



Economics

“Vesnik Hrodzenskaha Dziarzhavnaha Universiteta Imia Ianki Kupaly.

Seryia 5. Ekanomika. Satsyialohiia. Biialohiia”

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Modern trends in the development of economic education in Yanka Kupala State University of Grodno

[*Sovremennye tendentsii razvitiia ekonomicheskogo obrazovaniia
v Grodnenskom gosudarstvennom universitete imeni Ianki Kupaly*]

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Abstract. A dynamic change in socio-economic conditions requires new approaches to the formation of professional competencies today. The process of training specialists is the most important task that needs to be addressed both at the state level and at the level of enterprises in the real sector of the economy. The role of economic education is growing in various aspects of life. At the moment, in the national scientific school it has not been formalized the notion of economic education yet. There is only an educational profile – economics and management. Therefore, it is determined the aim of the research as the study of the legal regulation of an implementation process of university’s tasks in the development of economic education and the identification of priority fields, which will create an intra-university concept for the economic education development in the future. The necessity of economic knowledge is evident in all spheres: in the educational process, in the scientific activity, within the process of staffing in the university, in the formation and effective use of financial resources. The basis for the training of specialists in the economic profile in modern conditions is the competency-based approach, including, on the one hand, modern teaching methods, and on the other hand, a close connection with the production process. The formation of a practice-oriented education system in the universities is one of the primary tasks at the present stage. The practical-oriented education method is perceived to be the process of mastering an educational program, the primary goal of which is the formation of competencies among students, the provision of educational services demanded by consumers and interested parties. This study can be applied not only in universities that carry out training on the economic profile, but also in non-economic oriented universities.

Keywords: concept, competition, practice-oriented education, modern technologies, competency-based approach, university, economic education.

Bibliography – 1 titles

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UDC 336

**Objectives of the budget policy of the Republic of Belarus
for 2017 and medium-term perspective**

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Abstract. In the article it is given an assessment of the implementation of the budget of the Republic of Belarus for 2016, the reasons for the imbalance of the budget are named. The parameters of the development of the budget for 2017, as well as the main objectives of the budget policy for the current period and the medium-term perspective are analyzed. The mechanism of implementation of the main objectives of the budget policy is considered. In the introduction the role of the state budget and budget policy is identified, the relevance of the article is substantiated, and its purpose is defined. In the main part of the article the objectives of the budget policy of the Republic of Belarus are named, the analysis of the factors influencing the stability of the budget is made, the mechanism and problems of implementing the most important objectives of the budget policy are shown. The novelty of the study consists in the fact that the need for further improvement of the mechanism for implementing the budget policy is substantiated. The main directions of such work are defined: the development of a budget based on real, macroeconomic indicators and taking into account budget risks; development of a methodological basis for transition to performance-oriented budgeting, as well as for the introduction of normative planning and improvement of inter-budget relations in the issue of equalizing the budget security of regions; public debt management. The peculiarity of the research is that it contains a large amount of data characterizing the state of the budget and the current problems of its balance, which formed the evidence base of the article. In the conclusion of the article it is formulated measures aimed at solving the objectives of the state budget policy for 2017 and the medium-term perspective, as well as improving the mechanism for its implementation. The obtained results can be used by the state administration and local self-government bodies in the development of the strategy for implementing the budget policy at the state and regional levels, students and post-graduate students of higher educational institutions in the conduct of scientific research, practitioners of financial bodies of the republic.

Keywords: budget, budget policy, budget revenues, budget expenditures, public debt, budget planning, budgeting, results-oriented budgeting.

