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DEVELOPMENT OF THE THEORY OF MATHEMATICAL MODELING AND ITS APPLICATION IN EDUCATION AND INDUSTRY

LOCAL PRODUCTS OF FORMATIONS

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Among the products of groups' classes of the most famous are products of formations and products of Fitting classes. Note that if $\mathfrak{F}$ and $\mathfrak{H}$ is are formations, then their product is called the class $\mathfrak{F}\mathfrak{H}$ of groups all those G, such that $\mathfrak{H}$-coradikal of G belongs, i.e. $\mathfrak{F}\mathfrak{H}$=($G: G^{\mathfrak{H}} \in \mathfrak{F}$). Thus $G^{\mathfrak{H}}$ is $\mathfrak{H}$-coradical of a group, i.e. the intersection of all normal subgroups of G, factorgroups belong to $\mathfrak{H}$. It is known that the product of two local formations is a local formation, it was found proved by L.A.Shemetkov [1]. Note that the proof of this result is based on the concept and properties of the generalized central series. Therefore there is the problem of finding an alternative proof of Shemetkov theorem by the use of the formula of local formation.

Work purpose is to find an alternative proof of Shemetkov theorem that the product of two local formations is a local formation.

Preliminaries. A class of groups is a collection $\mathfrak{X}$ of groups with the property that if $G \in \mathfrak{X}$ and if $\cong G$, then $H \in \mathfrak{X}$[2].

Class $\mathfrak{X}$ is closed concerning factorgroups, when the following statement is true:

if $G \in \mathfrak{X}$ and $N \lhd G$, then $G/N \in \mathfrak{X}$.

Class $\mathfrak{X}$ is closed concerning subdirect products, when the following statement is true:

if $G/N_1 \in \mathfrak{X}$ and $G/N_2 \in \mathfrak{X}$, then $G/N_1 \cap N_2 \in \mathfrak{X}$.

Formation is called the class closed concerning factor group and subdirect products.

It is known that the product of any two formations is also a formation [3].

Let $\pi \subseteq P$ and $\pi' = P \backslash \pi$. If $\pi = \{p\}$, then $\pi' = \{p\}'$ we denote p'.

Formation $\mathfrak{F}$ is called local if there is a mapping f of P set of all prime numbers in a set of formations such that:

$$\mathfrak{F} = \mathfrak{E}_{\pi} \cap (\cap_{p \in \pi} \mathfrak{E}_{p'} \mathfrak{N}_p f(p)),$$

where π is the set of all prime p, such that *f(p)* – is a nonempty formation. In this case $\mathfrak{E}_{\pi}$ is the formation of all π-groups, $\mathfrak{N}_p$ is the formation of all p-groups, and $\mathfrak{E}_{p'}$ is the formation of all p'- groups.

Findings and their discussion. The main result of the work is the following

THEOREM. The product of two local formations is a local formation.

The proof is based on the following lemmas:

LEMMA 1. The intersection of any nonempty set of local formations is a local formation.

LEMMA 2. If π is a set of prime numbers and $\mathfrak{F}$ is nonempty formation, that $\mathfrak{N}_p \mathfrak{F} = \mathfrak{F}$ for all primes $p \in \pi'$, then the product of $\mathfrak{E}_{\pi}\mathfrak{F}$ formations is a local formation.

We will also use Corollary 3-4 for proof of the theorem.

COROLLARY 3. If $\mathfrak{F}$ is nonempty formation and π is a set of primes and $\mathfrak{E}_{\pi'}\mathfrak{F} = \mathfrak{F}$ then product of $\mathfrak{E}_{\pi}\mathfrak{F}$ formations is a local formation.

COROLLARY 4. If $\mathfrak{F}$ is nonempty formation and π is a set of prime numbers, then each product of $\mathfrak{E}_{\pi'}\mathfrak{G}_{\pi}\mathfrak{F}$ formations is a local formation.

LEMMA 5. Each product of formations $\mathfrak{F} = \mathfrak{E}_{\pi_1}\mathfrak{E}_{\pi_2}$ for set of prime numbers π_1 and π_2 is a local formation.

Conclusion. Thus, we have developed a new method for studying formations through the use of the multiplication operations intersection of formation's products. This method can be used in the future to describe the structure of the formations.

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BY MATHEMATICAL MODELING OF STRUCTURES OF THE PHYSICAL FITNESS OF STUDENTS AND CURRENT STATUS DIAGNOSTICS

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At the present stage of development of electronics and computer technology is a necessity implementation in practice of physical education of high school, including a diagnosis of the current state of physical fitness of students of modern methods of applied mathematics, including mathematical modeling.

On the basis of the factor model structure of physical fitness of students, youths build its mathematical model that in the diagnosis of the current state of physical fitness of students will become the standard model.

Material and methods. In solving the problem used modern methods of applied mathematics, including: mathematical modeling, mathematical theory test, theory N.A. Bernsteina on the regulation of cybernetic systems, whose main elements are: modeling, comparisons correction.

Results and discussion. Exploring the n-dimensional space motility test using the methods of multivariate statistics and R-factor analysis [2], we were able to get to the base model of the structure of physical fitness of students, youth, and based on it - on the construction of a mathematical model.

One of the main objectives of the development of such a model is a formal description of the structure and nature of the mapping formation indicators from recording all of mediated interactions between them. It was assumed that the goal will provide a quantitative expression of a number of laws and, based on them, a qualitative shift in the physical fitness of the subjects.

Another goal was to give the model an applied nature, by which it could be applied for the calculation of indicators within a wide range of levels of development of basic motor skills. This focus model means that the principles of performance it should be based on the methodology of calculation adopted in the theory and practice of forecasting and planning.

