

# Actual Problems of Education and Science in Russia

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**Abstract**—The article discusses the main problems of education and science in modern Russia. On the actual material, the authors show not only the main achievements, but also certain shortcomings both in the education system and in the development of science during the reign of President V. Putin. The purpose of this study is to study the problems that Russia must solve in order for its education and science to become the basis of the knowledge economy and contribute to improving the quality of human capital. Based on this goal, the authors tried to justify the new priorities of state policy in the field of education and science.

In this regard, this study raises the following main questions. 1. To determine the role and place of the education system in the formation of human capital and the development of the knowledge economy. 2. To analyze the reasons for its low competitiveness of domestic education and science in comparison with the leading countries of the world. 3. Investigate the effectiveness of public administration of education and science in Russia and show the ways for its further improvement.

The authors hope that the implementation of the ambitious goals and objectives published in the May (2018) decree of President V. Putin will improve the condition and quality of Russian education and science.

**Keywords**—education, science, human capital, problems of Russia

## I. INTRODUCTION

The Constitution of the Russian Federation proclaimed: "Everyone has the right to education." The Basic Law guarantees "the accessibility and free availability of pre-school, basic general and secondary vocational education in state or municipal educational institutions". Everyone has the right on a competitive basis to receive higher education free of charge in a state or municipal educational institution and in an enterprise. Basic general education is required. The Russian Federation establishes federal state educational standards, supports various forms of education and self-education [1].

In Russian society, an understanding of the unconditional value of education, everything that is connected with this area, has historically been established. Recently, it is with education that people's aspirations for success in life are becoming more closely linked. But not only the market should stimulate people's needs for educational growth. In the era of the "knowledge economy" and innovation, the state should support citizens in their desire to increase knowledge.

Today, education is gradually becoming a priority area of activity of the state. Financing of education at the federal level over the past eight years has increased more than 10 times. By investing in education, a country is financing its future. Russian schoolchildren were traditionally the best in the world in mathematics, chemistry, computer science. At the International Mathematical Olympiad in Vietnam, they immediately won five gold and one silver medal, becoming absolute champions.

To solve the accumulated problems in this area, the national project "Education" was adopted, the main purpose of which is to find and support the leaders of the education system.

Despite the implementation of the national project "Education", the school teacher did not become a real priority in the ongoing reforms. The key figure in the educational process is still paid very little for labor. The first presidential term of V. Putin was paid to a young teacher in a public school less than the cost of living\*.

The system of Russian education also has other serious shortcomings. According to the rating of the Organization for Economic Cooperation and Development (OECD), which implemented the International Program for the Assessment of Student Educational Achievements (PISA), in Russia students of 15 years of age demonstrate a level of knowledge "below average". An example of a decrease in the quality of education in schools can be the fact that, according to the results of a unified state exam in one of the main school courses, mathematics, about 20% of school graduates in recent years have received a rating of "not satisfactory."

Employers note the lack of preparedness for the work of many graduates of the vocational education system. There is a mismatch between the directions of training students in professional educational institutions and the demands of the labor market. Many graduates do not work in their specialty.

The field of education should become the basis for expanding scientific activity. In turn, science also has significant educational potential. It is necessary to provide assistance to talented young people conducting active research activities. To help them successfully integrate into the scientific and innovative environment.

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\* The cost of living is the minimum level of income that is necessary to meet a person's vital needs. In 2019, it did not even reach \$200.

For Russia, the question of the model of education is extremely important. Today, the idea dominates in Russia - to form an education system based on certain Western models, copying mainly the American system and the Bologna system. However, in our opinion, the mechanical adjustment of the domestic school and science to any foreign systems is a negative trend. It has already brought more trouble to national education than benefits. The rejection of the Soviet education system has already led to a marked decrease in its quality.

The level and quality of national education largely determine the state of Russian science. Due to errors in the organization of education, one can observe a decrease in the quality of national science. Suffice it to say that over the past two decades, scientific results in Russia have not been awarded the prestigious Nobel Prize.

