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SUSTAINABLE DEVELOPMENT OF HIGHER EDUCATION IN MODERN ECONOMY

Abstract

The actions of each person underlie the principles of sustainable development of society. That is why education plays an essential role in the implementation of the ideas of sustainable development. In the minds and behaviour of people, their attitude to the environment, education acts as an instrument of positive transformations. Positive changes are taking place in society from the quality of education to the quality of life. Education acts as a regulator of various social processes: from the growth of culture and the rise of human needs to the development of production and the activation of global processes. The goal of education for sustainable development is the formation of the intellectual potential of society, which serves as the basis for ensuring a high quality of life and social equality. In the digital economy, the basis of the educational process should be innovation and the upbringing of a generation capable of generating innovation and learning throughout life. All this variety of competencies will form a personality that is resistant to modern digital reality. The transformation of higher education in the context of widespread digitalization requires an appropriate level of infrastructure, the level of digital competencies of teachers, and their readiness to change. After all, digital technologies are fundamentally changing the content and form of courses delivery. Higher education should work proactively, shaping the digital competence of graduates, exceeding the existing range of knowledge, skills and abilities.

Key words: sustainable development, digital economy, higher education, digital competencies, digitalization of education, intellectual potential, innovation.

In our time, the role of education is increasing along with the complication of social ties, the aggravation of economic, social and political problems, the formation of green, digital and other economies. The transition to a post-industrial society led not only to an increase in scientific knowledge but also to the importance of a human resource. At the moment, a new way of life of the entire civilization is being born, in which the spheres of management, labour, interests and culture will be completely different.

The prerequisites for this were created in the last century. Besides the fact that the twentieth century became known as the century of social change and scientific and technological progress, it also became a century of education. For comparison, in the 19th century, illiteracy prevailed in the world. In developed countries, the compulsory primary education system was introduced only in the 1880s. At the same time, in China, India, Africa, Latin America, general illiteracy prevailed, and higher education was available only to a few.

In the 20th century, more than 80% of the world's literate population had already become. Education, including higher education, has become available in many countries of the world. Over the past 50 years, the overall enrollment rate in higher education has quadrupled. In the 1970s this figure was about 10%. Then at the beginning of the XXI century, there is a sharp increase, from 19% in 2000 to 38% in 2018. Moreover, enrollment rates for higher education programs have almost doubled (Figure 1, p. 122) [1].

In the budgets of developed countries, the item of expenditure on education has become one of the largest. Education spending is one of the critical indicators of social development, as it reflects the degree of attention paid by the state and society to the education of citizens. Investing in education is not only a meaningful way to increase a country's human capital and improve the prospects for economic development. They also have their value, since education broadens people's horizons, provides them with the opportunity for self-realization, contributes to their material well-being and a healthy lifestyle.

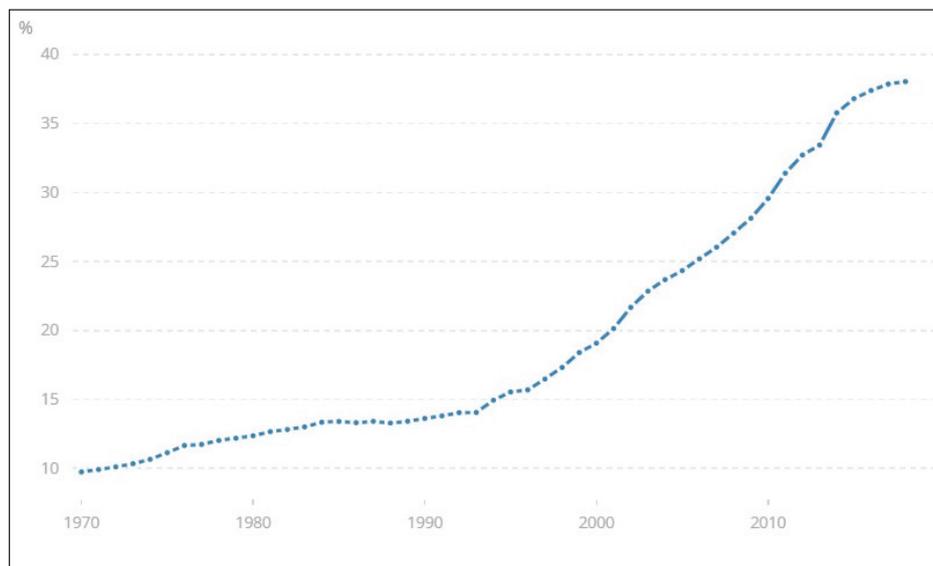


Figure 1 – School enrollment, tertiary (% gross) [2]

Over the past ten years, the average world expenditure on education has fluctuated at the level of 4.2%–4.6% (Figure 2).