The basis of a mathematical model of the structure of physical fitness was on the assumption that, for a given population, there is an equally certain optimal combination of the interaction of factors determining the structure of motor skills. Deviation from the best combination appears in the irrational ratio of all components, their imbalances. In other words, one of the hallmarks of physical fitness «average» student can be considered a balanced level of individual components of the structure on the basis of the principle of proportionality. The success of the existence of such systems under the influence of internal and external factors based on those linkages and sustainable qualitative and quantitative correlation (correlation) that were formed in the course of physical training of students meeting the requirements of the time.

Gradually science is the fact that in the analytical work related to management decision-making, is the most effective method of modeling. Besides the theory of physical education has reached a sufficient level of mathematical methods in studies to accept as truth the basic methodological principles of applied mathematics: in the framework of a model based on assumptions that do not cause strong objections from experts obtained mathematically meaningful formal conclusion, the rejection of interpretation of this finding in the study of a real object can only lead to the impoverishment of our beliefs about it, certain aspects of which will be hidden from our perception.

The mathematical description of the structure of physical fitness carried us with two types of laws - statistical and functional. In this regard, the application of mathematical methods in modeling is considered by us to the position of the dialectical unity of qualitative and quantitative analysis in the knowledge of regularities in the formation of motor abilities. The qualitative aspect of the model - a selection of factors, reflects the essence of the formation of its quantitative characteristics. Therefore, to build the block diagram of the mathematical model we walked through the structure factor model of physical fitness.

The studies to identify the structure of physical fitness of students are set:

1. Basic physical qualities and their aspects, define the structure of motor skills.
2. Types of movement (tests) with which measured data quality.
3. Levels of relationships between them (correlations).
4. The regulatory framework of indicators of physical fitness.

All of the above criteria were the basis of a mathematical model of the physical fitness of students. This quantitative model of the system. It characterizes the state of the motor function of boys, expressed as a number. Leading criterion - the level of interactions between different indicators.

In the diagnosis of the current state of physical fitness of such a mathematical model is a model-standard.

The basis of the flowchart of diagnosis of the current state of physical fitness of students was based on the known theory N.A. Bernshteina [1] on the regulation of cybernetic systems, whose main elements are: modeling, comparisons, correction. Thus, the diagnostics is consists in comparisons baseline result of a particular individual, received resulting from testing, a model-standard and determining the differences. When determining use a function, whose arguments are indicators for battery test. The problem is solved by mathematical correction of empirical indicators, taking into account the optimal combination of interaction between them. In this system was used multivariate calculations, where by solving a system of linear equations we find the values of all adjustable parameters. Correction of the individual characteristics of engine tests conducted in accordance with their somatometric signs - height and weight (they themselves are not subject to correction for obvious reasons).

Mathematically, this problem is seen as extreme, formulate it as a search option with the lowest cost that provides the program to achieve a specified level while maintaining structural integrity. Quantitatively express this goal in the form of the objective function can be optimized by minimizing the offset of each of the indicators.

$$\min F = \sum_{i=1}^{n} \Delta \tilde{Y}_i$$

Thus, the solution of the problem lies in finding all $\tilde{Y}_i$, constitute the minimum assignable correction studied parameters to achieve a given level.

Conclusions.

1. On the basis of the factor model structure the physical fitness of students, built a mathematical model-standard for diagnosis of the current state of physical fitness.
2. Diagnosis of the current state of physical fitness of students is conducted through electronic means of communication, allowing you to accurately determine the deviation of the physical fitness of each particular individual relative standard-model.
3. Obtaining a diagnosis-correction, which is a proof assignable effects, helping to build the program management of the training process, taking into account the individual characteristics of each particular motility individual.

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INJECTORS OF π-SOLUBLE GROUPS

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In the theory of classes of finite groups the theorem of Fischer-Gaschütz-Hartley [1] is known that in any finite soluble group, for any Fitting class $\mathfrak{F}$ there are $\mathfrak{F}$-injectors and any two of them are conjugated. This theorem was generalized on a case of Fitting sets and partially soluble groups by L.A. Shemetkov in [2], where established that if $\mathcal{F}$ is a Fitting set of σ-soluble group G, where σ is a set of all simple dividers of orders of all groups from $\mathcal{F}$, then $\mathcal{F}$-injectors exist in G and any two of them are conjugated.

There is a problem about interrelation $\mathcal{F}$-injectors of groups and factor groups for Fitting set $\mathcal{F}$ of finite group G.

Work purpose is to describe $\mathcal{F}$-injectors of factor groups for a case of a π-saturated Fitting set of a finite π-soluble group.

Preliminaries. Note that a Fitting class $\mathfrak{F}$ is called the class of groups closed concerning normal subgroups and products of normal $\mathfrak{F}$-subgroups.

DEFINITION 1 [3]. A nonempty set $\mathcal{F}$ of subgroups of a group G is called a Fitting set of group G if the following conditions are satisfied:

1) if $T \trianglelefteq\trianglelefteq S$ and $S \in \mathcal{F}$, then $T \in \mathcal{F}$;
2) if S, $T \in \mathcal{F}$ and $S, T \trianglelefteq ST$, then $ST \in \mathcal{F}$;
3) if $S \in \mathcal{F}$ and $x \in G$, then $S^x \in \mathcal{F}$

DEFINITION 2 [3]. Let $\mathcal{F}$ be a Fitting set of group G. The subgroup V of group G is called $\mathcal{F}$-maximal if the following conditions are satisfied:

a) $V \in \mathcal{F}$;
b) if $V \leq U \leq G$ and $U \in \mathcal{F}$, then $U = V$.

DEFINITION 3 [3]. The subgroup V of group G is called its $\mathcal{F}$-injector if $V \cap N$ is $\mathcal{F}$-maximal subgroup of group N, for any subnormal subgroup N of G.