Tables – 1. Bibliography – 7 titles

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Chinese investments in the Belarusian economy as a tool for building a new Silk Road

[*Kitaiskie investitsii v ekonomiku Belarusi
kak instrument postroeniia novogo Shelkovogo puti*]

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Abstract. In the introduction the relevance of the article is pointed out. It is determined that foreign investment is one of the most pressing challenges facing the economic block of the Belarusian chain of command. In the main part the brief analysis of investments in the Republic of Belarus is made. Negative tendencies in this area, which in the medium term may cause a number of negative effects in the economy, are described. It is found that as one of the sources of growth of the Belarusian economy may become the country's participation in the “One Belt One Road” project in China (“Silk Road Economic Belt”). It is given the general description of the project in China, as well as some of the results achieved by the participation of Belarus in it. It is found that the proportion of China's foreign investment volume accumulated over the past five years has grown steadily. The structure of investments from China to Belarus in the context of objects of investing is very similar to the structure of the average for the

economy. It is noted the positive differences in the directions of use of foreign investment in the average of the Republic of Belarus and the economy derived from China. It is installed a change of priorities in China's investment in the directions of investments. It is formulated the purpose, principles and features of the participation of the Republic of Belarus in the China's draft "Silk Road Economic Belt". In the conclusion it is formulated findings and proposals to the Belarusian participation in the projects of the "Silk Road Economic Belt". It is identified potential risks, taking into account of which are necessary in building economic cooperation with China. This article is intended for employees of the state apparatus, dealing with investment and economic cooperation with China, researchers, teachers and students of relevant specialties.

Keywords: investment, Silk Road, China, international cooperation, efficiency, analysis, economic growth.

Images – 6. Tables – 1. Bibliography – 8 titles.

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Intellectual property as a factor of innovative development

[*Intellektual'naiia sobstvennost' kak faktor innovatsionnogo razvitiia*]

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Abstract. The purpose of the article is to show the conditionality of innovative development using intellectual property objects at macro- and microlevels. In the introduction it is described the dependence of the level and quality of economic growth on the pace and scale of innovation activity, the degree of involvement in the process of scientific and technological development. In the main part the exogenous and endogenous factors of innovative development are presented, the role of the institute of intellectual property as one of the key factors of successful functioning of the innovation system of macro- and microlevel is defined. The world recognition of intellectual property as the main tool of innovation transformation is confirmed by the inclusion of indicators of the use of intellectual property in the main world indices of innovation development – the European Innovation Scoreboard (since 2010 the Innovative Union Scoreboard – IUS), the OECD Science, Technology and Industry (STI) Scoreboard, Global Innovation Index (GII). The attention is focused on the prevailing role of industrial property objects in the implementation of the innovation process. The possible distribution of the results of intellectual activity on the phases and stages of the innovation cycle, reflecting the evolutionary change of the innovative product, is given. On the example of inventions that play a special role in the innovative development of the economy, it is proposed an interrelated classification of inventions in terms of the degree of novelty, and innovations, created on their basis, on the significance of the transformations and the directions of influence on the production process. The mentioned above classification can be applied to determine the prospects for the practical use of inventions for innovative development. In the conclusion the typical factors of the domestic economy, that restrain its innovative development based on the use of intellectual property objects are described.

Keywords: innovative development, innovations, results of intellectual activity, intellectual property, innovation cycle.

Tables – 3. Bibliography – 13 titles.

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**Formation of a system of innovative and investment incentives
within the framework of the state depreciation policy
at the regional level of the national economy**

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Abstract. The object of research is the depreciation policy at the mesolevel of the national economy of the Republic of Belarus. The aim of investigation is to develop theoretical and conceptual provisions on the creation and use of geographically differentiated depreciation incentives for reproduction of a fixed capital of domestic enterprises and strengthening their investment and innovative activity. The movement of fixed capital and investments in renovation of its in regions of Belarus in the modern period are analyzed in the main part. It is found that the stimulation of innovation and investment activity in the regions by means of instruments of depreciation policy of the state involves the intensification of its impact on the movement of fixed assets in the regions in order to achieve their quality renovation. It is proposed the implementation in the depreciation policy of the state in the regions of Belarus of the mechanism of compensation payments for enterprises, which involves the implementation of the indexation of accumulated depreciation of these enterprises by the state; the formation of investment and innovation centers and the introduction of special investment accounts of enterprises for the accumulation and the use of depreciation on investment and innovative aims. The scientific novelty of the research results is the development of theoretical and methodological bases of regional depreciation policy of the state and substantiation the conceptual provisions regarding the process of forming and implementing innovation oriented depreciation policy, focused on the progressive renewal of the material and technical basis of the country and its regions through the stimulating of innovative and investment activity of domestic business entities. The study results can be applied in the process of developing the depreciation policy of the state at the regional level of the national economy, which is focused on investment and innovation.

