

Improving The Efficiency of The System of Material Incentives of The Professor and Teaching Staff of Higher Educational Institutions

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Abstract: The article examines the actual problems of the effectiveness of the current system of remuneration of the teaching staff of higher educational institutions, offers developed scientific recommendations on the formation of wages that stimulate labor activity in order to increase the final results of scientific and pedagogical activity.

Keywords: higher education, labor motivation, wages, wage system, incentives, basic salary, GDP per capita, national income, quantity and quality of labor, creative work, innovative economy.

Introduction

At present, the results of the formation of an innovative economy have become the main criteria for assessing the socio-economic development of human society. The formation of an innovative economy is unthinkable without the participation of dynamically improving in terms of quality, active and highly productive work of scientists, professors and other researchers, who are the leading scientific force of any development. Realizing this truth in a timely manner, Western countries have paid serious attention to the motivation of the research community. Having created various incentive mechanisms and put them into practice, they formed a system that actively influences the scientific and creative practice of those involved in research activities. Such a far-sighted strategy has yielded its practical results: Western countries have achieved colossal results in socio-economic development. The scale of socio-economic benefits that they receive through the intensive development of innovative processes is very wide. For example, the USA is the first economy in the world in terms of innovative development. While the US population is only 5 percent of the world's population, it accounts for 20-25 percent of global GDP. 40% of Nobel Prize winners live in the United States.

According to statistics, due to the innovative development of the economy in this country, 27.1 million new jobs were created (18.8% of the total), the contribution of innovative sectors to the country's GDP amounted to 5.06 trillion. US dollars (34.8% of

GDP). During the twentieth century, life expectancy in the country almost doubled, incomes and well-being of the population grew rapidly. [1] There is no doubt that the hard and productive work of scientists underlies the achievement of such a level of socio-economic growth. Today in Uzbekistan, where the formation of an innovative economy is considered a priority for long-term development, issues of decent remuneration for workers in science and education are of great importance. This is due to the fact that a successful transition to a qualitatively new competitive innovative economy depends, first of all, on the results of the work of employees in this area, the degree of their interest in high labor productivity and its results. The problem of the formation and development of the economy on an innovative basis cannot be solved without the introduction of an effective system of motivation for highly qualified specialists, scientists, and researchers for more productive and high-quality work. This is an axiom that does not require proof and has been successfully tested by the practice of many countries of the world. Currently, in Uzbekistan, the government pays special attention to improving the system of remuneration of educators and scientists, for this purpose a number of noteworthy decisions have been adopted and implemented.

For example, starting in 2020, Doctors of Science who achieve high research results receive a salary bonus of up to 60 percent, and candidates with a PhD (or the equivalent degree in foreign countries) up to 30 percent from the salary. Also, the Regulations on the procedure for additional payments to employees with academic degrees who carry out scientific, scientific-pedagogical and labor activities in the field of science and education in state organizations were approved. Based on statistics, it can be said with confidence that in recent years, as a result of large-scale economic reforms in the country, the salaries of professors, teachers and researchers in Uzbekistan, compared to previous periods of the country's independent development, have increased significantly. However, if we compare the average salary of scientists in Uzbekistan with the income of their colleagues in foreign countries that are leaders in socio-economic development, it becomes obvious that the situation in our country is not entirely favorable in this matter.

Our study shows that, despite a number of measures taken by the state in recent years to increase the remuneration of professors and scientists of higher educational institutions, the motivational role of the existing remuneration system is still very low. It does not correspond to the solution of the tasks of mobilizing the potential of scientists to solve scientific problems for the intensive development of the national economy, achieving high results in education and research. Focusing on the problems of the higher education system, the President of the Republic of Uzbekistan Sh. M. Mirziyoyev noted: "We have to regret that at a time when the economy is developing dynamically, the higher education system, instead of becoming a locomotive of progress, is still not going in step with the times" [2]. In our opinion, in order to solve the problem identified by the President of the country, it is necessary to form a modern system of incentives to improve the effective work of professors and teachers of universities.