Denote π is any nonempty set of prime numbers.

DEFINITION 4 [3]. Let $\mathcal{F}$ be a nonempty Fitting set. The subgroup $G_{\mathcal{F}}$ of group G is called $\mathcal{F}$-radical of group G if it is $\mathcal{F}$–maximal subgroup of group G.

DEFINITION 5. A Fitting set $\mathcal{F}$ is called π-saturated if the following condition is satisfied: $\mathcal{F} \circ \mathfrak{E}\pi' = \mathcal{F}$, where $\mathfrak{E}_{\pi'}$ is a set of all π'-groups and $\mathcal{F} \circ \mathfrak{E}\pi' = \{ \leq G \colon H/H_{\mathcal{F}} \in \mathfrak{E}\pi' \}$.

For each Fitting class $\mathfrak{F}$ there corresponds the set $Tr(G) = \{H \leq G \colon H \in \mathfrak{F} \}$ which is called a trace $\mathfrak{F}$ in group G.

It is known that $Tr(G)$ is a Fitting set [3], however not each Fitting set is a trace of a Fitting class. Therefore, the concept of $\mathcal{F}$-injector for Fitting set generalizes the concept of $\mathfrak{F}$-injector for Fitting class.

Findings and their discussion. The main result of the work is represented by the following

THEOREM 1. Let $\mathcal{F}$ be π-saturated Fitting set of π– soluble group G, where π is nonempty set of prime numbers, and $N \trianglelefteq G$, then:

a) set $\mathcal{F}_{G/N} = \{ SN/N \colon S$ is a $\mathcal{F}$-injector $SN \}$ is a Fitting set of group G/N;

b) if V is a $\mathcal{F}$-injector of group G, then VN/N is $\mathcal{F}_{G/N}$–injector of group G/N.

Conclusion. Thus, unlike the theory of Fitting classes, in the theory of Fitting sets the problem of construction $\mathcal{F}$ - injectors factor groups can be solved that allows to apply new methods at the proof of theorems connected with the description of $\mathcal{F}$-injectors' structure.

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ON THE PROPERTIES OF NORMAL HEREDITARY QUASILOCAL HARTLEY FUNCTIONS

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In the theory of Fitting classes one of the main methods of construction classes is a local method. Research in this direction was made by Hartley [1], D'Arcy [2] and N.T. Vorob'ev [3].

The idea of localization is as follows: let *P* be a set of all prime numbers and *f* be a mapping *P* in a set of Fitting classes. Such a mapping *f* is called the Hartley function or *H*-function.

There is a problem about of generalizing the concepts of Hartley function and local Fitting class generalizing concepts.

Work purpose is to generalize the concept of a Hartley function and study its properties.

Preliminaries.

DEFINITION [4]. A class is a *Fitting class* if and only if the following two conditions are satisfied:

(1) If $G\epsilon\mathfrak{F}$ and $N \trianglelefteq G$, then $N \in \mathfrak{F}$,

(2) If $M, N \trianglelefteq G = MN$ with *M* and *N* in $\mathfrak{F}$, then $G\epsilon\mathfrak{F}$.

Let $LR(f) = \mathcal{E}_\pi \cap \left(\bigcap_{p\in\pi} f(p)\mathfrak{N}_p\mathcal{E}_{p'}\right)$, where $\pi = Supp(f) = \{p \in P{:}\, f(p) \neq \emptyset\}$ is support *H*-function *f*.

If there is a *H*-function *f*, such than $LR(f) = \mathfrak{F}$, then the Fitting class $\mathfrak{F}$ is local [3].

DEFINITION [5]. Mapping of the set *P* of all prime numbers in a set of classes of groups is called *quasilocal H*-function or H_Q-function. Then Fitting class $\mathfrak{F}$ is called quasilocal if there H_Q-function *f* such that $\mathfrak{F} = LR_Q(f)$, where $LR_Q(f) = \mathcal{E}_\pi \cap \left(\bigcap_{p\in\pi} f(p)\mathfrak{N}_p\mathcal{E}_{p'}\right)$ and $\pi = Supp(f) = \{p\epsilon P | f(p) \neq \emptyset\}$.

Every local Fitting class is a quasilocal; converse is false in general.

Such classes $\mathfrak{N}_\pi$(the class of all nilpotent π-groups) and $\mathcal{E}_\pi$ (class of all finite π-groups) –are quasilocal.

Findings and their discussion. The main result of the work is represented by the following

THEOREM. *Let* $\mathfrak{N} = LR_Q(f)$ *for some* H_Q*-function f and* $f(p) = S_n f(p)$ *for all* $p\epsilon P$. *Then the following statement is true:*

$$f(p) \cap \mathfrak{N} \subseteq \mathfrak{N}_p, \textit{ all } p\epsilon P.$$

Conclusion. Thus we have found a generalization of the Hartley function concept and studied the properties of such a function for the class of all nilpotent groups.

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LATTICE JOINS OF π-NORMAL FITTING CLASSES

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All groups are considered are finite and soluble. The notation used in this paper is standard [1].

The main purpose of this work is to study the properties of the lattice joins of Fitting classes in the case of partially soluble groups.

Let $\mathfrak{F}$ and $\mathfrak{H}$ be Fitting classes. The smallest of Fitting classes containing their union $\mathfrak{F} \cup \mathfrak{H}$ is denoted as $\mathfrak{F} \vee \mathfrak{H}$. Such class is called the lattice join of Fitting classes $\mathfrak{F}$ and $\mathfrak{H}$ [2].

Definition. Let π be a non-empty set of primes. A Fitting class $\mathfrak{F}$ is said to be π-normal or normal in a class of all π-groups, if $\mathfrak{F} \subseteq \mathfrak{S}_\pi$ and for each group $G \in \mathfrak{S}_\pi$ it's $\mathfrak{F}$-radical is $\mathfrak{F}$--maximal among the subgroups which lie in G.