Keywords: regional depreciation policy of state, innovative and investment activity, fixed assets, depreciation, fixed capital investments, mechanism of compensation payments, investment and innovative center, investment account.

Images – 1. Tables – 7. Bibliography – 10 titles.

“Vesnik Hrodzenskaha Dziarzhaunaha Universiteta Imia Ianki Kupaly.

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UDC 33:338

Institutional policy and implementation of economic reforms

[*Institutsional'naiia politika i provedenie ekonomicheskikh reform*]

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Abstract. The article is devoted to the development of theoretical foundations and practical recommendations to strengthen the impact of institutional policy on the efficiency of economic reforms. In the introduction of the article the need for new approaches to institutional policy in order to coordinate economic interests of the public relations' participants is proved. In the main part of the article it is provided the literature overview concerning the essence of institutional policy and institutional tools. The author's interpretation of the institutional tools as a system of institutions that solve particular tasks of economic development based on the interconnected use of basic, conjunctural, ideological and monitoring institutions is presented. Basic institutions must ensure the implementation of key institutional reforms; conjunctural institutes are designed to regulate the variability of institutional tools in the immutability of the basic institutions; ideological institutions are aimed to obtain a positive assessment of institutional tool's actions from the society, social macrogroups and individuals; and monitoring institutions control the effectiveness of the functioning of the basic institutions. It is shown that the difficulties in reforming of the Belarusian economy are due to the specifics of the Belarusian institutional system, which is based on the X-institutional matrix, in which the social (state) interests prevail over the interests of individuals. It is given the author's explanation of the reasons why import of the Western type of the institutions based on specific institutional matrix (Y-matrix) in Belarus is ineffective. It is proved that in the course of economic reforms it is expedient to use institutional tools, adapted to the conditions of institutional X-matrix. It is formulated the author's own approach to the harmonization of economic interests, including the level of social macrogroups. The recommendations on the

use of the Chinese experience in reforming of the public sector, including reduction of employment in state-owned industrial enterprises are elaborated. In the conclusion the major findings are given.

Keywords: institutional policy, institutional tool, institutional matrix, reforming, coordination of interests, social macrogroups.

Bibliography – 20 titles.

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Behavioral finance and the efficient market hypothesis

[*Povedencheskie finansy i gipoteza effektivnykh rynkov*]

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Abstract. Rationality of economic agents is the basis of neoclassical economics and finance. However, over the past few decades, such disciplines as behavioral economics, behavioral finance and neuroeconomics have been gaining popularity. The aim of them is finding the phenomena of the irrational behavior of individuals and its explanation. Many studies by psychologists and economists have shown that decision-making by consumers, producers, investors, managers and other agents is subject to significant distortions. The reason is that the behavior of market participants is often not rational, that is, does not correspond to the assumptions underlying the efficiency theory in the face of uncertainty and risks. The object of study is international stock market. The goal of the research paper is to undertake the comparative analysis of efficient market hypothesis and behavioral finance. In the introduction it is compared the efficient market hypothesis with behavioral finance theory. It is defined the main terms such as “random walk”, “efficient market hypothesis”, “behavioral finance” and “cognitive biases”. Moreover, the main types of cognitive biases are presented in the introduction. In the main part of the research the real stock returns are tested for satisfying the random walk to confirm or reject the efficient market hypothesis. The analysis is carried out with the help of the Dickey–Fuller test, correlogram, VR-test and Q-test of logarithmic returns. In the conclusion on the basis of the conducted research the assessment of behavior of stock market indexes in accordance with the efficient market hypothesis is carried out and the main results are drawn. The results can be used by various investors, including Belarusians, in developing the optimal stock investment strategy on international stock markets.

