

The intellectual factor of education in an innovative economy

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Abstract: *The features of the functioning and development of the domestic education system in the context of the requirements of the state strategy for sustainable economic development are considered. The need to improve methodological approaches to the educational process with an increase in research and socio-humanitarian components is shown. Education in all forms of its manifestation in the form of a target process or self-learning is a systemic process in which professional skills and abilities are an important, but not a determining component of a harmonious member of society, which, through its activities, contributes to its progressive development. The fundamental goal of education is to form a harmonious personality, in which the talents laid down at the gene level are manifested and developed to the full extent in adequate accordance with moral criteria based on universal human values and national mentality.*

Keywords: *ECONOMICS, INNOVATION STRATEGY, EDUCATION, INTELLECT, PERSONAL HARMONY, SCIENTIFIC COMPONENT, ACADEMIC LITERACY*

1. Introduction

The practical implementation of the state strategy for sustainable economic and social development for the period up to 2020 and beyond [1, 2] involves the expansion of the use of high-level technologies in production and social activities, including convergent technologies (NBIC) [2–10]. This aspect of the innovative functioning and development of industrial and social complexes of various levels, forms of ownership and departmental subordination involves the possession of employees at all stages of the product life cycle with modern methods of managing a new type of economy, positioned as a "knowledge economy", "intellectual economy", "digital economy" [11, 12]. The prevailing form of training professional workers for various areas of the functioning of the economy, the most important factor in the formation and development of which are intellectual products implemented in new materials, designs, technologies for management, manufacturing, sales, service and recycling, is the implementation of the educational process in higher educational institutions (universities) in accordance with the current regulatory legal documentation regulating the list of educational programs, their content, forms of control and terms of implementation in accordance with the Educational code.

The new economy requires the creation of a methodology for training a new type of worker - a "knowledge worker" [13], whose activities will ensure the innovative functioning of a business entity.

An innovatively receptive specialist with pronounced creative thinking [14] during the formation of a new economy and its subsequent sustainable functioning with a characteristic vector of social development has the intellectual potential for the development and practical use of highly effective innovations that ensure the achievement of strategic goals declared at the state level. To form such a specialist, it is necessary to transform methodological approaches to the intellectual support of learning processes, professional activities and advanced training based on the concept of "lifelong education".

In studies devoted to the process of formation of innovation-receptive specialists at the stage of the educational process in basic specialties that determine effective economic and social development, various aspects of its implementation are considered, taking into account the requirements of the knowledge economy [14–19, 26–35]. So, in [15] as a "guarantor of the success of society" they consider "dialogization of the educational process". In [15], it is noted that in the implementation of the educational process "with the traditional reliance on lectures", the specialist does not acquire "effective management skills" in full. Shrubenko A.G. believes [16] that a transition to an "individually oriented" principle of building the educational process is necessary. In more detail, some trends in the transformation of the educational process in the interests of the new economy with an innovative nature of functioning are considered in [15–19].

An analysis of studies devoted to various aspects of improving the educational process in the interests of the neo-industrial

economy clearly indicates its multifactorial nature with the determining influence of the intellectual component in various forms of manifestation. The trend that has emerged in the last decade to simplify higher education by predominantly developing professional skills among students, instead of a comprehensive assessment of problems based on the scientific component and a complex of socio-humanitarian disciplines, reducing the duration of training, the growing role of the economic component in the activities of universities, requires an integrated approach to developing a methodology for the functioning of higher education. during the development of the new economy.

It is of significant scientific and practical interest to assess the role of the intellectual factor in the educational process of higher education in order to determine the directions for the formation of methodological approaches to the systematic training of specialists for the domestic economic complex, taking into account its features.

2. Results and Discussion

Trends in the development of the economy at the global, state and regional levels are characterized by an increase in the share of services of various types and its prevalence over the production of material objects that ensure the functioning of basic industries and a system of comfortable and safe life [5, 10, 20, 23]. Therefore, the educational process of higher education should transform the content of educational programs for the training of specialists in all branches of industrial production, taking into account the features of new marketing systems, after-sales service, and permanent updating of the product range with changing consumer demand [20–22]. At the same time, the educational process should take into account the peculiarities of the Belarusian economy, which is in the process of transition from the IV, V to VI technological modes [23].

The characteristic trends of the Belarusian economy in transition are inefficient innovative functioning, which predetermines the process of stagnation.