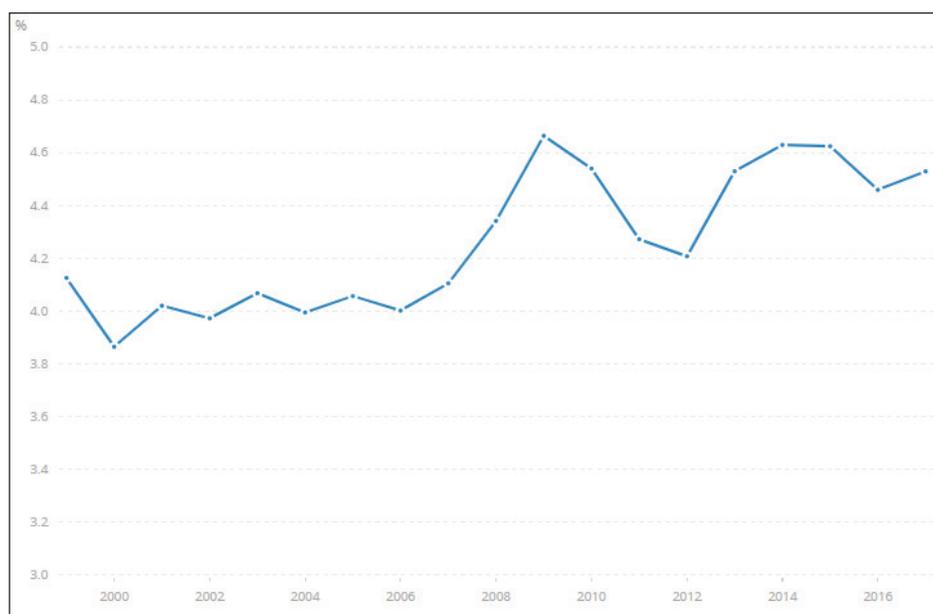


Figure 2 – Government expenditure on education, total (% of GDP) [3]

Also, there is a tendency towards the internationalization of education and an understanding that education is a strategically important area of the life of society and should not be confined to national boundaries. The internationalization of higher education in recent years has become one of the leading trends in the development of education in the world. The internal policy of most modern universities is aimed at embedding an international component in the mission of the university and involving all interested parties in it. The need to develop internationalization is motivated by various factors. These include the need to expand access to sources of advanced knowledge, new opportunities for building partnerships and developing intercultural communication skills and improving the reputation of universities.

With all these positive changes, the inconsistency of modern education with the tasks of today and tomorrow became more and more apparent; the scientific community began to talk more and more about the “global crisis in education” and designate it as another global problem of civilization.

Back in 1967, at the International Conference on the World Crisis in Education, the gap between the demands of industrial and social progress was recognized as the basis for the crisis. Progress was based on the use of the latest scientific and technical developments and was intense. Furthermore, the real state of the education system changed only due to extensive growth.

Half a century ago, A. Toffler called for the creation of a super-industrial education system in order to avoid future shock. “And to do this, we must look for goals and methods in the future, not in the past” [4].

The current period of educational system development is distinguished by a noticeable lag behind the development of society, the educational needs of the population, and the demands and needs of the labour market. According to many researchers, the primary source of the crisis in the national education system lies in the discrepancy between the results of modern education and modern goals and values.

The modern era of technological development, expanding virtual reality and increasing artificial intelligence, has created a new type of economy. The digital economy transforms human thinking and requires a change in classical forms and mechanisms for significant interaction in economic, social, political and other processes. The digital economy provides not only ample opportunities for automation and robotization of various processes, building non-standard communications, but also requires an entirely different level of intelligence. Therefore, we must rebuild the higher education system first.

In the World ranking of digital competitiveness, the Republic of Kazakhstan ranks 35th. The rating assesses the transformation of the world economies through the introduction of digital technologies into the practice of government, business and society as a whole. It is especially worth noting that in the context of the knowledge factor in 2019, Kazakhstan took first place in the “Training and Education” sub-factor, ahead of the leaders of the world ranking. At the same time, factors hindering the emergence of a digital economy are digital and technological skills, a net flow of international students, total government spending on education and R&D, the number of people employed in R&D per capita, high-tech patent grants, investments in telecommunications, wireless broadband, Internet users, Internet commerce and computer piracy [5].

We will solve these problems as a result of the implementation of the Digital Kazakhstan program. Among other things, the goal of the program is to increase the digital literacy of the population, the level of which should reach 83% by 2022. At the same time, the level of digital literacy of the population is currently 76.2% [6]. The table shows the indicators of the level of digital literacy of the Kazakhstan population at the age of 6–74 years [7].