Keywords: stock returns, random walk, efficient market hypothesis, behavioral finance, neuroeconomics, cognitive bias, heuristics.

Images – 1. Tables – 2. Bibliography – 5 titles.

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Prospects of reforming the tax mechanism of state regulation of household incomes in Ukraine in the context of European integration

[*Perspektivy reformirovaniia nalogovogo mekhanizma
gosudarstvennogo regulirovaniia dokhodov naseleniia v Ukraine
v kontekste evrointegratsii*]

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Abstract. In the introduction it is stated the relevance of the topic research, and also it is identified the object of study – the tax mechanism of state regulation of household incomes. The main purpose of the research is to offer effective ways to improve state regulation of household incomes including Ukrainian and European practice. In the main part of the article it is pointed the importance of state regulation of household incomes in the redistribution of incomes in society, implemented through the tax system and the tax mechanism. The attention is paid to the fact that the level of differentiation of incomes of the population and their quality of life depend on efficiency of state redistribution mechanism. The structural-logical scheme of the tax mechanism of state regulation of the household incomes is constructed on the basis of the theoretical-applied bases of the tax mechanism of state regulation of the household incomes. It is established that in the countries of European Union the total tax revenue from the main direct taxes and social contributions form a significant part of GDP income for a year. It is described the practice of using indirect methods implemented to determine the tax liability for legal entities and individual entrepreneurs in the EU. It is proposed the scheme of implementation of the mechanism of using indirect methods of detecting hidden from taxation household incomes on movable and immovable property in Ukraine and it is developed the script checks for employees of the State Fiscal Service of Ukraine. The results can be used to reform the tax revenues of the state regulation in Ukraine.

Keywords: tax mechanism, household income, indirect methods of tax state regulation.

Images – 1. Tables – 2. Bibliography – 5 titles.

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**Assessment of the impact of the import substitution economy
on the development of the Belarusian consumer market**

*[Otsenka vliianiia importozameshchaiushchei ekonomiki
na razvitie belorusskogo potrebitel'skogo rynku]*

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Abstract. The researchers have not come to a consensus on the universal source of long-term advantages, capable to form a stable concept to supply the economy with essential benefits. In modern conditions, with a significant theoretical and practical base, it is necessary to evaluate comprehensively the emerging situation in the consumer market and to make informed decisions about the need and nature of measures to protect the domestic market. It is analyzed the correlation of such economic categories as import substitution, food security, self-sufficiency and determined their impact on the provision of goods to consumers. The necessity of import substitution is proved, as the growth in the import share of consumption poses a direct threat to the national economic security. In addition the levels of import substitution are presented, taking into account the practice of supply chain formation. The aim of the research is to determine the modern trends of the supply-demand proportion in the consumer market and the development of the intermediate scenarios to stimulate domestic commodity producers. The problems of the consumer market of Belarus in terms of integration are emphasized. Taking into account the state of the spheres of production, distribution and consumption, and the power of influence of different factors it is proposed the principles of self-sufficiency and food security. It is determined that the key indicators of import substitution effect are self-sufficiency and the savings of foreign currency. In addition it is indicated the simultaneous achievement of economic, foreign trade and social effects. The parameters of these effects are characterized. The relevance of the import substitution policy is justified. The import substitution policy is described as one of the main components of the national economic strategy aimed at ensuring economic growth and accelerating investment activities and expansion of export. The proposed adjustment mechanism of the tax burden of the commodity producers shall ensure mutual consideration of interests and promotion of the directed activity of a number of subjects in the consumer market.

Keywords: import substitution, import substitution figures, import substitution policy, food security, Belarusian consumer market, adjustment mechanism of tax burden.

Images – 4. Tables – 1. Bibliography – 6 titles.

