

# Polotsk State University in the Educational Space of Polotsk Region

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**Abstract**—The article considers the role of university education in the regional space. It is proved that the regional university is faced with the task of working out a qualitatively new educational policy, as well as the fact that the mutual influence of the university and the region is one of the leading factors of regional development. The university provides an influx of young people into the region from other areas, leading to an increase in the number of young specialists who are actively involved in new areas of the economy.

Polotsk State University is a major educational, scientific and cultural centre of the northern region of the Republic of Belarus. It has a direct impact on the improvement of the quality of life in Polotsk region, providing a wide and diverse range of professional, educational, cultural and leisure services to its population, especially young people, and organizing various types of vocational training and retraining of employees in accordance with the demand of the region for a particular profession and specialty. In addition, the university concentrates the bulk of scientific research of fundamental importance for the sustainable socio-economic and cultural development of the region.

**Keywords:** *university, region, regional development, innovation, interaction, participation, integration, partnership*

## I. INTRODUCTION

Studying the role and contribution of universities to regional development is one of the main trends in foreign and Russian studies in the field of education in the last decade.

Through their activities and implementation of social functions, universities are able to create a favorable environment for the development of local communities, thus providing conditions for the effective development of regions and the country as a whole [1, p.12].

Existing studies of assessing the role of universities in regional development describe many positive examples that have developed over more than 100 years in the international perspective. In international practice, relations of partnership and interaction between higher education institutions and regions are established and developed on the basis of shared mutual interests, mainly of an economic nature. At the same time, universities are considered as key sources of economic development of regions through the contribution to the development of knowledge-intensive industries, human capital, stimulation of new forms of entrepreneurship, tax revenues to the budget of regions, as well as through the contribution to the implementation of cultural initiatives in the regions and attracting interest of a larger audience to them [2, p.61].

The need for interaction between the university and the region is indisputable. At the same time, the issue of combining different missions of the university - teaching, research and interaction with the region - remains debatable. It is equally important for the university to provide quality and relevant services for the region, to use existing knowledge and

create new knowledge. But interaction with the region is often a secondary function of the university, and remains so, if not integrated into the research and teaching activities of the university, its institutional transformation [3, p.174].

## II. LITERATURE REVIEW AND RESEARCH METHODS

### A. Research methods

The main method of research is the analysis, which primarily involves the analysis of literature, as well as the analysis of data on socio-economic development of the region and the target indicators of the university. To get a more complete picture of the state of integration of higher education institutions in the socio-economic development of the region, the results of the analysis of statistics have been supplemented by a qualitative analysis of the processes of interaction between universities and other entities of socio-economic life in the region.

### B. Literary review

A wide range of theoretical and applied studies is devoted to the impact of higher education institutions on the development of the territories in key areas, primarily on the implementation of innovations, as well as building an effective dialogue with other regional participants in the development of methods to assess the contribution of universities to regional development.

Russian researchers identify the following four typical models of regional universities, reflecting the nature of their relations with society, business environment and the state:

- technology leader in the region (TLR);
- comprehensive regional university (CRU);
- leader in the industry (industrial university) (LI);
- university in the transboundary region (UTR) [4, p. 9].

In Western Europe, the division of universities into the following types is popular:

1) an entrepreneurial university model is characterized by economic autonomy, it transfers the knowledge obtained in research to industry and is aimed at stimulating the economic development of the region by creating conditions for the generation and use of knowledge;

2) a university, which is included in the regional innovation system model, plays a fundamental role in knowledge creation as a local network coordinator, bringing together regional industry, innovation and global knowledge for the economic development of the region;

3) a university, acting according to the "mode 2 university model", contributes to the solution of economic and social problems of the region through the involvement in joint research of many organizations and creation of interdisciplinary knowledge, relevant and, what is more important, applicable in the region;

4) an engaged university model adapts to the social needs of the region and orients its scientific potential towards

interaction with local industry and society, actively forming its regional identity [5].

Some countries have adopted their own classifications of higher education institutions to describe the higher education system without any international comparisons. For example, the Carnegie Classification in the United States groups institutions of higher education based on how intensive their research and PhD activities are. This classification classifies the following categories: research universities, multidimensional universities (which have achieved high quality research and doctoral programs in certain fields), colleges of higher education, colleges of lower education, etc [6, p.19].

