian].</p> | <p>1. Про вищу освіту: Закон України № 1556-VII від 01.07.2014. URL: http://vnz.org.ua/zakonodavstvo/111-zakon-ukrayiny-pro-vyschu-osvitu.</p> <p>2. Милль Дж. С. Основы политэкономии и их приложение к социальной философии: в 3 т. М.: Прогресс, 1980. Т. 2. 316 с.</p> <p>3. Шмуйло Д. Г. Инерционные явления в управлении народным хозяйством. <i>Инновационное развитие: материалы I Молодежного экономического форума</i> (13–14 ноября 2008 г., Петрозаводск). Петрозаводск: Кар НЦ РАН, 2009. С. 165–167.</p> |
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4. Hannan, M. T., Freeman, J. (1984). Structural Inertia and Organizational Change. *American Sociological Review*, No. 49 (2), P. 149–164.
4. Hannan M. T., Freeman J. Structural Inertia and Organizational Change. *American Sociological Review*. 1984. № 49 (2). С. 149–164.
5. Ivashyna, S. Yu., Ivashyna, O. F. (2014). Sotsialno-institutsionalni aspekty ekonomichnoi transformatsii [Social and institutional aspects of economic transformation]. *Problemy ekonomiky = Problems of the economy*, No. 2, P. 309–314 [in Ukrainian].
5. Івашина С. Ю., Івашина О. Ф. Соціально-інституціональні аспекти економічної трансформації. *Проблеми економіки*. 2014. № 2. С. 309–314.
6. Terovanesov, M. R., Kratt, O. A. (2013). Kontseptualni pidkhody do doslidzhennia inertiinosti systemy vyshchoi osvity [Conceptual approaches to the study of the inertia of the higher cooling system]. *Visnyk Natsionalnoho universytetu "Lvivska politekhnikha" = Bulletin of the National University "Lviv Polytechnic"*, No. 769, P. 437–444 [in Ukrainian].
6. Терованесов М. Р., Кратт О. А. Концептуальні підходи до дослідження інерційності системи вищої освіти. *Вісник Національного університету "Львівська політехніка"*. 2013. № 769. С. 437–444.
7. Terovanesov, M. R., Kratt, O. A. (2012). Inertiinist yak vlastyvist materialnykh i nematerialnykh ob'ektiv [Inertia as a property of material and immaterial objects]. *Visnyk Khmelnytskoho natsionalnoho universytetu. Serii: Ekonomichni nauky = Bulletin of the Khmelnytskyi National University. Series: Economic Sciences*, No. 6, Vol. 1, P. 89–94 [in Ukrainian].
7. Терованесов М. Р., Кратт О. А. Інерційність як властивість матеріальних і нематеріальних об'єктів. *Вісник Хмельницького національного університету. Серія: Економічні науки*. 2012. № 6. Т. 1. С. 89–94.
8. Kostyrko, I. H. (2009). Poniattia ekonomichnoi masy v svitli teorii fizychnoi ekonomii [The concept of economic mass in the light of the theory of physical economy]. *Fizychna ekonomii: metodohii doslidzhennia ta hlobalna misiia Ukrainy: zb. materialiv mizhnar. nauk. konf. = Physical economy: research methodology and global mission of Ukraine: coll. materials of international of science conf.* (April 8–10, 2009). Kyiv: KNEU. P. 227–234 [in Ukrainian].
8. Костирко І. Г. Поняття економічної маси в світлі теорії фізичної економії. *Фізична економія: методологія дослідження та глобальна місія України: зб. матеріалів міжнар. наук. конф.* (Київ, 8–10 квіт. 2009 р.). К.: КНЕУ, 2009. С. 227–234.
9. Ustenko, A. O. (2014). Tsilova pidsystema systemy upravlinnia [Target subsystem of the control system]. *Biznesinform = Business Information*, No. 6, P. 360–364 [in Ukrainian].
9. Устенко А. О. Цільова підсистема системи управління. *Бізнесінформ*. 2014. № 6. С. 360–364.
10. Terovanesov, M. R. (2013). Ekonomichna masa yak skladova inertiinosti systemy vyshchoi osvity [Economic mass as a component of the inertia of the higher education system]. *Visnyk Kharkivskoho natsionalnoho universytetu im. V. N. Karazina. Serii: Mizhnarodni vidnosyny. Ekonomika. Krainoznavstvo. Turyzm = Bulletin of Kharkiv National University named after V. N. Karazina. Series: International relations. Economy. Local studies. Tourism*, No. 1086, Vol. 2, P. 100–104 [in Ukrainian].
10. Терованесов М. Р. Економічна маса як складова інерційності системи вищої освіти. *Вісник Харківського національного університету ім. В. Н. Каразіна. Серія: Міжнародні відносини. Економіка. Країнознавство. Туризм*. 2013. № 1086. Вип. 2. С. 100–104.

11. Terovanesov, M. R. (2014). Udoskonalennia menedzhmentu systemy vyshchoi osvity [Improving the management of the higher education system]. *Formuvannia innovatsiinoi ekonomiky: svitovyi dosvid ta vitchyzniani realii: Materialy Mizhnarodnoi naukovo-praktychnoi konferentsii = Formation of an innovative economy: world experience and domestic realities: Materials of the International Scientific and Practical Conference*. Kherson: VD "Helvetyka". P. 152–155 [in Ukrainian].
11. Терованесов М. Р. Удосконалення менеджменту системи вищої освіти. *Формування інноваційної економіки: світовий досвід та вітчизняні реалії: Матеріали Міжнародної науково-практичної конференції*. Херсон: ВД "Гельветика", 2014. С. 152–155.
12. Terovanesov, M. R. (2013). Vnutrishni ta zovnishni protyrichchia rozvytku systemy vyshchoi osvity [Internal and external contradictions in the development of the higher education system]. *Yevropeiski perspektyvy = European perspectives*, No. 12, P. 187–193 [in Ukrainian].
12. Терованесов М. Р. Внутрішні та зовнішні протиріччя розвитку системи вищої освіти. *Європейські перспективи*. 2013. № 12. С. 187–193.