Evaluation of entrepreneurship in Lithuanian regions

[*Otsenka predprinimatel'stva v regionakh Litvy*]

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Abstract. The purpose of the article is to determine the level of entrepreneurship in the regions of Lithuania. The research shows that the level of the entrepreneurship is determined by such factors: political situation, level of business regulations, level of economic freedom and natural environment. The impact of a favorable business environment on the employment, the financial situation of the country, the quality of life and the creation of conditions for the development of a wider range of social, medical, educational services is also discussed. In the main part of the article it is provided the information about international organizations that annually figure out the ratings of countries in order to assess their competitiveness or the attractiveness of their business environment by specific criteria. The ratings assigned to Lithuania and for neighboring countries are pointed out. The results of the research of the level of business in regions of Lithuania are given and ratings for regions are underlined. The following criteria were chosen for the assessment: employment, the number of small and medium-sized enterprises, the number of residents who registered individual activities or worked on business licenses, the number of companies that applied for financial assistance from the European Union structural funds. The results revealed a significant differentiation between the regions. Some regions are more attractive to entrepreneurs, and they are significantly ahead by the level and development rates (Kaunas, Vilnius, Klaipeda). The most problematic regions are Marijampolė, Utena, Šiauliai. It is determined that support from the European Union structural funds is not directed at substantive regional and investment policies.

Keywords: entrepreneurship, business environment, ranking, business environment assessment, entrepreneurship assessment.

Images – 1. Tables – 5. Bibliography – 23 titles.

**Ensuring consumer loyalty –
the most important competitive advantage
of restaurant business entities**

[*Obespechenie loial'nosti potrebitelei –
vazhneishee konkurentnoe preimushchestvo
sub"ektov restorannogo biznesa*]

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Abstract. In the introduction it is pointed out the subject of the research – the loyalty program as the main source of competitive advantages of a restaurant business in the modern conditions. The specifics and efficiency of the restaurant business of the

Republic of Belarus are presented. It is determined the basic concepts: loyalty programs; customer loyalty. The aim of the research is to identify the ways of the development of the loyalty programs formation for getting additional competitive advantages. In the main part of the article it is investigated the trends that determine the conditions and methods of a competitive fight in the changed economic conditions. It is defined the basic elements of the formation of competitive advantages of business entities irrespective of the type of economic activity. It is emphasized changing values as the basis of the formation of the competitive advantages, and a shift in emphasis in the evaluation of the effectiveness of a competitive fight: the formation of a stable business environment by providing leadership in creating value for the consumer. It is revealed the factors that determine the demand for such marketing tool as loyalty programs in the global community and in the Republic of Belarus. The comparative analysis of the dynamics of the consumer spending structure in Russia and Belarus by consumption purposes is made, the process of the loyalty programs formation is described. It is investigated the essence of each step of the process of the loyalty programs formation, starting from the goal setting and task definition, need for automation of the consumer studying process, justification of the methods of attracting customers, and ending with the definition of the approaches to the calculation of the economic feasibility of the use of loyalty programs and of the use of loyalty programs monitoring technique. It is proposed methods of methodological and methodical support of the process of the programs formation considering the specifics of the behavior of the restaurant business services consumers. The received results can be applied in the development of loyalty programs in restaurant business entities.

Keywords: competitiveness, consumer loyalty, restaurant business, competitive advantages, value.

Табл. – 2. Bibliography – 7 titles.