Belarus, like most countries of the post-Soviet space, belongs to the "countries with incomplete industrialization" [23], therefore "... the essence of the technological problem ... lies in the fact that the third and fourth technological modes are a fundamentally different type of production than the fifth and sixth So, in the industry of the Republic of Belarus ... up to 1/3 of all labor is manual, 1/5 is manual labor with a mechanical tool, 1/3 is machine labor, and only 1/10 is semi-automated and automated" (emphasis added – O.A., V.S., A.A.) [23, p. 27]. Further in this work it is noted: "... the main mass of the employed population (up to 80%) in Belarus are representatives of mass professions associated with the traditional branches of the economy and forming a hierarchy of socio-professional groups similar in occupation (physical and mental wage labor), property status ..., scope of rights ... and those who share non-market values in the economic and social spheres In order for employees to be able to reproduce new social strata, to become effective owners of their workforce, it is necessary to reorganize both external conditions that change the position of workers in society, and internal ones – overcoming

paternalistic stereotypes, *focusing on continuous improvement of professional education, formation of social responsibility for one's life*" (emphasis added – O.A., V.S., A.A.) [23, p. 28].

A characteristic trend in the economic and social development of the post-Soviet states is *"globalization – the second stage of urbanization – expressed in the migration of the population of small towns to regional centers, large cities and capitals, which ... intensified ... negative trends"* in the regions, including "... a steady slowdown in economic growth ... degradation of the material and technical base of enterprises, organizations, institutions and infrastructure" (emphasis added – O.A., V.S., A.A.) [24, p. 7–8]. In the same work, it is noted that "According to the United Nations, *the Republic of Belarus is among the countries with a high level of human development, being in 53rd place in the world out of 173 countries surveyed annually*" (emphasis added – O.A., V.S., A.A.) [24, p. 9]. At the same time, many approaches that are effective in economically developed countries to intensify innovative functioning using the latest, including convergent technologies, through the formation of cluster structures and digitalization of the economy, have not received proper development and their real contribution to the economy of Belarus is insignificant.

A characteristic feature of the development of the industrial complex of Belarus is the phenomenon called in [26] "technological uncertainty": "... *Technological uncertainty* is characterized by a multiplicity of options for choosing technologies that arise due to the inability to assess the likelihood of potential results from their use. *Such uncertainty acts as a natural limitation of the controllability and stability* of the organizational and economic system in general and the industrial complex in particular. At present, *a large amount of accumulated knowledge is the foundation for the emergence of new ones, the volume of technologies is constantly increasing, and the speed with which new technologies are emerging and being introduced is also growing. As the dynamics of technological evolution accelerates, technological uncertainty grows*" (emphasis added – O.A., V.S., A.A.) [25, p. 53].

In our opinion, it is more reasonable for Belarus to talk about "technological lability", that is, about the mobility of sectors for the use of science-intensive and traditional technologies, depending on the type of innovative products.

With the mass industrial production of innovations with close parameters of functional (consumer) characteristics, the role of the technological lability factor increases, as it affects price parameters and production productivity.

At the same time, it should be noted that the noted characteristic features of the development of the industry of Belarus, as the main factor determining economic and political sovereignty, require the development of new methodological approaches to the organization of the educational process for the training of engineering and managerial personnel that are adequate to the requirements of the new economy with a pronounced trend of innovative functioning. A qualified specialist must not only possess the essence ("know-how") of high technologies developed and used in the leading countries, have practical skills in adapting them to the current industrial production, but also apply them in their original or modernized form in combination with domestic technologies for achieving synergistic effects. This aspect involves *obtaining not a highly specialized educational complex sufficient for the implementation of professional competencies, but systemic ideas about the development of technologies in accordance with the requirements of neo-industrialization*, with the prevalence of reasonable actions that preserve the environment and harmonize society. A highly qualified worker of neo-industrial development - a "knowledge worker", owns the technologies of creative thinking within the scope of his professional activity and the development of the social environment.

An analysis of studies on the methodological aspects of the educational process during the formation of a new technological mode in Belarus [18, 19, 25–35] makes it possible to identify characteristic trends in the approaches used in the domestic higher education.

In the work of Professor Kirvel Ch.S. it is rightly stated that "In the current conditions of global competition for resources, territories, financial power, *the main goals of information wars are the destruction of the consciousness and self-awareness of peoples, their life-meaning values, ideals and guidelines*" (emphasis added – O.A., V.S., A.A.) [18, p. 79].

Gustave Le Bon noted: "The only important changes from which the renewal of civilizations follows are made in ideas, concepts and beliefs. *Major historical events are only visible consequences of invisible changes in people's thoughts*" (emphasis added – O.A., V.S., A.A.) [18, p. 81].

Therefore, "... *the more primitive a person's education, the easier it is to lure him into a network* and, as such, connect him to one of the global networks or to all networks at once" (emphasis added – O.A., V.S., A.A.) [18, p. 85]. A systemic purposeful substitution of the concept of "education" for the concept of "training" is carried out with the help of the so-called "educational services", implemented mainly on a commercial basis.