## II. PROBLEM STATEMENT

The reason for a serious analysis of the state of school education was the results of passing the unified state exam (USE) in 2018 and 2019. According to statistics, out of 750 thousand graduates of Russian schools, 24,294 students did not pass the USE in mathematics (7%); 5.9 percent or 3984 people (0.4%) did not cope with the Russian language exam; in chemistry, 12816 schoolchildren (15.88%) did not complete the examination tasks; 6% do not know geography, and 4% of schoolchildren know literature. 48000 graduates (6.4%) did not receive high school diplomas in 2019. In 2018, the exam did not pass 35088 (4.8%) graduates of Russian schools, including: in the Russian language - 0.4%, mathematics - 7%, geography - 7.3%, history - 9.6%, computer science - 11.51%, chemistry - 15.88%, social science - 16.43%, biology - 17.01% [2]. Thus, over the past two years (2018-2019), over 83,000 uneducated children have graduated from Russian schools. This is the population of a large city.

The admissions committee of universities in 2019 drew attention to the following fact: the applicant who passed the exam in Russian for 100 points had a lot of spelling mistakes in the application for admission to study at the university. Especially a lot of such incidents among applicants from the North Caucasus. The officials responsible for passing the USE reject the possibility of fraud in this area, and experts are convinced that corruption in education could not be defeated; it simply went to a different level.

Experts will explain the decline in the quality of school education by a number of reasons, including a lack of funding, a decrease in the number of schools, difficulties in school programs, etc. The authors agree to similar embrace. Indeed, for the period from 2000 to 2018, the number of schools in our country as a result of the so-called "optimization" decreased from 68.1 to 41.9 thousand. In total, during the reign of Putin and Medvedev, Russia lost 26.3 thousand schools [3]. That is, 1650 educational institutions were closed every year in the country. In order to somehow rectify the situation, more than 180 new schools were opened in 2018 in the framework of the federal government program in various regions of Russia. For comparison: before the so-called reforms in the country, there were almost 70,000 schools, even under Stalin, before the war, 5,000 new schools were built each year. This can be seen in the following diagram.

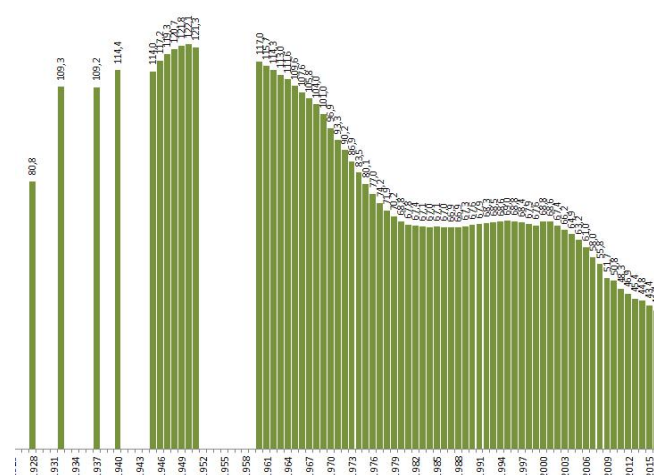


Fig.1. Reducing the number of schools in Russia in 2000-2018.

Unfortunately, the destructive practice of depriving villages of school institutions continues to this day. Optimization was carried out in accordance with the plan "Changes in the sectors of the social sphere aimed at improving the efficiency of education and science until 2018", adopted by order of the government back in 2014. In accordance with the document, it is planned to liquidate kindergartens and schools that regional authorities recognize as ineffective. In total, until 2018, 3,639 rural kindergartens and schools were closed, and some institutions of secondary vocational education, additional education, and boarding schools for orphans were also closed.

During a direct line with the president on June 7, 2018, residents of the village of Staraya Surtayka, Altai Territory, addressed the head of state and spoke about the threat of closing a small school, where 47 students from three villages are currently studying. V.V. Putin replied to this: "Small schools, we know this well, they are quite expensive, because in order to maintain the building, the teaching staff needs to spend a certain amount of money, which could be spent in such volumes on schools where students do not study 40-50 people, and a hundred or two hundred [4].

The authors of the article, on the basis of their half-century experience in the educational system, are convinced that the decrease in the level of education of schoolchildren and students is taking place in Russia not only due to a reduction in the number of schools and universities. The main reason is the change in the attitude of the state to the personality of the school teacher and university professor, which are key figures in the educational process.

The quality of education does not depend on numerous plans and programs, the availability of educational standard standards that government officials rely on, but on the training of someone who transfers knowledge to a new generation, who forms the basis of human capital through his work. And here we are faced with many problems that are still unsolved in Russia.