## III. RESULTS

Polotsk region, being a part of Vitebsk region, is a highly developed industrial region. The core of the industry is oil-refining and chemical production (OJSC "Naftan"), power generation (Lukomlskaya GRES, Novopolotskaya CHP), food and beverage production, textile and clothing production and footwear production. Currently, almost all this entire area is gravitating towards significant urban centres - Polotsk and Novopolotsk.

Polotsk State University is a large educational, scientific and cultural center of Polotsk region.

The priority areas of the activities of Polotsk State University, as one of the regional universities in the Republic of Belarus, are the following:

- improving the competitiveness of the region at the national and international levels, including through participation in the creation of regional clusters in priority sectors of the economy;

By creating and disseminating knowledge, the University contributes to the development of the region through its connection to the socio-economic environment. The University strives to become the nucleus of the innovation ecosystem, it provides local authorities with qualified personnel, interacts with regional enterprises, registers new patents (and licenses inventions) and attracts investments. These directions give the University an entrepreneurial character and constitute the main content of its market initiatives [7, p.52].

Within the framework of the mentioned direction of activity, in 2017 at the initiative of Polotsk State University together with OJSC "Naftan" and the city administration the Novopolotsk petrochemical cluster was created. The cluster strategy is aimed at improving the efficiency of work and activating innovation processes in the region and the Republic. The merger of Polotsk State University and Naftan into an innovation and industrial petrochemical cluster is the first step towards improving the scientific and technical base and human resources potential of the city of Novopolotsk [8].

- formation of a regional system of lifelong advanced training and retraining of personnel in a wide range of areas and sectors of the economy, taking into account the needs of the regional labour market;

The development of regional lifelong learning systems is now becoming a priority of education policy. This is the requirement of modernization: the functionalist principle of "one education for the whole life" is being replaced by the principle of "life long learning", which affirms the value of independent educational activity, individualization of educational trajectories, flexible connection between the education system and the labour market [9, p.293].

At present, Polotsk State University is a complex multilevel structure, which includes 8 faculties (including the Faculty for foreign students), the Institute of Professional Development and Retraining, 24 departments, a scientific library, Scientific Research Department, centres and services in all areas of activity. The very status of a university is one of the most effective incentives to obtain additional professional education in its various programs [10, p.205].

The University trains specialists in a wide range of areas for petrochemical, construction, engineering, IT-industry, transport, geodetic support, electronics, housing and communal services, as well as for law enforcement agencies, educational and cultural institutions, physical culture and sports, tourism and banking industries.

Pre-university training of enrollees is carried out, including training of foreign students.

In order to meet the human resource needs of the real sector of the economy and social institutions, training in new specialties is opened annually at the University. Over the past six years, 17 new specializations have been opened.

Specialists are trained in full-time, part-time and distance learning. Curriculum integrated with secondary professional education are being implemented in 18 specializations.

In accordance with the principle of "lifelong learning", the university provides retraining for staff with higher and specialized secondary education in 25 specializations, and further training for staff in 9 education profiles and 20 areas of education. Polotsk State University participated in the implementation of the ERAZMUS+ programme; the Bell project "Enhancement of Lifelong Learning in Belarus". Within the framework of the project, training courses have been developed to improve the level of knowledge of citizens in various aspects of social life and economy that are currently in demand [11].

- training of a new regional elite - managers of regional and municipal authorities and large enterprises and companies in the region;

The most important function of regional universities is to form new regional elite, to educate a new population of leaders - well-educated, with all the necessary competencies to lead others. It is at the regional level that the education market interacts with the labour market. Higher education institutions, while performing their educational tasks, train highly qualified personnel and have an impact on the social structure of the population, thus increasing the number of people with a higher level of education in the region [12].

