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UNIVERSITY EDUCATION IN THE DEVELOPMENT OF THE DIGITAL ECONOMY IN RUSSIA

Sergey N. Pogodin (a)*, Natalia A. Vasilyeva (b)
*Corresponding author

(a) Peter the Great St. Petersburg Polytechnic University (SPbPU), Polytechnicheskaya 29, Saint Petersburg, 195251 Russia, pogodin56@mail.ru
(b) St. Petersburg State University, Saint-Petersburg, Russia, n52basil@gmail.com

Abstract

In the first quarter of the 21st century, there is an active development of knowledge societies which requires the scientific community to elaborate new conceptual positions. It is necessary to create a theoretical platform, and to form on its basis the political strategy of the state, for entering a new socio-economic condition, where the main focus should be on the digitization of the economy and the social sphere. During the fourth scientific and technological revolution, a new understanding and assessment of the human component in the capitalization of society arises. The basis for a new type of society should be the intellectual elite, which requires government programs to support universities, where the foundations of the "intellectual capital" of the state are laid. Universities, as "factories of knowledge", have a key role in providing an innovative breakthrough of the Russian economy, combining their creative potential with the practice of its implementation by business structures.

Keywords: Creative class, digital economy, innovative teaching methods, university.

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1. Introduction

It is important to emphasize, that in recent years, technologically advanced countries have created socio-economic conditions for the development of a "knowledge society" where all spheres of societal life should be determined by digital technologies. As noted in the "Strategy for the Development of the Information Society in the Russian Federation for 2017 – 2030", "the knowledge society is a society in which the right to obtain, preserve, produce and provide reliable information, taking into account the strategic national priorities of the Russian Federation, are of paramount importance for the development of every citizen, economy and the state " (Decree of the President of the Russian Federation, 2017). In these conditions, one of the chief aims in the system of university education is developing and educating a new student body which, in its future practical activities in the Russian economy, will be able to ensure successful adaptation of the achievements of the digital revolution. From a new perspective is viewed the specificity of research universities where innovativeness and creativity come to the fore being their fundamental characteristics. Thus, the relevance of the chosen topic is determined by the paramount importance of the sphere of education in the breakthrough strategy of digital restructuring of the social and economic spheres of the Russian state. In this regard, there is a need to develop new educational competencies for students; the criteria for evaluation of their learning and personal qualities:

- focus on professional and social activity of students;
- training the skills of interaction with developing systems of artificial intelligence;
- development of creative abilities in students as the basis for establishing the
- "intellectual capital";
- "intellectual capital" as the final product of the system of university education;
- the foundation for students' future career should be the knowledge and skills obtained at university, which young professionals will use as the basis to generate new ideas.

In fact, for modern universities, one of the most important challenges is precisely the challenge of building teaching and learning process in such a way as to equip future graduates with appropriate skills for effective practical professional activities. In particular, the Western experts point out that modern colleges and universities need new ways of attracting students through innovative programs that help students prepare for the modern digital job market. It is important to bridge the gap between universities and employers in the issue of skills that graduates should possess. Such characteristics as critical thinking, adaptability and cultural competence come to the forefront. The authors of the article see the main point in the following: on the one hand, teachers should effectively create the knowledge base of students, and on the other hand, they should teach future professionals to adapt their knowledge to the needs of their future employers (Zartner et al., 2017).

2. Problem Statement

If in a society based on machine production, the focus was on technology (steam engine, internal combustion engine, etc.), then in a society based on digital technology, success depends on human intelligence, which implies reliance on knowledge, as a source of society's wealth.

The process of Russia's entry into the global digital space has a specific dimension:

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- the political dimension presupposes creation of a new management system, i.e. electronic government, which narrows the possibilities for bureaucratic and corrupt use of power functions, and ensures the possibility of direct democratic participation of citizens in governance;
- the economic dimension is determined by the need to create prerequisites for the development of the Russian economy of knowledge, which means the creation of appropriate centers for innovative development (science and technology park movement);
- the human dimension requires the development of such qualities of a person, as professionalism, learning, creativity, intellectual abilities;
- the educational dimension is related to the formation of a new type of students characterized by intellectual mobility and social responsibility of scientists, and this is reflected in the increasing status of universities in the country's economy.