The first problem is that the remuneration of teachers in our country does not meet international standards. Low salaries increase the turnover of teaching staff, both in schools and in

Russian universities. Such a meager, humiliating salary, which teachers of schools in the Russian Federation receive, is not found in any European country. "Today we are adopting a lot from the West: the Unified State Exam, a two-level bachelor-master training system," said O. Kutafin, President of the Moscow State Law Academy, academician of the Russian Academy of Sciences, "We don't take just the level of teachers' salaries. And yet this is the only thing that, by and large, we needed to copy from the West ... " An elementary school teacher in Germany earns from 38,300 to 51,500 euro per year, and the monthly income of a school teacher in France reaches 3,000 euro, which at the rate of the Central Bank of the Russian Federation exceeds 200,000 rubles. The salary of a university teacher abroad is also several times higher than in the Russian Federation, which positions itself as a social state. So, professors and associate professors at German universities receive an average of 4650 euro, which in rubles exceeds 300 thousand. Young teachers are content with a modest 2,800 euro. In the USA and Singapore, university professors receive a salary of 48-54 thousand dollars a year; the highest-paid annually 90-100 thousand dollars or more than 500 000 rubles a month. The highest-paid educators work in Luxembourg. Their average annual income is from 80 to 100,000 euro [5] or more than 700 thousand rubles per month. In the USA and Singapore professors of universities receive 48-54 thousand dollars a year, the highest-paid have 90-200 thousand dollars. The salary of a professor at a state Russian university makes up only 1/37 of the salary of a colleague from Harvard University [6].

They go where their work is valued higher, including abroad.

Another problem in the Russian education system is the excessive number of plans, programs, reports, references and other not very necessary documents that a teacher must prepare. And this greatly increases the teacher's workload, distracting him from the main duty - to teach and educate schoolchildren and students.

With the introduction of electronic document management, the load did not decrease but increased - due to the obligation to fill out all kinds of electronic journals. According to experts, for example, the deputy director of the gymnasium, as a result of the development of numerous documents, which are mainly needed for officials checking schools and gymnasiums, the burden on teachers increases. And to the detriment of preparing for the next lessons.

In universities, in addition to low salaries and the preparation of not very necessary documents, there is a problem of aging personnel. The average age of doctors of science is more than 60 years. The reason is that low wages do not attract young and capable people who want to get better pay for their work. Thus, the remuneration of university professors and their aging are interconnected problems of the higher education system, as two sides of the same coin.

In fairness, it should be noted that in recent years, the Russian government has been taking steps to increase the salaries of faculty members. An important role in this was played by the May (2012) decrees of President V. Putin. But here, education officials in a number of regions were able to

ignore the directives of the head of state, so teachers and professors did not receive the increase in their salaries promised by 2018.

In order to correct the situation, in order to materially encourage university scientists and attract talented young people to universities, a system of grants was introduced. The most attractive of them is the so-called Megagrants, which operate for the seventh consecutive year. Their total budget for 2019 exceeds 2 billion rubles. The price of one such grant for a leading scientist and his team is 90 million rubles for three years. The research team formed by the leading scientist who won the grant must include at least two candidates of sciences and three graduate students, as well as three capable students. At the same time, the share of young scientists, under the terms of the grant, should be at least 50 percent [7].

Education should become a tool to transfer the country to an innovative path of development. "The transition to an innovative development path is connected, first of all, with large-scale investments in human capital," Vladimir Putin noted [8]. Vladimir Putin set the task for Russian education: those Russian citizens receive the highest quality and most modern education in demand on the labor market.

The priority national project in the form of a program document issued by the government on the basis of a presidential decree of May 7, 2018 will continue: the introduction of new wage systems, payment of remuneration for class teachers, the supply of modern teaching equipment and buses, support for the best teachers and schools is planned gradually transfer to the federal target program.

For the successful implementation of state policy in the field of education and science in the budget of the countries for 2019-2021, it was provided for the allocation of necessary finances. The expenses for education are written in the column: 688 billion rubles are allocated for the national project "Education" (10.5 billion US dollars), and 387 billion rubles for science. The state budget provides for an increase in education spending: in 2019 by 27.9% (by 176.1 billion rubles) in relation to 2018, which is due to the start of the implementation of the National Education Project and its federal projects in 2020 compared with 2019, expenses should grow by 2.2% (by 17.4 billion rubles), since the National Education project will be implemented until 2024 [9].