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Modeling and short-term forecasting of inflation

[Modelirovanie i kratkosrochnoe prognozirovanie infliatsii]

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Abstract. In the introduction it is determined the relevance of the research, which reflects the strong need of formulation and solution of problems of regulation of inflation and the need of operational forecasting of inflation rate. The aim of the research is the analysis of inflation process within the national economy of the Republic of Belarus and the forecasting of the level of inflation in short-term perspective. In the main part of the research it is described the detailed statistical analysis of the inflation in Belarus in 2011–2015. The comparative analysis of dynamics of annual inflation rates in some other countries is made. The main factors that cause the growth of inflation rate are analyzed. Using economic and mathematical methods such as method of time series decomposition and the models of Box–Jenkins (ARIMA) it is received an assessment of short-term forecasting of the inflation rate in the fourth quarter of 2016. The inflation process is presented discretely with the periods of one or three month. This is due to the available statistical data and used methods of analysis. The information base of research is the monthly data from January 2011 to September 2016. As the inflation indicator it is used the calculated cumulative consumer price index. According to calculations, the increase in monthly consumer price index was 0.04 % within the forecast period. These results can be used in the mechanism of inflation targets, which includes the establishment of the inflation benchmark, forecasting of inflation and the implementation of a set of macroeconomic policies to ensure achievement of the inflation target.

Keywords: inflation, inflation forecasting, decomposition method, ARIMA.

Images – 6. Tables – 3. Bibliography – 9 titles.

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Natural capital in the priorities of “green economy”[*Prirodnyi kapital v prioritetakh «zelenoi ekonomiki»*]**A. V. Bondar**¹;
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Abstract. In the article it is revealed the content of the economic categories of “natural capital”. Its position is defined in the system of categories of economics. General and specific in terms “natural resources”, “natural potential”, “natural capital” are clarified. The goal of research is the study of the theoretical foundations of “natural capital” category, trend analysis and the development of practical recommendations for its effective use in the process of becoming a “green economy” in the Republic of Belarus. Scientific novelty of the research lies on the delineation of the natural capital on the potential, taking the form of natural resources in reserve, intended to engage in social production as a factor of production, and evaluated in terms of their ability to generate income, and real natural capital involved in the social production and bringing income. Features of natural capital in the conditions of ecological imperatives are identified. The role of natural capital in ensuring continuity and maintaining the sustainability of the process of social production is justified. Directions of efficient use of natural capital in the system of “green economy” of the Republic of Belarus on the example of agriculture and the sphere of tourist services are highlighted. In the article it is proved the necessity to stimulate organic farming, which contributes to the improvement of water quality and conditions of life of the population, the creation of products with high consumer properties for both the domestic market and for export; formation of international centers of scientific and ecological tourism on the basis of the Belarusian protected natural sites; marketing promotion to the internal and external market products of the sphere of sanatorium and travel services on the basis of deposits of mineral medicinal and table waters.

Keywords: natural capital, natural resources, natural potential, “green economy”, sustainable development, services, post-industrial society.

Images – 1. Bibliography – 16 titles.



Sociology

“Vesnik Hrodzenskaha Dziarzhavnaha Universiteta Imia Ianki Kupaly.

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Altruism as a component of volunteer activity[*Al'truizm kak sostavliaiushchaia volonterskoi deiatel'nosti*]**A. A. Pokhomova***Belarusian State University (Belarus)*

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Abstract. The article is devoted to the analysis of the link between the phenomena of volunteerism and altruism. In the introduction gnoseological need for research associated with the development of the theme of the volunteer movement in the

Republic of Belarus is defined. The object of the research is volunteering as a social phenomenon. The subject of the research is the demonstration of altruism in volunteer activity. In the main part sociological researches of altruism are analyzed. It is revealed that the key representatives of classical sociology, including A. Comte, E. Durkheim, G. Simmel were interested in the altruism phenomenon. For justification of positive influence of altruism on the personality and society the Pitirim Sorokin's theory of creative altruism is examined. The evolutionary theory of altruism as the working theory is chosen. Considering the types of altruism, it is found out that it is necessary to have a "true" altruism as one of the motives of volunteering. The practice of volunteer activity that exist in the Belarusian society and main types of motives of volunteers are analyzed according to the altruism classification. It is found that altruism has a different degree of demonstration and can be nonheritable. The moral education is the most effective for children and youth. It is established that volunteer activity can be the instrument of education of altruism. In this regard family volunteering is perspective and still unclaimed. In the research it is examined family volunteering and its potential for the demonstration of altruism at the level of the individual and society. This article may become an important step in understanding the essence of the volunteer phenomenon and its importance in the development of society due to the small quantity of sociological studies of volunteer activities in the Republic of Belarus.