According to experts, one US dollar spent on the higher education system in developed countries ultimately benefits the state in the amount of six US dollars [3]. However, unfortunately, today in Uzbekistan, due to the lack of a highly effective motivational mechanism that contributes to the full realization of the scientific potential of the industry, this factor of increasing profits to the state treasury is not used effectively.

Therefore, the problem of adapting the mechanism for generating incomes of higher education workers to the goals of maximizing their labor potential and improving the wage system remains relevant.

Analysis of the literature on this topic.

An important contribution to the creation and development of the theory of stimulation and motivation of labor was made by such foreign researchers as K. Alderfel, J. Adair, V. Vroom, F. Herzberg, K. Levin, E. Lawler, D. McGregor, D. McClelland, A. Maslow, V. Ouchi, L. Porter, F. Taylor and others. This topic was also studied by scientists – economists of the Commonwealth of Independent States V.V. Adamchuk, A.P. Bagirova, N.A. Banko, O.S. Vikhansky, A.G. Zdravomyslov, A.I. Kartashov, A.Ya. Kibanov, M.M. Potashnik, M.G. Rogov, N.S. Yashin. In Uzbekistan, theoretical and methodological issues related to relations in the field of distribution and income were studied by scientists-economists of the republic S.S. Gulomov, A.U. Ulmasov, Kh. Allakulov, N.U. Beknazov, T.T. Kh. Abdurakhmonov, Sh.R. Kholmuminov, Y.A. Abdullaev, M.M. Mukhammedov, N.K. Zokirova, A.A. Rakhmatov, B.B. Akhmedov, U.S. Yuldashev, R.F. Dzhumanova, R.R. Khasanov and others.

In modern literature, there are a number of studies based on different views on the motivation and encouragement of the professional activities of the teaching staff of higher educational institutions. However, they do not touch upon the problem of forming a motivation system that takes into account the specifics of the work of university professors and lecturers. These studies did not solve the problem of forming a system to stimulate the achievement of the final results of the work of employees of higher educational institutions from the point of view of the socio-economic development of society.

Research Methodology

Since the subject of our study is devoted to the issues of increasing the income of employees of higher educational institutions, first of all, the relevant decrees and resolutions of the President and the government of the country were analyzed, as well as the degree of study of this topic in the scientific works of economists. Statistical studies, comparative analysis of literature and methods of substantiating proposals were used as the research methodology.

Analysis and results

The importance and relevance of educational services lies in the fact that the results and quality of work of specialists employed in this area have a direct and sensitive impact on economic growth and GDP. As you know, today Uzbekistan is faced with the task of forming an innovative model of economic development. The solution of this urgent task is closely related to the efficient use of the scientific potential of professors and scientists of the country. In order to improve the scientific and educational activities of higher educational institutions and increase the innovative potential of the higher education system, it is necessary to strengthen the effectiveness of the system of material incentives for faculty.

Since the motivational effect of existing wage mechanisms is very low, it does not correspond to the ideas of promoting Uzbekistan to a leading position among developed

countries by fully mobilizing the capabilities of scientists to solve scientific problems for the development of the national economy, achieving high results in education and research. In modern conditions of educational activity, universities should be organized on the basis of a system of material incentives for teachers, on the introduction of a remuneration system that takes into account the complexity of the work performed, the quantity and quality of labor expended. In our opinion, the system of financial incentives for university teachers should also depend on the assessment of the activities of educational institutions.

The introduction of the base salary made it possible to overcome a number of shortcomings inherent in the previously used Unified Tariff Scale, strengthened the relationship between the efficiency of the teaching staff and their income in the form of wages. However, the introduction of basic wages did not allow to radically improve the quality of educational services, to solve the problem of ensuring the effectiveness of research activities. In the course of the analysis, we identified a number of shortcomings that are characteristic of official salaries introduced into practice.