If $\pi = P$, where P is a set of all primes, the Fitting class $\mathfrak{F}$ is normal [3].

The results of Cossey [4], Cusack [2], Hauck [5], Lockett [6] and Beidleman [7] were fundamental to the development of algebra of soluble Fitting classes. In particular, in the work [7] was formulated a number of properties of normal products of Fitting classes. Then, the results [7] have been extended by Cusack [2] for the case of lattice joins of Fitting classes. We extend the results [2] and [7] for the case of π-normal Fitting classes.

In this paper, Fitting classes which satisfy one of the following conditions are studied.

Let π be a non-empty set of primes and $\mathfrak{X}$ be a non π-normal Fitting class. $\mathfrak{X}$ is said to satisfy *property* (α_π) if for each Fitting class $\mathfrak{Y}$ such that $\mathfrak{Y} \vee \mathfrak{X}$ is π-normal, then $\mathfrak{Y}$ is a π-normal Fitting class.

Let π be a non-empty set of primes, $\mathfrak{X}$ be a π-normal Fitting class and $\mathfrak{X} \neq \mathfrak{S}_\pi$. $\mathfrak{X}$ is said to satisfy *property* (β_π) if for each Fitting class $\mathfrak{Y}$ such that $\mathfrak{Y} \vee \mathfrak{X} = \mathfrak{S}_\pi$, then $\mathfrak{Y}$ is a π-normal Fitting class.

We have proved the next theorem.

Theorem 1. Let $\mathfrak{X}$ and $\mathfrak{F}$ be Fitting classes. Then

(a) If both $\mathfrak{X}$ and $\mathfrak{F}$ satisfy property (α_π), then the class $\mathfrak{X} \vee \mathfrak{F}$ satisfy property (α_π).

(b) If $\mathfrak{F} \subseteq \mathfrak{X}$ and $\mathfrak{X}$ satisfies property (α_π), then $\mathfrak{F}$ satisfies property (α_π).

(c) Assume that $\mathfrak{F}$ is non π-normal and $\mathfrak{X}$ is a π-normal Fitting class satisfying property (β_π). Then $\mathfrak{F}$ satisfies property (α_π) if and only if $\mathfrak{F} \vee \mathfrak{X}$ satisfies property (β_π).

In the case of product of soluble Fitting classes of finite groups, as a corollary of this theorem, we get the result [7].

Thus, in this work we studied the properties of lattice joins of Fitting classes. We have extended the results of Beidleman [7] and Cusack [2] for the case of π-normal Fitting classes.

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THE DEPENDENCE OF THE DYNAMICS OF BASIC FOOD CONSUMPTION ON THE REAL INCOME OF THE POPULATION IN THE REPUBLIC OF BELARUS

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Incomes of the population of Belarus are growing and the food goods' consumption has reached the level of saturation. The question is how to optimize the structure of consumer expenses.

The study was conducted on the basis of statistics on the dynamics of real money incomes and the level of consumer expenses.

Results and discussion. The real income of the population of the Republic of Belarus is dynamically growing. Therefore it is necessary to predict the dynamics of consumption, to set tendencies and the potential formation of the consumers' necessities and needs for food products in accordance with their possibilities. Between 2005- 2013 the population income grew up to 315.7%. During the same period the food consumption increased but most of the production reached saturation, i.e. the consumption growth stopped, Table 1.

Table 1. Dynamics of real money incomes of the population in relation to the dynamics of consumption of basic food

	2005	2010	2011	2012	2013	
Real income, % to previous year	100,0	156,1	268,4	326,1	376,3	
Basic Food Consumption						
Meat and meat products, %	62	84	88	88	91	
Milk and milk products,%	262	247	294	281	260	
Fish and fish products,%	18,6	15,7	12,6	13,1	14,9	
Potato and potato products,%	183	183	183	186	179	
Vegetables and melons,%	128	149	144	145	146	
Fruit and berries,%	47	65	58	64	69	
Basic Indicators of Tourist Activity						
Number of tourists traveling abroad, thou. pers.	572,4	316,3	414,7	319,8	492,8	708,4
Cost of overseas tours, bln. Bel. rub.	71,8	408,3	541,3	675,5	1828,6	3086,9

Milk and dairy products are important sources of food and especially valuable animal protein. In the period from 2005 to 2013 the consumption of milk and dairy products was stable. So in 2005 milk consumption per person was 262 kg, and in 2013 - 260 kg (rational rate 354.5 kg). The population refuses milk consumption if there is no shortage. Despite the increase from 47 kilograms in 2005 to 69 ones in 2013 the consumption of fruit and berries didn't reach the rational rate of 98.6 kg per capita. In recent years the consumption of certain food has changed in our country. Thus, according to data of 2013, the consumption of vegetables and melons per capita in comparison with 2005 increased by 18 kilograms and made up146 kilograms that corresponded to the rational rate of 143.4 kg.

In the structure of food consumption the share of the most nutritionally valuable food increased. During that period the population began to consume more meat so in 2005 there were 62 kg per person, and in 2013 the demand was 91 kg per person, the excess was more than 29 kg and more than the rational rate and made up 70kg. As for fish consumption the population decreased its demand to 18.6 kg in 2005and to 14, 9 kg in 2013. This can be explained by the high cost of fish imported from Russia and other countries.

The consumption of potato is traditionally high in the country that amounted 179 kilograms per capita in 2013 (rational rate of 129.1 kg). In Belarus because of the tastes and preferences of the population potato belongs to Giffen goods, i.e. it is such a commodity that is on the one hand of "low quality" (in the market sense) and with the growth of population income the demand for it must fall (as it is in Western countries), but in reality it is not.