Everything is relative. If we compare the volumes of financing of Russian education and science, for example, with the USA, then we can see a very big difference. The amount of funding in the United States is ten times greater higher than Russia. According to the Ministry of Finance of China, the state budget spending on education in 2018 increased by 8.7% and reached a record volume of 22 trillion 90.6 billion yuan (\$ 3.267 trillion) [10]. This is more than 300 times the allocation of Russia to education. China's government spending on the development of science and technology in 2018 increased by 14.5%, reaching 832.2 billion yuan (7.831 trillion rubles at the Central Bank of the Russian Federation as of 2.08.2019). This amount is 20 times higher than the allocation of Russia to science.

The consolidated budget of the Russian Federation for the entire education system of the country (including schools and universities), only 60.7 billion US dollars [11]. With such wretched funding, the state does not have the right to demand from Russian universities high world rankings occupied by universities in the USA and Great Britain, Japan and China. Is it any wonder that China has made tremendous successes in the fields of education, science and technology lately. This power ranks second in the world in terms of nominal GDP, in contrast to Russia, which is still in the second figure of the countries in this indicator.

The new paradigm of education in Russia should be aimed at the formation of human capital that meets modern requirements, as well as improving the quality of the intellectual elite, which will become the core of the educational potential of society, the basis of the knowledge economy.

In Russia, in contrast to the developed countries of the world, the trend of steady growth in the quantitative volumes of training specialists with higher education did not become a decisive factor in the innovative development of the national economy.

### III. PURPOSE AND QUESTIONS OF RESEARCH

The purpose of this study is to study the problems that Russia must solve in order for its education and science to become the basis of the knowledge economy and contribute to improving the quality of human capital. Based on this goal, the authors tried to justify the new priorities of state policy in the field of education and science.

In this regard, this study raises the following main questions.

1. To determine the role and place of the education system in the formation of human capital and the development of the knowledge economy.
2. To analyze the reasons for its low competitiveness of domestic education and science in comparison with the leading countries of the world.
3. Investigate the effectiveness of public administration of education and science in Russia and show the ways for its further improvement.

### IV. RESEARCH METHODS

In the study of the main issues of the topic, the authors used the following methods:

- 1) an institutional method that allows you to analyze the role of the president, government and other authorities in the implementation of education and science policies;
- 2) the method of comparative analysis was used by the authors to compare the financing of Russian educational and scientific institutions with educational institutions and scientific institutions of other countries, mainly the USA and China;
- 3) the authors also applied a systematic method that allows forming a holistic view of the state of the Russian education system and its current problems.

### V. CONCLUSION

The study allows the authors to draw the following conclusions.

1. The education system requires further improvement, increasing the efficiency of public administration in this area in order to increase the contribution of schools, colleges, universities to improving the quality of human capital, accelerating the country's transition from raw material to an innovative development path.
2. To increase the status of Russia to a world scientific power, more significant financial injections are needed. At present, in this indicator, our country is ten times behind China. However, the state prefers to keep more than 10 trillion rubles in reserve funds, allocating insignificant interest on the needs of science, keeping scientists and research institutes on a fast-food ration.
3. The education system, due to insufficiently effective public administration, poor financing, and a poor material and technical base, does not fully meet new challenges and is not yet sufficiently competitive in the global education markets. This is evidenced not only by almost all known world rankings but also by the number of foreign students studying at Russian universities and institutes.
4. Today, the role of scientists is downplayed; the social status of academics and professors, not to mention young scientists, is much lower than the status of the new nomenclature, Russian officials. This is eloquently indicated by their mansions on Rublevka and the meager salaries of researchers. As a result of such a policy with respect to scientists, today in leading research institutes, design bureaus, and universities there is a lack of scientific personnel and qualified specialists.

The outflow of young scientists abroad has already led to the fact that Russian science is very "aged". The average age of a candidate of science today exceeds 50, and a doctor of science - 60 years. Under the existing system of payment in research institutes and universities, young people are not drawn to Russian science and are not eager to teach in Russian higher education institutions.

Nevertheless, the authors are confident that the higher education system in Russia has great potential and a successful future. It is only necessary to work better in this direction and consolidate: from a simple teacher to the head of state.

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