Table 1 – The level of digital literacy of the population of the Republic of Kazakhstan

Information and communication technology use indicators	The proportion of the population with skills, %		
	2017	2018	2019
Using of any four types of technologies listed in the note	74.9	73.6	76.1
Using the basic list of species (1, 2, 3 and 6 items in a note)	60.8	68.1	70.4
Using a personal computer, smartphone, tablet, laptop; standard programs; receiving services and services via the Internet	77.1	79.6	82.1
Using a personal computer, smartphone, tablet, laptop; standard programs	79.9	83.2	86.4
Note: 1) using a personal computer, smartphone, tablet, laptop; 2) using standard programs (text and spreadsheet editors, and so on); 3) receiving services and services via the Internet; 4) solving the problems that have arisen to protect the computer and personal data; 5) using software and hardware solutions in professional activities; 6) using any digital devices (digital cameras, digital camcorders, web cameras, digital television, DVD players, projectors, and so on).			

Digitalization is significantly ahead of the existing system of production requirements for the composition of professions employed in the labour market. The lack of an operational link between the labour market and the education system can simultaneously lead to the training of no longer demanded personnel and the release of personnel in “dying” professions. It is necessary to completely revise the content of all levels of education through the development of digital skills for all specialists.

The so-called “competencies of the XXI century” include communicative, creative competencies, critical thinking, the ability to work in a team, work with large amounts of data, etc. Digital technologies can significantly expand the list of competencies. In the realities of the new time, it is necessary to form in the learning process relevant competencies that can increase the student’s chances to realize their potential to the highest degree and be ready for the challenges posed by modern society.

There is a problem with the very notion of digital competence. It is continually being transformed, including all new knowledge, skills and abilities. This makes it challenging to develop a unified methodological approach to the formation of this competence in practice among teachers and students. Moreover, the competence itself is not sufficient for the effective use of technology in the learning process, since the effective implementation of web tools in the teaching process involves methodologically sound actions. Thus, in order to optimize and adapt the learning process to the realities of the modern world, the teacher needs to have information and computer competence and a didactic media base. At the same time, most universities that train teachers today do not have disciplines that form these competencies in terms of teaching. Also, even with the inclusion of a specific set of disciplines in the course of study, the university will inevitably face the problem of the absence or shortage of qualified personnel who can effectively teach this course.

The process of reforming the education system takes time and resources. Now there is a process of unification, standardization and harmonization of requirements for the creation and control of the results of using electronic educational resources with international ICT standards. They also develop and test information support for the quality assessment of vocational education. Therefore, a modern teacher needs to keep his finger on the pulse, engaging in self-education and self-development, which corresponds to the generally accepted concept of lifelong learning.

It is important to note that the use of new technologies in the learning process should serve a specific purpose – to increase its effectiveness. The mere fact of using digital resources does not add value to education. Only didactically thought out measures give the best results for students and teachers. Therefore, when choosing web tools, it is necessary first of all to identify the problem and only then choose the appropriate one from a large number of tools.

In universities, it is necessary to change the requirements for professional competencies of teachers so that students master professional competencies in the context of the developing digital economy. It is necessary to continually monitor the computer literacy and readiness of teachers to use information technologies in the educational process. Teachers should improve their qualifications in priority competencies for the digital economy. Global trends and international requirements should carry out the introduction of online courses into the educational process and the general digitalization of education. It is necessary to develop teachers who are capable of implementing modern models of the educational process in order to prepare demanded personnel for the modern digital economy.

Education is, first of all, a social institution, the specific function of which is education and training, socialization and professionalization of the younger generations. It is also a specific type of activity for the transfer and acquisition of knowledge, skills and abilities associated with the purposeful development of the individual. Also, education is a certain level of knowledge, abilities and skills, abilities and qualities of an individual, which are the most crucial characteristic of the productive forces and social potential of society. Moreover, finally, it is a purposeful process of acquiring and transferring knowledge, developing the needs and abilities of representatives of society.

All these characteristics exist in indissoluble unity, therefore, crises of education concern all its aspects as turning points that naturally arise in the development process associated with the completion of the phases of gradual quantitative changes in its content, forms and methods. They mean the extreme aggravation of the contradictions between the results of the activities of educational institutions and the new objective requirements of production-technological, scientific-technical and socio-economic development. The education system is now a barrier blocking the path to new achievements in mass practice.

The education crisis can be overcome based on a fundamentally different educational paradigm, which declares new principles. Researchers dealing with the problem of implementing the ideas of sustainable development in the field of education distinguish three main dimensions in this system: technological, socio-economic and pedagogical.