The work [19] expresses a reasonable opinion on the direction, goals and objectives of transforming the educational process in Belarusian higher education: "... *To indicate the general direction of the processes that are unfolding in full swing in the system of education and higher education in particular, it is appropriate to use the prefix "de-", indicating decomposition and disintegration: "defundamentalization", "dehumanization", "deconcretization", "dehumanization"* (emphasis added – O.A., V.S., A.A.) [19, p. 60, V. 1].

The authors consider "economic centrism" to be a stable, determining trend in the development of education, noting that: "*The lie of economic centrism lies in the fact that it declares education to be the private interest of individual stakeholders (individual employers and potential employees) and reduces the fullness of the benefits created by the education system to only to one – narrow professional training*" (emphasis added – O.A., V.S., A.A.) [19, p. 63].

The educational process within the framework of economic centrism is replaced by a set of various kinds of flash mobs and smart mobs, start-ups, etc., imitating scientific research, preparing essays, term papers and diploma projects, which are the essence of the educational process within the specialty. The number of participants in this process in the educational environment is rapidly increasing and "... The scale of this phenomenon has become significant, which allowed ... I. Huizinga to declare the emergence of a special type of personality – *Nomo Ludens* – "a person playing" [19, p. 71].

A change in the professional content of a teacher due to the lack or insufficiency of their own scientific base within the taught disciplines necessitates the search for new parameters to maintain their status in the educational society. So Prokhorova L.V. [27] believes that "... Achieving ... a harmonious set of qualities requires the teacher to be aware of actions, which in turn is impossible without reflection: *the teacher needs to know what requirements the student audience and colleagues impose on him*" (emphasis added – O.A., V.S., A.A.) [27, p. 18 with reference to [28]]. The author [27] believes that "A university teacher is a person who, by the nature of his activity, must have a number of universal qualities: the abilities of a psychologist, organizer, analyst, orator, to master the methods of training and education, to be not only a competent specialist in his field, but also an erudite in other fields of knowledge" [27, p. 18].

In the studies of Donskoy L.Yu. The image of a higher education teacher is determined by a dynamic model that includes three levels [28]. Primary attention is paid to the natural component (external data, physical and psychophysiological features, temperament, gender, age), the internal component (communicative qualities, charm, professional knowledge, individual style, etc.), symbolic characteristics (visual, auditory, kinesthetic, olfactory components) [27].

According to the author of the work [27], all actions of the teacher should be aimed at pleasing students, since, in particular, Socrates noted that "one learns from the one who likes" [27, p. 19].

In our opinion, this is a simplified understanding of the meaning of the Socratic statement, since it means not only the ability to communicate and charm, but the intellectual level of teaching, which the trainees "like" with its depth of professional knowledge, versatility, scientific potential, realized in significant achievements - textbooks, monographs, patents, a scientific school, the effectiveness of practical innovation, etc.

Therefore, the concept of "educational violence", proposed by us in [14, 17], does not reduce the teacher's ability to "like", since adequate (professionally oriented) students understand the need to spend a lot of effort to achieve a high real (rather than formalized) professional level.

Obtaining an education of a modern level is possible only through the intellectual violence of the student over himself with the help of the intellectual potential of the teacher in various forms of its practical implementation, with its undoubtedly high moral characteristics. To a large extent, this is realized with the individualization of the educational process, which takes into account the peculiarities of the intellectual development of the student. In our opinion, the most effective method of teaching is a joint non-formalized research activity within the framework of a large regional, state or international program.

In [29], they note that "... *Today we live in a completely different world. The only thing that remained unchanged in him was the desire to acquire new knowledge – scientific truth*" (emphasis added – O.A., V.S., A.A.) [29, p. 48]. In our opinion, the main components of the universe have not changed. We live in the same world that has existed for a long period and will continue to exist, despite the negative technogenic impact, which is the "creation" of human hands, called "scientific and technological progress". The world does not change, because it is harmonious in essence - the initial organization, structure and functions of the components, their interaction and transformation. Man's perception of the world was changing, based on an inadequate assessment of his own role in the existence of the universe, based on the developed paradigms, which are presented as transcendental (absolute) knowledge.

In the process of joint educational activities, a professionally adequate teacher, in our opinion, should proceed from the concept of unconditional giftedness and genius of the student, the makings of which are inherent in everyone upon birth in the form of "natural properties" [14, 17]. According to Hegel, "... Natural properties are understood as the totality of natural inclinations, as opposed to what a person has become due to his own activity. *Talent and genius belong to these inclinations. Both of these words express a certain direction which the individual spirit has received from nature. ... However, both talent and genius ... must be improved according to generally accepted methods, unless they want their death, moral decay or degeneration into bad originality*" (emphasis added – O.A., V.S., A.A.) [30, p. 11].