Keywords: volunteering, volunteer activity, altruism, true altruism, family volunteering.

Bibliography – 11 titles.

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**Representations of the BSU students
on the future development
of the Internet space in the Republic of Belarus**

[*Predstavleniia studentov BGU o budushchem razviti
internet-prostranstva v Respublike Belarus*]

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Abstract. In the introduction the relevance of the research of the Internet space and ideas of it among student youth are specified. The place of the real perspective in research and political field of the Republic of Belarus is defined. It is noted that the Internet introduces a set of new threats of social safety. The aim of the research is identification of ideas of the students of BSU on the future development of the Internet space in the Belarusian state. In the main part representations of the students of BSU concerning development of the Belarusian Internet space are analyzed. For achievement of this purpose several indicators are entered: assessment of achievement of the level of information society by the Republic of Belarus, assessment of a possibility of achievement of the expected results from implementation of the Strategy of development of informatization in the Republic of Belarus for 2016–2022, assessment of different possibility of information threats and definition of potential subjects of regulation of development of the Internet space. On the basis of the obtained data the existing contradiction in ideas of the student youth of the happening processes is revealed. It is specified that the student youth highly appreciates prevalence of those problems and risks which are widely discussed in society and infringe first of all on personal interests. As the main regulators of development of the Internet respondents see the organizations for protection of human rights, the largest social networks and Internet services, the state, official public services, intelligence agencies, security agencies and scientific centers, research institutes. In the conclusion specifics of ideas of the student youth of BSU on the future development of the Internet space are revealed and recommendations about their improvement are made. It is specified that the fragmentariness and incompleteness are characteristics of ideas of students of information society in general and its formation in the Republic of Belarus. The conclusion is drawn that for the best understanding of the changes which are carried out by the state the students have need in bigger informing on the happening processes of informatization and development of information society in our country.

Keywords: Internet, information society, safety, future, students, social representations.

Images – 4. Bibliography – 8 titles.

**Quality management system of educational services
at higher education institutions**

[*Sistema upravleniia kachestvom
v uchrezhdeniakh vysshego obrazovaniia*]

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Abstract. The article deals with the issues of education quality management at higher education institutions in the Republic of Belarus. This problem field has cross-disciplinary and integrated nature therefore the work is based on systematization of experience gained in various branches of academic knowledge such as sociology, management, pedagogy and philosophy. The aim of the research is to consider the education management system in the context of higher education institutions of the Republic of Belarus. In the introduction it is actualized the role of education quality at high school. In the main part it is determined the system levels of education quality assessment (macro- and microlevel, internal and external), it is considered the functioning of the quality management system in Belarus. The article has been supplemented by the data of the international educational statistics and current results of international rankings of universities (Webometrics Ranking of World Universities, UniRank, QS World University Rankings, Times Higher Education, Scimago Institutions Rankings), which involve higher education institutions of the Republic of Belarus. In the conclusion the role of monitoring the quality of educational services and importance of the system for assessment of customer satisfaction by educational services are analyzed. In the article it is summarized the idea that the basis of a productive quality management system at higher education institutions can be self-assessment (based on customer monitoring and quality assessment of educational services by separate categories of customers), combined with the assessment of competitive advantages of higher education institutions (benchmarking, analysis of international rankings). The scientific novelty of the research is to present an integral system of micro- and macroanalysis of education quality and analysis of data on external environment and self-assessment for management decision-making. The presented materials can be used by higher education institutions in the system of education quality assessment.

Keywords: quality management, education quality, quality evaluation, higher education institutions, quality management system.

Bibliography – 16 titles.