At the end of the second decade of the 21st century, in the Russian Federation there is an objective need to develop an integrated approach to university education as an important motivation to practical implementation of innovative strategies. The results of sociological surveys, which are periodically conducted in the regions of Russia, indicate that not all Russians are ready to actively enter the knowledge economy, as evidenced by the lack of relevant skills (learning the experience of other entities; team working; information analyzing, etc.).

In other words, in the context of the state and society informatization, people, capable of accumulating and reproducing information in the form of a new knowledge, should be mainstreamed, which requires from the state an increased budgetary allocation for education, and equipping universities with modern technology facilities.

3. Research Questions

The issue of creating "intellectual capital" in universities is reflected in the studies and theoretical developments of domestic and foreign scientists. Russian scientists write a lot about the problem of modernization of the Russian education system as the basis for the country's successful advance along the path of the digital revolution (Korchagin, 2011; Meshkova, 2010). Of particular note are the works of Russian researchers Kapelyushnikov and Gimpelson, in which the Russian vision and the specific nature of the theory of "human capital" are most fully revealed (Kapelyushnikov & Gimpelson, 2011). The works of these researchers give the most comprehensive picture not only with respect to the theoretical foundations of the formation and development of the concept of human capital, but also contain a wealth of practical material on the subject matter under study. In the context of the knowledge society, research into the sphere of science and education has become an important area in the development of modern ideas about the role of intellectual capital (Semyonov, 2007; Novikov, 2012).

It is noteworthy to highlight the research of the Western scholars on the role of universities in the economy of the regions (Zartner et al., 2017), as well as on the specifics of students training for practical activities in the digital economy (Valero & Van Reenen, 2016).

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4. Purpose of the Study

Considering the history of technological progress, D. Bell noted that during the industrial period, cities, as economic centres, appeared in the places convenient for production (natural resources) and trade. All ancient big cities are located near water basins, which are the most important ways of communication. In the information age, however, industrial cities are losing their paramount importance. In the context of the information society, economic centres are where high technologies are created, and these are universities and the surrounding areas. For example, "[...] in the USA, it's not Chicago or New York, but Stanford University - Silicon Valley; Harvard University - District Road No. 128 around Boston play the role of economic centres that determine the future of the country " (Bell, 1989). The formation of the knowledge economy in developed countries began at the end of the twentieth century, and therefore it is extremely important for Russia to find ways of efficient and accelerated transition to a post-industrial economy in the first half of the 21st century. A study by the Organization for Economic Cooperation and Development (OECD) on Russia concluded that the production of knowledge in the private sector is hampered by its limited interaction with the public sector. This means that the national innovation system, which is a network of public and private sector institutions where new technologies are developed and distributed, is not working satisfactorily. Most of the research staff of the Russian Academy of Sciences (RAS) and universities does not have strong incentives to seek commercial application of their work results. This lack of connection between the science sector and business leads to the fact that the output of innovative products is relatively low (Cohen & Levinthal, 1990). According to the UNECE experts, research capacity is important not only for new knowledge generation but also as a mechanism for learning and introducing knowledge. Dissemination of knowledge is a basic mechanism to gain economic benefits of investment in research and development (R&D), and of improving the capacity for learning. It should be added that innovation capacity also depends on the innovation management, that is, on the institutions and the rules governing the innovation process (Gianella & Tompson, 2007). Thus, one of the most important characteristics of modern "human capital" is its intellectual dimension, which gave rise to the emergence of the term "intellectual capital". Within the context of the evolution of the information society, it is the intellectual capital that turns into the most important resource for the development of society, where priority is given to the intellectual and creative activities.

In modern social sciences, "intellectual capital" means a set of knowledge of workers, which ensures the competitiveness of an enterprise in the conditions of "knowledge economy". However, the concept of "knowledge" is of many meanings:

- firstly, it is the accumulated information resources of a person, which are formed during his/her studies at university;
- secondly, the application of accumulated information resources in practical activities;
- thirdly, the capabilities and creative abilities of a person, which make it possible to use the acquired knowledge to create an innovative product (know-how).