The joint participation of a teacher and a student in the implementation of a research project is the most important condition for their mutual intellectual development. At the same time, as noted in [31] "... *Work with young people and, in particular, teaching at a university, in my opinion, is one of the important, if not the most important component of scientific activity*" (emphasis added – O.A., V.S., A.A.) [31, p. 55], because "... *The transfer of knowledge is the duty of any scientist and, especially, the scientific elite*" (emphasis added – O.A., V.S., A.A.) [31, p. 55].

The quality of the educational process is manifested in the ability of a specialist to develop his own solution, not only adequate to the prevailing conditions of use, but also more effective in comparison with other solutions. "Borrowed knowledge" can ensure the adoption of an effective decision when the real situation is adequate to a certain virtual one, but cannot be implemented in the absence of information technology, since the specialist has not formed an algorithm for his own thinking. *Having the skills to use borrowed knowledge does not mean being able to develop your own knowledge based on personal intellectual potential.*

A pronounced trend in the strategic development of higher education is the expansion of the use of information technology in

the educational process, which makes it possible to implement the concept of distance learning (DL). According to [32], "*Distance learning can be defined as a purposeful, organized process of interactive interaction between teachers and students among themselves and with learning tools, invariant to their location in space and time, which is implemented in a specific didactic form*" (emphasis added – O.A., V.S., A.A.) [32, p. 36].

In our opinion, the main goal of the educational process, regardless of the form of embodiment, is the formation of a person with high professional knowledge and skills in a particular field of activity and moral criteria that are adequate to the criteria for the development of society and the world community. Distance learning (DL) is a technological form of transferring professional knowledge and skills from a teacher to a student using technological means, based on fundamental knowledge obtained as a result of systematic work in various fields of scientific and practical activities.

Classical universities will be able to maintain their status and functional purpose with the intensification of scientific activity both in their own infrastructure and in the integration interaction between research and production components operating in the region and global space.

According to the concept of D. Bell, the university is presented as an "axial social institution" [32] of the post-industrial society: "*The university is increasingly becoming the main social institution of the post-industrial society, which has assumed the functions of carrying out fundamental research, training highly qualified personnel, and developing general education*" (emphasis added – O.A., V.S., A.A.) ([32, p. 37 with reference to [33, p. 334]).

For higher education in Belarus, D. Bell's concept requires transformation due to the relatively low level of research work performed, especially characteristic of regional and non-state universities, and their scientific status. Therefore, the formation of the modern status of the university is impossible without integration interaction with academic science with mutual diffusion (percolation) of the staff and convergence of research, educational and applied innovation projects based on the concept of intellectual support with a certain infrastructural embodiment.

Only the permanent generation of high-level knowledge in the integration cluster "Higher Educational Institution - Academy of Sciences - Industrial Enterprise" will ensure the development of educational and methodological complexes adequate to the post-industrial economy for training specialists in strategic programs for the innovative development of high-tech industries of the economic complex, ensuring its sustainable development [14, 17]. This will preserve the basic functions of a classical university, in which the content of educational and methodological materials will be permanently updated on the basis of scientific fundamental and applied knowledge with a high level of novelty and relevance.

Baynev V. [34] rightly noted that in the innovative development strategy of Belarus and other countries of the post-Soviet space, the main resource is "people and intelligence", and "*the reproduction of human capital is associated with the education system*", which "... *should function in organic connection with other spheres of the economy and society as a whole*" (emphasis added – O.A., V.S., A.A.) [34, p. 25]. At the same time, the education system focused on training specialists with high creativity and innovative susceptibility should be based on an integrated approach that includes a fundamental scientific component, a socio-humanitarian component and a professional component that form a harmonious personality with moral behavioral priorities, since "... *focusing on the fragmentary and episodic blocks the understanding of the whole, obscures the perception of the whole, prevents the assessment of events from the point of view of their integration into the overall picture of the world, turns into a diffusion of values, fragmentation of culture and, in general, the de-intellectualization of modern society*" (emphasis added – O.A., V.S., A.A.) [26, p. 91].

3. Conclusion

An analysis of studies devoted to the consideration of various aspects of the educational process in the domestic higher school

indicates the lack of a systematic approach to assessing its effectiveness in the implementation of the State Strategy for Sustainable Socio-Economic Development for the period up to 2020 and in the long term. The emerging trend towards a decrease in the share of the scientific component with a reduction in the cycle of socio-humanitarian disciplines and the total duration of training leads to the formation of specialists with certain professional skills without understanding the multifactorial development of the world society with pronounced consumer guidelines.

The expediency of the development of the research component in the educational process of higher education and the intensification of interaction between the faculty and students in the framework of the implementation of high-level scientific programs is shown.

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