The success of Polotsk State University graduates is a vivid evidence of the high quality of training. High professionalism and broad outlook, analytical thinking and ability to work in a team have always been the hallmarks of PSU graduates. Among those who graduated from the University there are major state and public figures, in particular N.I. Kochanova, Head of the Presidential Administration of the Republic of Belarus, V.A. Devyatovskiy, Deputy Chairman of the Standing Committee of the House of Representatives of the National Assembly of the Republic of Belarus on Health Care, Physical Culture, Family and Youth Policy, as well as successful heads of regional enterprises A.M. Niyakovskiy, Filimonov V.N., Larin A.G., Khvalko A.N., Kachanovsky N.A., Yalovik A.P., Grishayev V.A., Petrov L.V., Shamashov A.L., Volkov V.K., Chernevich Yu. [13].

- development of breakthrough interdisciplinary scientific research aimed at changing the positioning of the university and the region as a whole at the national and international level, and their capitalization;

At PSU scientific researches and developments are carried out in accordance with the main scientific directions approved in the Republic of Belarus. The research and development sector includes accredited research and testing laboratories, centres and institutes:

1. Control and testing laboratory which is engaged in diagnostics of technical devices and high risk facilities, sites, locations;
2. Testing and research centre which carries out tests of building structures and products;
3. Laboratory for energy survey of enterprises which carries out energy inspection of fuel and energy resources consumers;
4. Design Institute for Reconstruction and Building which develops pre-design (pre-investment) documentation, as well as sections of design documentation for construction of the first-fourth classes of complexity;
5. Complex researches department which carries out inspection of construction designs of buildings and constructions with delivery of conclusions and recommendations on the further reliable operation;
6. Scientific and Research Pilot Laboratory of technical information security which carries out works and services on technical and cryptographic protection of the information.

In addition, the University represents the secretariat of the State Committee for Standardization of the Republic of Belarus "Major pipeline transport of oil, gas and oil products" TC BY 17, which is a working body for the development of state standards of the Republic of Belarus in the field of pipeline transport.

**TABLE I. SCIENTIFIC AND TECHNICAL DEVELOPMENT OF THE UNIVERSITY TYPE STYLES [14]**

<b>Area of application</b>	<b>Scientific and technical development</b>
In the area of IT-technologies	Intelligent software system of video information analysis Software package "System for servicing residential communities" The system of mobile and internet banking
In the area of machine building	Multifunctional technological equipment for mechanical processing of parts Boring tool with micrometric blade adjustment Energy efficient sources of charged particle beams on the base of plasma emitters
In the area of Civil Engineering and Architecture	Eco-friendly, resource-saving thermal insulation and wall materials based on the following vegetable raw materials: flax, rice, straw, bamboo, palm Arbel - walling based on wood waste Complex of programs for construction calculations for designing and examination of constructions Complex of programs of statistical modeling of constructions Program complex "Calculation of of earth slopes resistance"
Technical information security	Software and hardware measuring complex "Filin-A" Acoustic system measuring active. Masking noise generator
Oil- Refining and wood chemistry	Method of extracting botulin from the birch bark Hydrocracked oil Technology of obtaining high quality oil bitumen Low-molecular-weight polyethylene greases
Providing reliability and safety of gas pipeline transport of oil and gas operation	Software package "Calculation of gas reserves in the gas transmission system" Technical regulation in the field of industrial safety of pipeline transport
Geoecology and energy	Diagnostic of current crust movements Assessment of the environment on the basis of a complex monitoring of the coniferous increase Power efficient and ecological radiator

- increasing the level of innovation activity in the region and creating an innovative environment, including the introduction of innovations in the educational process;

Being included in the innovation development, universities are focused on meeting regional needs, participate in the creation of conditions for development and innovation in the region, strengthen the areas of interaction for mutually beneficial use of the results of scientific research and transfer of new knowledge.

Polotsk State University performs the functions of the parent organization of the regional science and technology programme "Innovative Development of Vitebsk Region" in the areas of petrochemistry and oil refining, mechanical engineering, construction and housing and communal services. To commercialize the developments of scientists of the University and solve technical problems of the Polotsk-Novopolotsk industrial region in 2010, the PSU Technopark was created. Its main activities include providing systematic

support to the residents of the park; assistance in the establishment of production facilities with new technologies and creation of high-tech industries that produce finished high-tech products for sale on the market; software development; development of business plans.