Biology

**Evaluation of the ability of street dendroflora
to influence the noise level
(on the example of Khmelnytskyi)**

[*Otsenka sposobnosti ulichnoi dendroflory vliiat' na uroven' shuma:
na primere g. Khmel'nitskogo*]

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Abstract. In the introduction the need to search for effective ecotechnological methods for reducing noise pollution in urban agglomerations is actualized. It is emphasized that noise pollution has a detrimental effect on the fauna and flora of a city. In the main part an assessment of the ability of street dendroflora to influence the level of noise pollution produced by means of urban transport is considered. It is established that higher noise levels are noted on the main transport highways of the city in its central part. This circumstance is explained by dense residential development and a small amount of street dendroflora, intensive traffic (prevalence on the roads outdated brands and modifications of electric vehicles, fixed-route taxis and buses, which increase the level of noise pollution). It is noted a slight distinction between different species of woody plants to absorb and scatter noise. It is pointed out that the use of a certain type of trees in street plantings is not essential to reduce noise. The mixed planting of trees has shown some efficiency. In the mixed type of tree planting the level of noise absorption is higher than in the plantings of one species. The most effective way in reducing the noise level is a two-row and three-row type of planting and a group planting structure. Mixed two-row and three-row group plantings, which consist of trees with different heights and crown shape, and group tree and shrub species have a greater absorbing capacity than those in which only one tier is present. The level of noise pollution in such plantings at a distance of 30–40 m from the source of noise practically reaches sanitary standards. Foliar cover, the shape and density of the plant crown, the presence of tiers of their planting and the phytosanitary state play an important role in the absorption and dispersion of noise. In the conclusion it is indicated the main findings on the topic of the research. The results of the research can be used not only in environmental work, but also will be effective in planning architectural and construction activities, in creating a unique image of the modern city.

Keywords: noise pollution, noise level, type of planting, planting structure, transport, plants, street dendroflora.

Images – 1. Tables – 4. Bibliography – 10 titles.

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**The content of heavy metal ions and the enzymatic activity of soils
of coastal and terrestrial ecosystems of the Vitebsk region under various anthropogenic loads**

*[Soderzhanie ionov tiazhelykh metallov i fermentativnaia aktivnost' urbanozemov
Vitebskoi oblasti pri razlichnoi antropogennoi nagruzke]*

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Abstract. In the introduction it is analyzed the feasibility of determining the concentration of mobile forms of heavy metals and enzymatic activity for the analysis of soils subjected to anthropogenic loads. The object of the study is soil from various settlements of the Vitebsk region. The soils were selected in six districts of the Vitebsk region: Miory, Polotsk, Ushachi, Senno, Orsha and Vitebsk, in each of the areas soils were selected in three zones: the park zone, near the reservoir and the central part of the settlement. The basic concepts are defined: enzymatic activity of soils, heavy metals, anthropogenic load. The purpose of the study is to assess the impact of different anthropogenic loads on the soils of the Vitebsk region on the indices of heavy metal ions and the activity of soil enzymes. In the main part it is described the methods of sampling and the location of sampling of soil, the types of selected soils are determined, methods for experimental studies of the content of heavy metal ions and enzymatic activity of soils are described. As a result of the study it is revealed the range of heavy metals content, the smallest and the largest enzymatic activity in the analyzed soil samples. The analysis of the ecological condition of the area is carried out, taking into account the location of industrial enterprises and highways to identify the causes of various activities of soil enzymes and the accumulation of heavy metals in the soil. The increased copper content in Vitebsk in all three zones corresponds to the increased activity of urease (a high concentration of heavy metals in the soil stimulates urease activity). The high iron content in the center of Novopolotsk corresponds to a weak catalase activity. The high content of zinc ions in the soil of the park zone of Orsha corresponds to a weak catalase activity in this zone. The results of the study can be used in biomonitoring and bio-diagnostics of

soil condition in urbanized areas, in assessing anthropogenic impact on the environment, land-use planning, and in other environmental and production activities.

Keywords: heavy metals, soil enzymes, enzymatic activity of soils, anthropogenic load, soil.

Tables – 8. Bibliography – 9 titles.

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