Conclusion. Thus the main food supply saturates. So the question arises how the structure of consumer expenses is changing.

Our analysis shows that the population of the Republic of Belarus has begun to spend significantly on travelling abroad, Table 1. During 2005-2013 the value of overseas tours increased in 43times (in nominal value). The number of tourists traveling abroad increased by 1.5 times.

The organization of domestic tourism is of significant importance. For this purpose, recreation facilities, transportation, prices for services appropriate to their quality have created. A national program of the development of tourism in Belarus has worked out, including a large subprogram devoted to the development of tourism infrastructure itself.

It is also necessary to cultivate a healthy lifestyle among youth, to develop youth tourism, to enhance the value of educational services in the country and abroad.

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SMART WIRELESS DEVICES AND SYSTEMS

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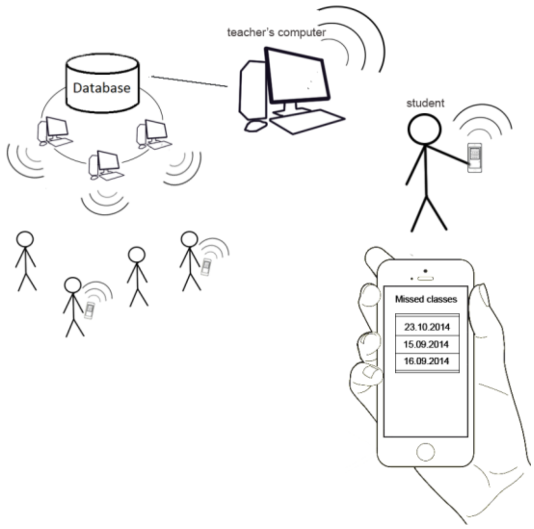
Nearable technology (nearables) is a term used to describe the idea of smart objects – everyday items with small, wireless computing devices attached to them. Those devices can be equipped with a variety of sensors, which are giving them the opportunity to work as transmitters to broadcast digital data, usually using Bluetooth Smart protocol. Thanks to that, those objects are able to provide mobile devices in range with information about their location, state and immediate surroundings [1]. To create a nearable, one must attach an electronic device, working as both sensor and a transmitter to an object. Since the only limitation is the size of the device, both items and living beings can act as nearables. The main goal of our research is to develop the smart mobile device applications.

Material and methods. Nearables are a further development of the *Internet of Things* (IoT). The IoT is a scenario in which objects, animals or people are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. The first idea of IoT can be traced to late 1980s when Weiser introduced the idea of ubiquitous computing [2]. However, this term was coined by Ashtonin in 1999 [3].

IoT has evolved from the convergence of wireless technologies, micro-electromechanical systems (MEMS) and the Internet. A thing, in the IoT, can be any natural or man-made object that can be assigned an IP address and provided with the ability to transfer data over a network. So far, the IoT has been most closely associated with machine-to-machine (M2M) communication in manufacturing and power, oil and gas utilities. Products built with M2M communication capabilities are often referred to as being smart.

In 1990s location-based services started emerging thanks to wide adoption of mobile phones and development of technologies, such as GPS and RFID. This, in turn, lead to first attempts at wireless proximity marketing in 2000s with early version of *Bluetooth*, NFC and *Wi-Fi* standards as predominant technologies. However, it was not until 2013. In August 2014 *Estimote Inc.* launched *Estimote Stickers*: a new generation of small Bluetooth Smart-based beacons. The term 'nearables' was inspired by wearable computers which were gaining increasing popularity throughout 2013 and 2014 thanks to products like *Pebble Smartwatch* and *Google Glass*. Originally, the nearables were described as smart, connected objects that broadcast data about their location, motion and temperature [4]. Nearables are not devices themselves. Any object can become a nearable after a wireless, electronic sensor is attached to it and starts broadcasting data to nearby mobile devices. First examples of nearables was able to communicate with mobile applications installed on devices with *Bluetooth 4.0*, compatible with *Bluetooth Smart* protocol on the software side. At the moment of their launch, it included mainly iOS 7 and high-end Android mobile devices [5].

Results and discussion. We develop the applications for Android mobile devices and windows PS using the Bluetooth Smart protocol for M2M communication.



The students are as nearables. Their mobile devices are as transmitters, which broadcast data to personal computer of teacher about that student came in class. Thus, the teacher will be able to control automatically attendance of the students. At the same time student will be able to quickly obtain information about its missed classes and evaluations, since the device of teacher also is configured to transmit data.

Conclusion. Nearables can be used in a variety of applications, such as access management; tracking of goods, persons and animals; toll collection and contactless payment; machine readable travel documents; smartdust for massively distributed sensor networks; tracking (sports) memorabilia to verify authenticity, timing sporting events; airport baggage tracking logistics, etc. The project results may be used in investigations on the nearable technology.

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ANALYSIS OF THE HUMAN DEVELOPMENT INDEX(HDI) IN BELARUS

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According to the magnitude of the human development index (HDI) the Republic of Belarus (the UN data for 2012, in fact - for 2010, [1]) took the 50th place out of 187 countries and traditionally led all CIS (Union of the Independent States) countries. Thus, the Republic joined 50 countries with the highest HDI.

As it is known, the HDI is summed of the indexes on such indicators as the level of education, average lifespan and GNP (GNI) per capita. Below we will consider the indexes on the abovementioned indicators.

Results and discussion. 1. The level of education

In term of education Belarus is slightly behind the countries with the highest HDI (France, Japan and others) and on the number of students per 10 thousand people (more than 450) the Republic does not lag behind the most developed countries. But the quality of the school and in particular higher education with the expansion of its commercialization, as in other CIS countries, leaves much to be desired. In Belarus until recently universities have received more than 80% of the school graduates not only those having had high entrance marks, but also having paid for their education either in the state or non-state universities. Therefore it has led that students can study at budget cost or for their own account in the same group blurring the sense of entrance exams and decreasing general responsibility.