The main disadvantages of the new wage system introduced in higher education institutions

Structural element of wages	Identified shortcomings
Base salary	1. The scientific degrees of associate professors and professors presented by the Higher Attestation Commission are not taken into account. 2. The seniority is not taken into account in the official salary.
Allowances	1. The presence of the same one-time allowances for all employees without regard to performance.
incentive payments	1. The mechanism for the effectiveness and intensity of the activities of the teaching staff has not been defined. 2. Lack of a mechanism for an objective assessment of the work of the teaching staff. 3. The mechanism for assessing the quality of work performed has not been defined. The absence of a difference between the salaries of employees who work effectively and to no avail. 4. Lack of economically justified incentive mechanisms for the teaching staff. 5. Lack of rating of the activities of the teaching staff.

In our opinion, one of the most serious shortcomings of this system is that its introduction did not ensure an increase in the wages of workers in the industry compared to the wages of workers in other sectors of the national economy.

We believe that the wages of workers in the field of science and education should not be less than in other sectors and sectors of the national economy, and if possible higher. Only

then will it become the main driver of economic growth, the leading force for sustainable economic growth. However, the results of empirical analysis show that the situation in Uzbekistan in this regard leaves much to be desired (Table 1)

Table 1 : Average monthly nominal wages by type of activity in the Republic of Uzbekistan in 2017-2020

	Years			
	2017	2018	2019	2020
in the republic as a whole	1457,8	1822,2	2324,5	2667,6
Industry	2090,7	2731,1	3310,2	3682,9
Building	1777,9	2297,3	2761,2	3212,3
Trade	1676,5	1990,3	2469,8	2748,1
Transportation and storage	2028,6	2507,4	2965,5	3405,3
Information and communication	2502,2	3347,5	3971,8	4368,8
Financial and insurance activities	2694,7	3500,5	4798,4	6230,6
Education	1160,2	1396,4	1841,2	1979,7
Health and social services	979,4	1173,1	1534,3	1808,5
Other types	1261,8	1711,2	2309,1	2672,4

It can be seen from the data in the table that the average earnings of education workers are much lower than in other sectors and sectors of the national economy. Even after a number of measures taken by the state in recent years to increase the salaries of scientists and professors, school teachers, the situation has not changed. In 2020, the average salary of employees in education was 72.0% of the average salary of employees in trade, 45.1% in communications and information, and 31.8% in finance and insurance. To complete the picture, we compared the wages of educators in Uzbekistan with wages in a number of foreign countries (Table 2).

Table 2: Average wages in service industries around the world in 2019 (in US dollars)

Service industries	average salary			
	USA (1160,0)	Germany (1678,0)	Russia (174,0)	Uzbekistan (25,0)

Trade and catering	4760	4234	453	281
Education	3550	4970	442	169
healthcare		6093	462	149
Transport	3760	6292		
Communication and information services	5670	6216	572	343
Financial services	5540	6290	1145	405
public services	3263	4438	-	-
other services	3080	-	-	-
In general, in the field	4580	4576	560	219

The results of the analysis show that the average salary of education workers in Uzbekistan is 22.8% of the total wages of workers in the national economy, 39.9% in trade and catering, 50.8% in communications and information services, and about 2.5 times lower than in the financial services sector.

At the same time, the average salary in this area in Germany is 17.4% higher than in trade and catering, 12.0% higher than in the civil service and 9.0% higher than the average salary in the economy in general.

Suggestions and conclusions

At present, there is a sharp difference between the salaries of professors and teachers in Uzbekistan and the salaries of their colleagues in developed countries. In the United States, for example, 50% of PhDs earn an average of \$70,600 per year. A research university laboratory assistant earns an average of \$40,000 per year, or \$3,300 per month. In Germany, an experienced professor earns 41.5 thousand euros a year, and young specialists in the field of science - 34 thousand euros and more. Even in South Africa, Malaysia, Argentina and Colombia, scientists are paid very high salaries.