Recently, the notion of "creative class" has been introduced into scientific circulation (Florida, 2012). In the opinion of the author of this term, Florida, it can be viewed by analogy with the concepts of Marx (classes of bourgeoisie and proletariat as the basis of industrial or capitalist society) to explain the changes in the human capital in the information society. According to Florida (2012), the creative class is

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represented by people who work in the research and technology sector of economy, and in a number of other spheres of activity where it is crucially important to create new ideas and technological solutions that determine promising directions of development (for example, in architecture, design, education, art, entertainment industry, business, finance, etc.). It must be emphasized that R. Florida considers scientists and engineers as an essential link in this, now the largest, class of workers in Western countries. This is of fundamental importance for Russia due to the fact that for the successful development of our country in the information civilization, it is crucial to give priority to scientists and engineers, who in recent years have turned out to be the outsiders in being provided with finance and technological base, which resulted in a dramatic decline in popularity of science and engineering related professions among young people. Hence, in many Russia's technical universities there is practically no student body on essential modern specialties. As the Russian researcher Kapelyushnikov notes, "The system of formal education was poorly prepared for functioning in the market conditions and entered a period of protracted organizational and financial crisis. This had serious consequences in terms of the quality of knowledge and skills that were transmitted through it to new generations of workers. […] The unusual combination of high human resource characteristics with comparatively low per capita income and the mediocre quality of the institutional environment makes it difficult […] to compare Russian indices to global trends (Kapelyushnikov, 2011).

It is natural that national curricula in various countries differ greatly; hence, there is the need for an internationally comparable set of categories to determine the levels of education. This task is being addressed by the International Standard Classification of Education, adopted by UNESCO in 1997 (ISCED 97). Based on the UNESCO classification, experts from the London School of Economics conducted a comparative study of 1,500 universities to find out the importance of universities for the development of economy in a given region. As a result, experts concluded that doubling the number of universities gives an increase in GDP in the region by more than 4%. Moreover, the effect of the university factor has an impact on the near regions (Valero & Van Reenen, 2016).

In this context, special mention should be made of the role of education as a special kind of activity always dealing with the future. The ideas and values that will be established at school and university will have their impact tomorrow and the day after tomorrow, but not today. Hence, it is necessary that the system of global education, both in scope and content, be developed now. The principle of networking, which is popular nowadays, will be needed in this context as never before. We believe that the joint efforts of the United Nations and universities can create an optimal model of such education. The reliance on the educated society, on the quality of intellectual and human capital in the development of a global educational environment is the manifestation of the objective trends of the information revolution.

It is common knowledge that under conditions of the "knowledge society" there is a steady tendency towards the expansion of higher education, which is noted by researchers practically in all countries of the world, and that give rise to a series of political and social problems. Thus, in the developing countries a paradoxical situation emerged, when a rapidly growing demand for higher education came into conflict with the general level of economic development and the inability to adequately employ the educated youth that represent one of the largest groups of the population in these countries. As a result, the unemployed graduates of educational institutions were the initiators of the turbulent political processes of the Arab Spring in the North African region. The problem of inability of economy to accumulate young professionals

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is also characteristic of such a prosperous country as China, where graduates of higher education institutions have incomes that are far from their qualification.

The redundancy of highly qualified professional staff is also a trend in developed countries. In the opinion of Russian researchers, by the middle of the 21st century, Russian society will face a similar problem, when there may start a sharp increase in the underutilization of highly skilled manpower, and the decrease in the economic value of education. This is fraught with erosion of the advantages, which the accumulation of intellectual capital still provides in Russia. As a result, instead of a highly productive knowledge economy, we can get the economy of unclaimed knowledge, or even pseudo-knowledge (Kapelyushnikov & Gimpelson, 2011).

In the Russian expert community there are discussions about the consequences of a steady trend towards the increase in the proportion of people with higher education in the Russian Federation. On the one hand, a critical assessment of this trend recognizes that university education loses its function of "selecting the best" in society because it draws no distinction between more qualified workers and less qualified ones. Moreover, higher education diploma often does not correspond to the standards of the modern knowledge society. This is explained by the fact that the overwhelming majority of young people are oriented toward higher education as an indicator of their social status, rather than professional skills and knowledge. On the other hand, the objective conditions for the development of the digital economy aim the society at the development of the system of university education, without which it is impossible to implement plans for building a "smart economy".