As a result of having not fulfilled the social order the increase of the number of employees with higher education does not materialize in the growth of GDP (in 2012, for example, it was only 1.5% with "approved forecasts" of 5.5%, according to results of 2013 it was expected lower even than planned 8,5%).

To improve radically the state of affairs in higher education it is necessary to retain only those universities that have either sufficient material and technical base or highly qualified teaching staff and to comply with the requirements of the Bologna process as Belarus is the only country in Europe which remains apart. Training curricula need to emphasize production practices and creative students' self work. Correspondence learning system should be improved if not be abolished. Teaching staff must fluent at least one or two foreign languages, and do research on the exchange program and collaborate with profile universities abroad.

2. GNP (GNI) per capita. The relatively high level of GNP in 2008 was replaced by the failure of almost 20% in 2009. But by the end of 2012 GNP even had surpassed 2008 level. In 2014 GNP per capita of teaching staff is US $ 15 000 (about (70%) lower than planned by 2015.

But with the positive dynamics of average GNP per capita the deep differentiation of wages for various branches of national economy is hidden and not in favor of socially significant ones.

Thus the share of low-wage employees in healthcare and education spheres is almost an order of magnitude higher than in financial and governmental ones and vica versa the proportion of high paid workers in the latter two areas is 3-5 times higher than the share of workers in education and health care. This proportion is stable as the average salary in financial sphere is traditionally twice higher the salary in education and healthcare.

The wage differentiation leads to a differentiation of the population by an income level. Households with children under the legal age (18) particularly have disadvantages. In 2012 8 % of such families have income up to 800 000 Bel. rubles (about US $ 96.) per month and 2.4% families without children. And 15.5% families with children have income up to US $ 300 and higher per month,without children - 35.5% [2].

3. Lifespan. According to world ranking Belarus is among 26 "endangered" countries, where the number of births exceeds the number of deaths. But among these countries there are those in which the lifespan is quite high (Germany, Japan). Belarus in this sense seems very modest, taking about 141 place in the world (the average lifespan is 71 years). This is higher than in Russia, Kazakhstan, Ukraine, but much lower than in 50 - 60 countries according to the HDI value.

In Belarus the dynamics of lifespan has demonstrated its almost zero growth for over 5 years, by 2012 mortality rate had consistently exceeded 14 ppm., that was similar only for Ukraine.

Conclusion. Thus the Republic of Belarus has a number of difficulties connected with the above mentioned of the HDI indicators and needs a long-term solution.

The lifespan Index is the most problematic among three earlier discussed.

The progress in GNP per capita and formally high level of education led our republic to the List of 50 countries in term of the HDI in 2010.

But to solve the main problem it is necessary to improve the quality of mass education and to make efficient the healthcare functioning for an average citizen.

Only few part of population don’t have disadvantages in education and healthcare as is able to use best facilities of this spheres either within a country or abroad.

The idea is to improve the whole system of a social-oriented economy for the majority of population.

Moreover, employers should be required to cultivate healthy life style among their employees and families.

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STABILITY OF DECISIVE RULES IN THE ANALYSIS OF EDUCATIONAL TEXTS

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The educational text represents difficult education which can be investigated by various methods. Most often for this purpose apply classical forms of pedagogical experiments. However there are also other approaches caused by active introduction of information technologies in a field of activity of institutions of higher education. One of them is the automated analysis of texts of educational editions from positions of readability and efficiency of reading. It is developed many software providing the analysis of a training material from positions of complexity and availability. Most often such programs estimate complexity of the text on its statistical structure. The algorithm of reference of the studied objects to this or that group of complexity of the text comes to the end with the formulation of the decisive rules presented in the majority a case by classification functions.

However there is a question, how these decisions are steady against the hindrances caused by specifics of processing of experimental data and the used analysis methods. Relevance of this research is in studying of stability of decisive rules in the analysis of educational texts that is connected with lack of the works opening this problem of the analysis of text material. The purpose of work consists in search of a method of the transformation of data allowing to establish stability of the formulated earlier decisive rules of classification of educational texts on their level of complexity.

Material and methods. Three selections of objects – fragments of educational editions for institutions of higher education acted as the material used for carrying out research. For the description of structure of factorial space of each of objects of research 14 statistical parameters, among which were selected: Average length of words in syllables; Average length of words in letters; Dever's average length of words; Average length of words is 3 syllables and more; Average length of words is 4 syllables and more; Average length of words is 5 syllables and more; Average length of words is 6 syllables and more; Average length of words is 7 syllables and more; Percent of monosyllables; Average length of the offer in words; Average length of the offer in syllables; Percent of numbers from total of words; The indicator Relation "The average length of words is 3 syllables and more" to an indicator "The average length of words is 6 syllables and more"; The indicator Relation "The average length of words is 4 syllables and more" to an indicator "The average length of words is 6 syllables and more".

Complexity of the educational text of the analyzed objects of research is established by results of poll (a method of mark estimates, a technique of additions, a method of pair comparisons (735 respondents)) [1]. The received estimates allowed to create the training selections on the basis of which use the accuracy of classification of objects was determined. As a result of the researches conducted by us it was established that the accuracy of classification of objects with use of the training selection reaches good results in the analysis of data by method of the discriminant analysis (97,03% − for a method of mark estimates (ME), 97,03% − for a technique of additions (TA), 98,02% − for a method of pair comparisons (PC)). At this stage research can be considered complete, however, there is a question, how received results are steady against the hindrances arising during the replacing of objects or change of statistical parameters of the text. It is known that apply a number of the methods changing sensitivity of model to basic data to increase of stability of decisions. The transformations based on use concern to them: logarithmic function; square function; Box-Cox transformation etc. Stability of decisive rules was estimated on value of the coefficient of a variation calculated for each of selections. As a stability measure we accepted variation coefficient. Accuracy of classification of objects is calculated for three methods of poll.

