

CREATIVE WORK AS A FACTOR OF EFFICIENCY GROWTH

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ABSTRACT.

The article examines the current problem of developing creative work in modern conditions. The author emphasizes the need to find new methods for achieving this, conducts a comparative analysis of the characteristics of mental and physical labor, proposes the "Honeybee Model" as a tool for activating creativity, and explores the impact of digitalization and the introduction of artificial intelligence on the development of creative competencies in economics students.

Keywords: *creative work; physical and mental work; honey bee model; artificial intelligence; development pyramid; teaching methods.*

INTRODUCTION

Creative labor methods have been discussed in considerable detail in economic literature. However, modern globalization and digitalization, as well as the introduction of artificial intelligence into various fields, require a reconsideration of existing approaches. Socially useful labor consists of two main forms—executive and creative—each playing a significant role. A harmonious combination of these forms allows for more effective development of human capital, enhanced creative thinking, and the maximum utilization of intellectual resources to stimulate economic growth.

In his Address to the Oliy Majlis, President of the Republic of Uzbekistan Sh. M. Mirziyoyev noted, "We have set a goal to join the ranks of developed countries, and we will only be able to achieve this through accelerated reforms and scientific development. To achieve this, we need a new generation of personnel" [1].

In celebratory and public speeches, the president emphasizes that education is "the key that opens all doors." Problems can be solved, all questions answered, through education and upbringing. This clearly underscores that developing a new generation of personnel is impossible without a major reform of the education system, the introduction of new approaches, critical thinking, and digital-age competencies [2].

Effective management decisions in conditions of uncertainty and chaotic

economic development ensure the successful implementation of market reforms and contribute to improving the quality of life of the population of Uzbekistan.

RESEARCH METHODOLOGY

As some economists have rightly noted, creativity is achieved only by specialists trained primarily in the methods of scientific cognition and the transformation of reality [3]. Thus, G. Emerson expressed the idea that correct principles in the hands of ordinary people prove stronger than the unsystematic and random attempts of genius [4]. In connection with this statement, in our article, we will attempt to examine the differences between mental and physical labor, as well as methods for training future specialists in creative work. We will attempt to reflect all of this in tabular form (Table 1) [5].

Table 1. *Comparison of intellectual and physical labor
(see attachment)*

Below, we will explore these theses, which we present in tabular form, and demonstrate the methods that can be used to teach economics students creative work. Back in 2014, we published an article devoted to methods of creative work among students, future economists [6], as well as articles devoted to improving the effectiveness of higher education in the Republic of Uzbekistan [7, 8].

As practice shows, changes in technology and the demands of the real economy are also changing the methods of training students for their future professions. Naturally, globalization, environmentalism, and digitalization are setting their own rules and placing new demands on personnel, who must creatively solve existing problems. In this regard, more effective use of intellectual labor makes it possible to achieve these goals.

We believe leveraging the power of social media is crucial, as most people now obtain their information from the internet. We've dubbed this technology the "Honeybee Model": you post a crude innovative idea (preferably in English, as the vast majority of internet users are online) on a social network and ask for its shortcomings. Network users (professors and freelancers) begin to criticize you, which is particularly common in Uzbekistan, and offer their own solutions to this innovative approach. Like a honeybee, you collect their suggestions for addressing this problem, analyze and generate hundreds of new ideas, gaining new knowledge and motivation to solve the problems. An example is China's experience, which modernized Tesla electric cars and flooded the global auto market with them.

We believe that increasing the efficiency of intellectual work should also make extensive use of artificial intelligence. This applies primarily to the use of various teaching methods. In our view, it's time to harness the power of artificial intelligence to enhance the mental abilities of every student: improving their memory, thinking speed, and logical, innovative problem-solving skills. We also analyze their abilities (art, music, technical aptitude, etc.) to create individualized educational programs. We believe such selection should begin in kindergarten and continue throughout subsequent stages of student development and learning. Particular attention should be paid to learning foreign languages, information technology, and modern economic trends.

According to the World Bank, revenue from artificial intelligence technologies is expected to reach \$15.7 trillion by 2030. In China, this figure will be \$7 trillion, or 26% of the gross domestic product, while in North America these figures will be \$3.7 trillion and

14.5%, respectively; in the European Union, \$1.8 trillion and 9.9%; and in developing Asian countries, \$0.5 trillion and 5.4% of these countries' GDP [9].