Undoubtedly, the problem in the sphere of education exists and requires a serious study. In Russia, there is a huge demand for higher education, which generates a large number of higher education institutions of varying quality, and the system of secondary specialized education has actually ceased to function. As a result, along with the excessive supply of workers with a higher education degree, in Russia there is a situation when workers with secondary special education are in great deficit. As Academician Novikov notes, the situation of "qualification scissors" is developing: white collars do not go to work at manufacturing plants, and lumpens are not capable of skilled work (Novikov, 2009). At the same time, in the prospects for modernizing Russia, it is expected that demand will continue to increase for the services, which do not require an extremely high human capital. This may lead our country to crisis and the growth of migration flows from neighbouring countries that are ready to cover the shortage of semi-skilled labour.

One has to agree with Gimpelson and Kapelyushnikov that "under conditions of open borders between countries, human capital is unlikely to tolerate the fact that it is not fully in demand and undervalued. This means that human capital will flow to where it will be more in demand." (Russian worker. Education. Profession. Qualification, 2011).

It is important for Russia to learn the lessons of the twentieth century when with the transition from industrial to post-industrial (information) society, the reappraisal of "values" occurred. Natural resources that determined the place of states in the world hierarchy ceased to play a leading role and gave way to information resources. In connection with this, the role of university education and "intellectual capital" has increased, that is why the policy of the leading states of the world now includes such a component as enticement of the most outstanding intellectuals who can make a significant contribution to the knowledge economy. In Russia, since 2015, the program "Global Education for Russians" operates, which helps

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Russian citizens get at public expense master's and post-graduate education at universities of global level. At the same time, it is highlighted that the main condition for participating in the Program is the mandatory return of graduates to their homeland. The program is in demand and has been extended till 2025.

The Russian Federation has recently entered the modernization process, which implies an increase in the role of the citizens in public life and their contribution to the solution of urgent tasks of the modernization policy. In modern political science literature, one of the most debated topics is the question of building citizenship as an integral characteristic of students, university graduates. It is important to emphasize that one of the features of an intellectually developed personality is a sense of self-esteem; therefore, it is necessary to create conditions for social activity of students in universities. Various youth movements have been formed in recent years in our country. For example, the volunteer movement has united thousands of students, which indicates the growth of civil initiatives of young people.

5. Research Methods

The studies in the field of human capital have been methodologically related to economic sciences. The term appeared for the first time in the work of the Nobel Laureate, Schultz (1963), where the emphasis was on the investment in people to enhance their working capacities. Subsequently, the methodology of human study in the digital economy became interdisciplinary, and was put to use in sociology, psychology and pedagogy. It was within the framework of humanities research that the concept of "human capital" was divided into "intellectual capital" and "social capital", which involves studying the socio-cultural context. The process of university education gradually began to include a component associated with a new methodological approach when considering the issues of innovative forms of teaching, where the emphasis is on creating the conditions for building "intellectual capital".

6. Findings

Considering the issue of the role of university education in building the knowledge economy in the Russian Federation, it should be pointed out that, firstly, the "digital" future of the Russian economy depends directly on the effectiveness of the state educational policy. Universities as "factories of knowledge" come to the fore in building "intellectual capital", without which it is impossible to assimilate the results of the fourth scientific and technological revolution. Secondly, university education needs constant self-reforming in order to meet the criteria of a digital age university, such as innovative teaching methods, the development of students' creative abilities, and establishing cooperation with manufacturers. Thirdly, further development of Russian universities will take place in a competitive struggle with global universities for the intellectual resources that our country traditionally is rich in, but their use is still ineffective. Therefore, the multi-faceted development of university education becomes a strategic task of national security in the context of the growing threat of "brain drain".

7. Conclusion

It is known that scientific research is only one of the elements of the integrated policy of innovation, which is accomplished with the market access of a final product, and increased competitiveness and economic growth of the national economy. For instance, the development of university education and

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increase in the number of qualified professionals does not automatically lead to an increased demand for professionals, since the growth in supply should be determined by the growth in demand in the real sector of the economy. Investments in the local knowledge infrastructure will be successful only if there is demand for educational services, as well as for research and development services. All this indicates that building innovation capacity for post-industrial economy requires developing a comprehensive system of production and consumption of knowledge as an important component of the overall economic model of development.

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