How, in this scenario, can you compare the real monthly salary of a doctor of science and other researchers in Uzbekistan with the results in countries that value science? In our opinion, the above makes it urgent to raise the wages of science and education workers in Uzbekistan and bring them closer to world standards. In order to produce and offer innovative goods and services to world markets that can meet modern requirements and compete with products created in developed countries, it is vital for our country that scientists and educators create world-class competitive innovative ideas for subsequent implementation. And in order to achieve such results, it is important to ensure that their salary is comparable with the salaries of foreign researchers. As a result, due to low salaries, many Uzbek scientists and leading specialists work in Russia and other countries. At the

same time, we have a huge need for highly qualified potential creators of innovative ideas who can contribute to the development of the country in the context of the formation of an innovative economy.

In order to attract these people to work in the national economy, they need to be paid a salary no less than what they now receive abroad. In our opinion, even in difficult conditions for the country, everything must be done to return specialists to Uzbekistan and use their potential for the economic development of the republic. We think that such measures will definitely have a positive effect. We believe that reducing the gap between the salaries of professors and scientists in Uzbekistan and in countries where the work of scientists is highly valued, on the one hand, will contribute to the return of our compatriots working abroad, on the other side will reduce the outflow of talented young people interested in high wages. The problem is also that as a result of the recent policy of in-depth study of foreign languages among scientists, the proportion of highly qualified specialists among young talented scientists and researchers who are fluent in English and other foreign languages is growing. Naturally, they have the opportunity to earn several times more than at home, and this pushes young people to go abroad. As a result, Uzbekistan is losing part of its unique scientific potential, which is invaluable to it.

In our opinion, in order to increase the role of education in innovative development, it is necessary: firstly, to develop a system of remuneration for professors and teachers of higher education, taking into account the complexity of the work performed, the volume and quality of work; secondly, the introduction of a motivational mechanism based on an objective upper wage limit for all education workers; thirdly, the organization of labor on the basis of international standards; fourthly, to introduce effective methods and ways of motivating employees in the field of education.

Improving the system of remuneration of professors and teachers of higher educational institutions should be based on the following criteria:

- categories of wages by academic degrees;
- linking the base salary for each position to the length of service;
- introduction of a system for assessing the intensity and effectiveness of teachers' work;
- the mechanism of compensation payments;
- social payments.

Based on this, we recommend that the system of remuneration of professors and teachers of higher educational institutions be formed from these positions, namely, taking into account the base salary, allowances and incentive payments for the year. Studies show that in world practice in most countries of the world, the salaries of scientists, teachers, employees of universities and research institutes are determined by their contribution to the gross domestic product (GDP) and GDP per capita [4], because economic growth rates largely depend on results of the country's research resource. Of course, universities have a positive effect on economic growth and GDP through the training of qualified personnel,

but, in our opinion, it is not entirely correct to calculate the salaries of higher education teachers based on GDP per capita. Because there are investments in the structure of GDP, which is not considered income.

Proceeding from this, we propose to take the value of national income per capita as a criterion for the upper limit of the basic monthly salary of professors and teachers of higher educational institutions. With this approach, the initial average wage of a highly skilled workforce should be in the amount of national income per capita. To do this, we first calculate the amount of national income produced in the country. To calculate national income, we use the following formula:

$$ND = GDP - A - T$$

Analysis of the dynamics of the structure of the national income of the Republic of Uzbekistan (billion soums) [5]

Name of indicator	Years						
	2007	2008	2010	2012	2013	2014	2017
GDP (by income)	28190,0	38969,8	62388,3	96589,8	118998,1	144901,0	249136,4
Depreciation	1 394,7	2 315,4	3 544,3	5 196,4	6 583,1	7790,4	13461,8
Business taxation	2 916,9	4 122,2	6862,8	11 187,8	13 039,4	15 618,20	26133,6
National income	23878,40	32532,20	51981,20	80205,60	99375,60	121492,40	209541,0

Source: Calculated on the basis of annual statistical collections of the Republic of Uzbekistan.