Results and discussion. It is established that the highest indicators of accuracy of division of objects are observed in the analysis of data by method of the discriminant analysis. The smallest values of relative dispersion of a random variable for different selections are observed when using the transformation based on application of logarithmic function. The variation coefficient for a method of mark estimates makes 4,94%, for a technique of additions – 3,88%, for a method of pair comparisons – 2,76% respectively.

Method of transformation	ME, %	TA, %	PC, %
Linear discriminant analysis	6,40	2,28	1,45
Transfer to a serial scale	5,85	6,19	4,16
Average value of an interval	7,49	2,82	3,38
Logarithmic functions	**4,94**	**3,88**	**2,76**
Extraction of a root square	8,45	3,95	5,35
Box-Cox transformation	6,74	5,57	4,26
Use of square function	6,69	1,97	4,59

Conclusion. During implementation of the analysis on search of steady decisive rules when studying educational texts it was established that the transformations based on use of logarithmic function allow to achieve a goal.

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ON INJECTORS FOR FITTING SETS OF FINITE GROUP

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Throughout the paper we consider only finite groups. In the definitions and notation we follow [1].

In the theory of soluble groups known result of Gaschütz, Fischer and Hartley [2]. They showed that there is a unique conjugacy class of $\mathfrak{F}$-injectors in every soluble group G for any Fitting class $\mathfrak{F}$. Recall that a class of groups $\mathfrak{F}$ is called [1, p. 274] a Fitting class if it is closed under normal subgroups and products of normal $\mathfrak{F}$-subgroups. Subgroup V of G is called $\mathfrak{F}$-injector of G if $V \bigcap N$ is an $\mathfrak{F}$-maximal subgroup of N for each subnormal subgroup N of G.

This result was first generalized by L.A. Shemetkov in [3]. He showed that there exists a unique conjugasy class of $\mathcal{F}$-injectors for any Fitting set $\mathcal{F}$ of finite π-soluble group G (π is the set of all prime divisors of orders of the groups of $\mathcal{F}$). A set of subgroups of group G is called *Fitting set of G* [3] if it is closed under normal subgroups, their products and conjugations. Notice that each Fitting class $\mathfrak{F}$ corresponds to the Fitting set $\mathcal{F} = Tr_{\mathfrak{F}}(G) = \{H \leq G : H \in \mathfrak{F}\}$, which is called the trace of the Fitting class $\mathfrak{F}$, although the converse is false in general (see [2, example VIII.2.2(b)]). Moreover, $\mathfrak{F}$-injectors and $\mathcal{F}$-injectors of group G coincide whenever $\mathcal{F} = Tr_{\mathfrak{F}}(G)$. Therefore, the above Gaschütz-Fischer-Hartley theorem [2] is a consequence of Shemetkov theorem [3]. N.T Vorobyov and V.N. Zagurskiy [4] found a formula of an $\mathfrak{F}$-injector of π-soluble group G for the local Fitting class $\mathfrak{F}$, where π is the set of all prime divisors of orders of the groups of $\mathfrak{F}$. However, the formula of injector for the Fitting set of finite partially soluble group is not found until now.

Aim of the research is to find a formula of an injector in Fitting set of π-soluble group (in particular, without any restrictions on the set π).

Results. To prove the main result, we are expanding on Fitting sets the local method proposed by Hartley [5].

Definition 1. Let $f : \mathbb{P} \to \{Fitting\ sets\ of\ G\}$ be a function. We call f a *local Hartley function* or a *H-function of group G*.

Definition 2. Let $\mathcal{F}$ be a Fitting set of group G and $\mathfrak{X}$ be a Fitting class. We define $\mathcal{F} \circ \mathfrak{X} = \{H \leq G : H / H_{\mathcal{F}} \in \mathfrak{X}\}$ and call $\mathcal{F} \circ \mathfrak{X}$ the *product* of $\mathcal{F}$ with $\mathfrak{X}$.

Definition 3. Let $\mathcal{F}$ be a Fitting set of group G. We call $\mathcal{F}$ a *local Fitting set of group G* if $\mathcal{F} = \bigcap_p f(p) \circ \mathfrak{N}_p \mathfrak{E}_{p'}$ for some H-function f of group G. In this case $\mathcal{F}$ is called *locally defined by f*.

Definition 4. Let f be a H-function and let $\mathcal{F} = \bigcap_p f(p) \circ \mathfrak{N}_p \mathfrak{E}_{p'}$ for some Fitting set $\mathcal{F}$. Then f is called: 1) *integrated* if $f(p) \subseteq \mathcal{F}$ for all prime p; 2) *full* if $f(p) \circ \mathfrak{N}_p = f(p)$ for all prime p.

Key role in the proof of the main result takes the following lemma

Lemma 1. *Every local Fitting set of group G is defined by full integrated H-function.*

Definition 5. We say that Fitting set $\mathcal{F}$ of group G is *π-saturated* if it verifies $H \in \mathcal{F}$ whenever $O^{\pi'}(H) \in \mathcal{F}$ and $H \leq G$.