India is developing rapidly, with software sales revenues estimated at \$245 billion in 2023 alone. India currently ranks first in the world in the training of superprogrammers, with 1.4 million people. The artificial intelligence market size in 2024 will grow almost 4.5-fold, exceeding \$28 billion. This growth is actively supported by the government: within the framework of the national program India AI Mission, \$1.2 billion will be allocated for the development of artificial intelligence over five years [10]. India accounts for only about 4.5% of the world's artificial intelligence specialists [11].

We believe that successful AI-based organizational transformation requires the commitment of the entire organization. Algorithms account for approximately 10% of success in AI implementation, while data and technology infrastructure contribute another 20%. The remaining 70% depends on people, processes, and business transformation. In other words, a great deal depends on the skills of personnel, who play a key role in improving the efficiency of production and services.

In this regard, values are changing in the Republic of Uzbekistan, where the experience of the United States and European countries plays a significant role. We have attempted to represent this experience in the form of a pyramid (see Figure 1).

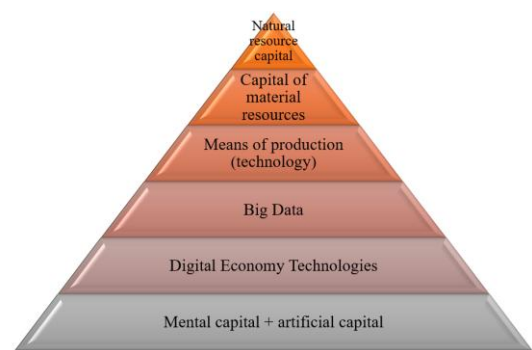


Fig. 1. Pyramid of economic development

As the pyramid data demonstrates, any country's economic development should be based not on resource capital, but primarily on intellectual capital. While natural resources are certainly a huge advantage (for example, in

Russia, Arab countries, and others), experience shows that relying solely on natural resources is not a promising path for economic development. Current development realities demonstrate that, given the limited availability of natural and other resources, greater attention must be paid to intensive economic development methods, especially in today's increasingly challenging environment.

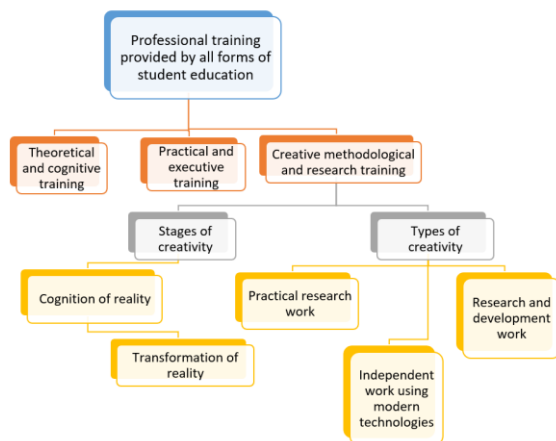


Fig. 2. *Types of professional training for economists*

This situation should be taken into account when training modern economic personnel. Approaches to training, standards, curricula, and methods should also be modified to reflect the developments in digitalization and greening. Therefore, we propose a framework for the types of professional training for economic specialists (see Figure 2).

DISCUSSION OF ANALYSIS AND RESULTS

The study should further explore the types of student training to determine their impact on the creative work of future economic specialists (see Table 2).

Modern educational standards and plans place considerable emphasis on organizing students' independent work, which, in our view, is appropriate. However, this work must be properly directed and targeted, enabling the development of students' creative work. In this regard, leveraging the experience of the MBA program at Anhalt University, a partner of our Tashkent State University of Economics, is of great importance. In Germany, particular attention is paid to creativity, creating

conditions for developing creative thinking in master's students and integrating theoretical knowledge with practice, which is the foundation of creative work.

Table 2. *Types of preparation, stages of creativity and types of research (see attachment)*

CONCLUSION

Modern life, with its growing contradictions in the context of market relations, pluralism of opinions, and diversity of economic theories and programs, demands a search for new approaches. It cannot be assumed that epistemology has exhausted itself completely. Moreover, with the advent of modern digital technologies and artificial intelligence, the process of solving many problems is significantly accelerated, which places particular importance on the development of creative work.

It seems that the conscious participation of all stakeholders—from the Ministry of Higher Education, Science, and Innovation of the Republic of Uzbekistan to every teacher and student—is necessary to prepare economists for creative work. After all, it is the level of creative training today that determines the quality of education, the qualifications of future specialists, and, consequently, the success of the national economy in the context of globalization.