Based on this, a highly qualified professor-teacher can receive payment for highly productive work for the benefit of the country in the range from the initial amount to the amount of national income per capita. This can be expressed in the following economic and mathematical model:

$$ZP = D * K$$

Where

ZP - monthly salary

D - per capita income

K - coefficient

The coefficient allows you to determine the final salary, taking into account the position of a professor, the level of qualification, while the upper limit is 2, the lower is 0.5,

and a seven-step limit is introduced for the category of professors of higher educational institutions.

Table 3

Basic official salary of employees of universities for the payment of wages (in thousand soums *)

п/н	Job titles	National income per capita	Coefficient	Base salary
1.	Doctor of Sciences, Professor	6416,5	2	12833,0
2.	Doctor of Sciences, Associate Professor	6416,5	1,75	11228,9
3.	PhD, Associate Professor	6416,5	1,5	9624,8
4.	PhD, Senior Lecturer	6416,5	1,25	8020,6
5.	Senior lecturer without a degree	6416,5	1,0	6416,5
6.	Teacher	6416,5	0,75	4812,4
7.	Lecturer - trainee	6416,5	0,5	3208,5

*Developed by the author.

The introduction of this wage system will radically change the motivation of work in the field of higher education, will encourage professors and scientists to fully meet the growing needs of society in highly qualified specialists, pay serious attention to the practical significance of research, and increase their responsibility. For example, if the base salary of a doctor of science, a professor is 12,833.0 thousand soums, then this amount is determined by increasing the national income per capita in 2017 by 2 times. The base salary of the following officials is determined based on a fixed rate. According to calculations, the trainee teacher who occupies the lowest level can receive 3208.5 thousand soums. This approach to motivation will encourage young professionals to professional growth and high results. In higher education institutions abroad, for example in the USA, teachers earn from 3,000 to 5,000 dollars, professors and doctors of science - from 8,000 to 15,000 dollars a month, doctors of science in Kazakhstan - from 1,000 to 2,300 dollars, in Japan - from 2,800 to 4,600 dollars, in France - 1900-4700, in Malaysia - 2800-7800 dollars, in Turkey - 2100-3800 dollars [6] and their image in society is very high, which we cannot say about colleagues in our country. It should also be noted that the salaries of rectors of US universities, for example, are higher than those of the Minister of Defense of this country. However, in order for our scientists to receive such salaries, the level of development of the

national economy must meet the criteria existing in the United States. It is known that, according to the recommendations of the International Labor Organization, workers should not be paid less than \$3 per hour [7]. From this point of view, the monthly salaries of professors and lecturers are much lower. For example, according to the Decree of the President of the Republic of Uzbekistan, from July 1, 2019, a doctor of science, a professor receives 5550.0 thousand soums. If we take this monthly salary as the professor's monthly workload, his hourly rate, according to our calculations, is \$4.50. For comparison, we calculate the hourly salary of a professor from the United States. If he earns \$8,000 a month and does a 154-hour workload, his hourly pay is \$52. At the same time, it should be taken into account that the workload of our professors and teachers is currently 3-5 times higher than in foreign countries. However, we have introduced a multi-stage form of education - bachelor's, master's, doctoral studies, as well as credit technology of education, which allows the student to independently choose the subject and teachers, and in this regard, we are already working according to Western standards. However, the system has not reached the level of rationality. The salary of the teaching staff, its nature has remained at the level of the last century, credit technologies also mean that the salary of a professor required by students should be much higher. We believe that our recommended base salary meets these requirements. We have calculated a salary of 12,833 thousand soums per month for a doctor of sciences, a professor. And his hourly rate will be \$10.

At present, the state is able to pay for the work of professors and teachers in the proposed amounts, since today there are 2,200 doctors of science and 8,300 candidates of science in the country. Our state is able to provide decent working conditions for scientists and professors, who are not very numerous, but in their hands is the fate of the innovative development of the national economy.

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