The triple helix model implements the technological aspect. It implies the principle of continuous education, its integration with production and science, the inclusion of the younger generations in real-life events. The socio-economic aspect of education is to ensure equality of social opportunities in obtaining an education, which contributes to an increase in the social homogeneity of the structure of society. Education becomes the most critical factor determining not only full membership in the society, a particular status position, but also a person's material income. As a general rule, the higher the degree of education of a particular individual, the higher his labour is paid, the better his financial situation. Not only the level of income of the population determines the welfare of society, but also the level of literacy of the population, which produces the best quality and quantity products. The level of consumption increases, certain stereotypes of individual consumption and a particular lifestyle are formed. Education becomes one of the factors in the formation of human needs, through which it is possible to regulate them. The pedagogical dimension for education, despite its specificity, is determined by the decision of the technological and socio-economic aspects. The education system is organically connected with social, material and spiritual production. It is based on the coincidence of a change in circumstances and human activity or self-awareness. Thus, the method of education should consist of the active activity of the students themselves, which changes the natural and social environment. As a result, new material and spiritual values will appear, new, more perfect social relations, and as a result – a more perfect, always ready to overcome the resistance of the environment, a new thinking, active person.

Thus, transforming the model of higher education, we ensure that the country's economic processes are consistent with the principles of sustainable development. We are reducing external risks, improving the country's image and increasing its authority in the international arena, and in practice, we are implementing the triple helix model.

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ҚАЗІРГІ ЭКОНОМИКАДАҒЫ ЖОҒАРЫ БІЛІМНІҢ ТҰРАҚТЫ ДАМУЫ

Андатпа

Әрбір нақты адамның іс-әрекеті қоғамның тұрақты даму принциптерінің негізінде жатыр. Сондықтан білім беру тұрақты даму идеяларын жүзеге асыруда маңызды рөл атқарады. Адамдардың санасы мен мінез-құлқында, олардың қоршаған ортаға деген көзқарасында білім оң өзгерістердің құралы болып табылады. Қоғамда білім беру сапасынан өмір сапасына оң өзгерістер болып жатыр, өйткені білім әртүрлі әлеуметтік процестерді реттеуші ретінде әрекет етеді: мәдениеттің өсуі мен адам қажеттіліктерінің жоғарылауынан өндірістің дамуына және жаһандық процестердің жандануына дейін. Тұрақты даму үшін білім берудің мақсаты өмірдің жоғары сапасы мен әлеуметтік теңдікті қамтамасыз ету үшін негіз болатын қоғамның зияткерлік әлеуетін қалыптастыру болып табылады. Цифрлық экономика жағдайында білім беру үдерісінің негізі инновациялық пен инновацияларды генерациялауға және өмір бойы оқуға қабілетті ұрпақты тәрбиелеу болуға тиіс. Барлық осы құзыреттіліктер заманауи цифрлық шындыққа төзімді тұлғаны қалыптастырады. Жаппай цифрландыру жағдайында жоғары білім беруді трансформациялау инфрақұрылымның тиісті деңгейін, педагогтердің цифрлық құзыреттер деңгейін, олардың өзгерістерге дайындығын талап етеді. Өйткені, цифрлық технологиялар курстардың мазмұны мен нысанын түбегейлі өзгертеді. Жоғары білім, білік және дағдылардың қолданыстағы номенклатурасынан асып түсетін түлектердің сандық құзыреттілігін қалыптастыра отырып, озық жұмыс істеуі тиіс.

Тірек сөздер: тұрақты даму, цифрлық экономика, жоғары білім, цифрлық құзыреттер, білім беруді цифрландыру.

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УСТОЙЧИВОЕ РАЗВИТИЕ ВЫСШЕГО ОБРАЗОВАНИЯ В СОВРЕМЕННОЙ ЭКОНОМИКЕ

Аннотация

Действия каждого конкретного человека лежат в основе принципов устойчивого развития общества. Именно поэтому в реализации идей устойчивого развития важную роль играет образование. В сознании и поведении людей, их отношении к окружающей среде образование выступает инструментом положительных преобразований. В обществе происходят позитивные изменения от качества образования к качеству жизни, поскольку образование выступает регулятором различных социальных процессов: от роста культуры и воз-

вышения человеческих потребностей до развития производства и активизации глобальных процессов. Целью образования для устойчивого развития является формирование интеллектуального потенциала общества, который выступает основой для обеспечения высокого качества жизни и социального равенства. В условиях цифровой экономики основой образовательного процесса должна стать инновационность и воспитание поколения, способного генерировать инновации и обучаться в течение всей жизни. Все это многообразие компетенций будет формировать личность, устойчивую к современной цифровой действительности. Трансформация высшего образования в условиях повсеместной цифровизации требует соответствующего уровня инфраструктуры, уровня цифровых компетенций педагогов, их готовности к изменениям. Ведь цифровые технологии кардинально меняют содержание и форму подачи курсов. Высшее образование должно работать на опережение, формируя цифровую компетентность выпускников, превышающую существующую номенклатуру знаний, умений и навыков.

Ключевые слова: устойчивое развитие, цифровая экономика, высшее образование, цифровые компетенции, цифровизация образования, интеллектуальный потенциал, инновационность.