PSU Technopark has highly qualified scientists, engineers and workers, as well as high-tech modern metal-cutting machines, technological and computer equipment, licensed software product Beta +5. During the implementation of state programs pilot and experimental plots for the production of high-tech products were created. They are of:

- multifunctional technological equipment;
- reinforced working inserts of stamps;
- submersible pumps;
- cooling units;
- furnace equipment;
- software product "Raduga-Beta".

Since 2003, Polotsk State University has had a regional branch of the Republican Centre for Technology Transfer (RCTT). The main purpose of the center is: to support innovation activities and technology transfer in Polotsk-Novopolotsk region; to promote the development of innovative entrepreneurship and the expansion of international partnerships in the field of innovation and high technology; to assist in the implementation of public policy in the field of small and medium-sized businesses; search for potential investors [15].

Services for the development of business plans, assessment of investment projects, support for business lending, financial modeling and comprehensive analysis of financial and economic activities for the region's enterprises is offered by the Analytical Center "Scientific and Technological Park of Polotsk State University". Scientific researches were carried out on business planning for OJSC "Naftan", Production Unitary Enterprise "Polotsk Drinks and concentrates", RUE "Novopolotsk reinforced concrete", RUE "Vitebskhlébprom" "Polotsk bakery" and OJSC "Polotsk meat processing plant" [16].

- promotion of advanced socio-cultural initiatives for the development of the region's territory through social partnership and concentration of drivers of positive changes in the social sphere, economy and culture at the university.

According to some researchers, one of the social functions of the university is social responsibility in a broad aspect, which implies the activities of the university: focused on the needs of society as whole and individual citizens in particular, primarily residing in the region [17, p. 204-205].

Understanding and taking into account the public needs in education of citizens, training of specialists for specific regional industries, conducting specific research to solve the problems of the region, on the basis of multilateral interaction

with various stakeholders is called "social participation" of universities, or "civil participation" [18, p. 134].

Social responsibility is an integral component of the activities of Polotsk State University. Here is a list of recent socially significant initiatives.

Since 2018, on the basis of PSU the Regional Training and Research Legal Center began to operate, the main purpose of which is to improve the legal culture and provide legal advice to the population [19].

For modern society, it is important to form "a new type of entrepreneurs, the subject of interest of which is to derive profit from intellectual activity, and not only their own. They should be able to establish the relationship between knowledge production and business and organize the process of turning knowledge into a profitable resource" [20].

Since December 2018, on the initiative of the Council of Young Scientists of Polotsk State University, in partnership with the public association "Society for Assistance to Innovative Business" (OSIB), the project "Startup School of PSU" is being implemented. The main task of the project is to form the skills of business design and help to bring the business idea to the level of implementation [21].

In December 2019, a joint project of the Polotsk State University and the Belarusian Republican Gerontological Public Association "School of Inclusive Social Volunteering" was launched. This is a voluntary association of students and university employees who expressed a desire to work without making a profit in various areas of volunteer activity [22].

The main goal of the project is to organize special training of volunteers to work with people of different social categories (children with disabilities, children in difficult life situations, the elderly and seniors)

Thus, Polotsk State University provides young people with the opportunity to carry out socially significant activities, which meets the goals of the state. "Helping children and young people to become responsible and productive citizens of their country is a pressing problem for many countries around the world. To this end, countries mobilize volunteer movements that help young people contribute to public life and cultivate socially useful values" [23].

#### IV. THE CONCLUSION

Thus, one of the dominant trends in the development of higher education worldwide is the predominant orientation of universities towards meeting the needs of the region in which they operate. In the regions, universities form the intellectual elite of the regional community and have a strong influence on the structure of the regional labour market. They cease to be simply educational or scientific organization and become gradually full participants of regional development, the system factor of regional growth [24, p. 187].

The authors conducted a qualitative study of the experience of interaction between the University and its regional environment. For the first time, a comprehensive analysis of the activities of Polotsk State University was made,

its role as a large university (systematic institution) in the regional educational field of Polotsk region was revealed; its influence on the social life of the region was shown. The research allowed assessing the level of integration of the university into the regional development and revealed the main directions of interaction between the university and the social environment.

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