In this regard, we agree with the idea of the industrial revolution put forward by Klaus Schwab, founder and president of the World Economic Forum in Davos, and the "4C" system: critical thinking; creativity; communication; Coordinating With Others [12]. Only by working together – education, science and production – can we achieve a synergistic effect and ensure economic sustainability.

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Attachment :

Table 1. *Comparison of intellectual and physical labor*

No	Efficiency of intellectual labor	Results of physical labor
1	2	3
1.	We spend mental effort once, but the result can be used many times (for example, a software product can be copied by the millions)	It is impossible to examine copies of physical labor, or they are too expensive (for example, every day you have to dig 100 square meters of land)
2.	When using the results of mental work, one must know that they are inexhaustible.	When using physical labor, they are reduced (natural resources, time, human capital, etc.)
3.	When knowledge is used, it is not depleted, but accumulates as experience and is the basis for creating new knowledge.	Physical labor rarely creates new knowledge.
4.	The scientific and technological revolution develops in cycles within technological paradigms. Today, developing countries (the United States, China, and Germany) are in the sixth technological paradigm and are developing the foundations of the seventh technological paradigm.	Physical labor can only be repetitive and is limited by the capabilities of the individual worker.
5.	Mental labor can be performed remotely (online via the internet) and simultaneously shared with millions of other consumers. Currently, there are 1.5 billion freelancers.	Physical labor cannot be performed remotely; it requires a specific schedule, additional travel expenses, vacation pay, sick leave, etc.
6.	When performing mental work, one can simultaneously perform various activities.	Only physical labor is performed.
7.	Experience with mental work accumulates in the performer's subconscious and is usually passed down through generations.	Physical labor, if passed down through generations, is only in a primitive, ineffective form.
8.	If 100 participants at a scientific conference exchange opinions, each of them will have 99 new sources of information.	When the results of physical labor are transferred, one person's output decreases while the other's increases.
9.	Intellectual labor does not consume natural and material resources; on the contrary, scientific knowledge and	Physical labor reduces all types of resources, including human life expectancy.

	innovation greatly increase the efficiency of their use.	
10.	Mental labor increases the efficiency of physical labor and reduces its volume.	Heavy physical labor reduces the supply of nutrients, water, and oxygen to the human brain and impairs its ability to function.
11.	Creative labor methods, which we will discuss in more detail below, have their own characteristics. For example, using the "global internet, collective intelligence" of social networks to gain new knowledge.	Physical collective labor does not bring additional synergistic effects
12.	The transfer of copies of knowledge and innovations is significantly reduced in cost as economic and mathematical modeling improves, as well as ICT advances.	The results of physical labor require the presence of a large and expensive material and technical infrastructure and the existence of intermediaries.
13.	Developing a "Roadmap" for developing young people's mental abilities, strengthening their memory and thinking skills, will ensure the effectiveness of continuous education, including economic education.	Physical labor leads to a decrease in mental capacity and reduces labor efficiency, increases the consumption of natural resources

Table 2. *Types of preparation, stages of creativity and types of research*

No	Training objectives	Training means	Training results
1	2	3	4
	I. Theoretical and cognitive training		
1.	Give students a sum of knowledge	Study of general economic theory, theory of applied sciences and other related subjects	Students must have broad theoretical knowledge and the necessary economic erudition.
	I. Practical and executive training		
2.	To train students in performing work	Study of the practical part of applied economic sciences	Students must be able to implement current administrative and legal acts (instructions, methods, regulations), conduct analysis and economic calculations, and others
	II. Creative methodological and research training		
3.	To teach students creative work.	Study the sciences of thought, epistemology, and economic research	Students should be able to conduct independent economic research.

		methodology and methods.	
	1. The creative process a) cognition of reality		
4.	To teach students the ability to transform reality.	Study practical research methods.	Students should be able to draw independent conclusions and identify shortcomings by analyzing the practical activities of enterprises or entrepreneurs.
	b) transformation of reality		
5.	To teach students the ability to transform reality.	Study methods for transforming reality.	Students should be able to make independent recommendations to address deficiencies in the activities of business entities.
	2. Types of research work a) practical research work		
6.	To teach students practical research skills.	To study practical research methods.	Students should be able to analyze the economic activities of economic entities and make effective management decisions to improve their performance.
	b) research work		
7.	To teach students research skills.	To study research methods.	Students should be able to make scientific contributions to solving research problems.
	c) independent work using modern technologies		
8.	To teach students how to use their skills in modern technology.	Explore digital technology and artificial intelligence methods.	Students should be able to make references to the information being processed, strengthen their skills in the application of modern information, digital technologies and artificial intelligence