Recall that Σ is called a *Hall System* of π-soluble group G if the following conditions holds: 1) $G_\rho \in \Sigma$ and $G_{\rho \cup \pi'} \in \Sigma$ for every subset ρ of π; 2) if $H, K \in \Sigma$, then $HK = KH$. If R is a subgroup of group G, then $\Sigma \bigcap R = \{S \bigcap R \mid \forall S \in \Sigma\}$. Moreover, if $\Sigma \bigcap R$ is Hall system of R, then we say that Σ *reduce* Hall system Σ_R of R and denote Σ I R. Subgroup $N_G(\Sigma) = \{g \in G \mid H = H^g, \forall H \in \Sigma\}$ is called *normalizer of Hall system* Σ.

Our main result is

Theorem 1. *Let* $\mathfrak{F}$ *be a local* π*-saturated Fitting set of* π*-soluble group G which is locally defined by full integrated H-function f of group G, let* Σ *be a Hall system of G,* $D = N_G(\Sigma)$ *and* $D_p \in \Sigma \bigcap D$. *If F is an* $\mathfrak{F}$*-injector of group* $O^p(G)$ *with* $p \in \pi(G) \bigcap \pi \neq \varnothing$ *and* Σ IF *then subgroup* $V = F \cdot C_{D_p}(F / F_{f(p)})$ is an $\mathfrak{F}$ *-injector of G and* Σ I *V.*

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NONEXISTENCE OF RADIAL ENTIRE SOLUTION OF SEMILINEAR ELLIPTIC SYSTEM WITH GRADIENT ADDEND

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Let's consider semilinear elliptic system with gradient addend:

$$\begin{cases} \Delta u - g_1(|x|)|\nabla u|^{\alpha_1} = f_1(|x|)v^{\beta_1} \\ \Delta v - g_2(|x|)|\nabla v|^{\alpha_2} = f_2(|x|)u^{\beta_2} \end{cases}, \tag{1}$$

where $x \in R^N$ (N≥3) is independent variable, $\alpha_1, \beta_1, \alpha_2, \beta_2 > 1$ are some constant values, f_1, g_1, f_2, g_2 are positive continuous functions defined on interval $[0, \infty)$, ∇u denotes gradient of function u , Δ is Laplace operator, *u*, *v* is unknown functions.

Entire radial solution of system (1) is defined to be a radial simmetric vector-valued function $(u, v) \in C^2(R^N) \times C^2(R^N)$ which satisfies (1) at every point *x* in $\mathbf{R}^N$.

Number of papers cosidering entire solution existence problem of nonlinear elliptic equations and systems were published in few past years (see, for example [1–5] and their bibliographies). In particular, papers [4, 5] consider entire solution existence problem of semilinear elliptic equations.

This paper is concerned on existence of radial entire solution of system (1).

Material and methods. Results stated in this paper are achieved with help of general method of mathematical analysis.

Results and discussed. If functions g_1, g_2 are such that $\int_1^{\infty} t^{(-\alpha_1)(N-1)} g_1(t) dt = \infty$ or $\int_1^{\infty} t^{(-\alpha_2)(N-1)} g_2(t) dt = \infty$ then there are no radial entire solutions of system (1).

Conclusion. A sufficient nonexistence condition of radial entire solution of semilinear elliptic system with gradient addend (1) is stated in this paper.

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ON THE CLASSICAL FORMULATION OF BOUNDARY VALUE PROBLEMS FOR ONE EIGHT-DIMENSIONAL ANALOGUE OF THE CAUCHY-RIEMANN SYSTEM

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In the classical formulation of boundary value problem for an elliptic system is to find the solutions systems in the domain for given boundary conditions on the boundary - linear combinations of the unknown functions and their derivatives (among all possible boundary conditions, a special place is occupied by Dirichlet and Neumann conditions). The existence and uniqueness of solutions the boundary value problem with any the right parts for such problems are rare. The question is when a solution exists at imposition a finite number of conditions on the right side and at the same time the solution depends on a finite number of arbitrary constants, i.e. the question solvability of problem with precision to finite-dimensional spaces. For example, the Neumann problem for the Laplace equation has a solution if one condition exists while its solution depends on one arbitrary constant [1, Ch. 16]. Homogeneous Dirichlet problem for the system Bicadze has infinitely many linearly independent solutions in the unit circle [2].

This paper deals with, an example of an elliptic system of eight first-order equations with eight variables for which the homogeneous problem Dirichlet and homogeneous problem Neumann have infinitely many linearly independent solutions in any domain.

In a bounded domain $\Omega \subset \mathrm{R}^8$ whose boundary is a sufficiently smooth seven-dimensional manifold, we consider the elliptic system of differential equations

$$\sum_{j=1}^{8} A_j \frac{\partial U}{\partial x_j} = f(x), \tag{1}$$

here the $A_j\ (j=1,\ldots,8)$ are constant real matrices of the eighth order; f be eight-component column vector; $U(x)=(U_1(x),U_2(x),\ldots,U_8(x))^T$ – unknown eight-component column vector. Let the characteristic matrix $A(\xi)$ of system (1) has the form

$$A(\xi)=\sum_{j=1}^{8} A_j\xi_j = \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix}, \tag{2}$$

$$b_{11}=\begin{bmatrix} \xi_1-\xi_4 & -\xi_4 & -\xi_2+\xi_3 & \xi_3 \\ 2\xi_4 & \xi_1+\xi_4 & -2\xi_3 & -\xi_2-\xi_3 \\ \xi_2+\xi_3 & \xi_3 & \xi_1+\xi_4 & \xi_4 \\ -2\xi_3 & \xi_2-\xi_3 & -2\xi_4 & \xi_1-\xi_4 \end{bmatrix},$$

$$b_{12}=\begin{bmatrix} \xi_5+\xi_6 & \xi_6 & -\xi_7+\xi_8 & -\xi_7 \\ -2\xi_6 & \xi_5-\xi_6 & -2\xi_8 & \xi_7-\xi_8 \\ \xi_7-\xi_8 & \xi_7 & \xi_5+\xi_6 & \xi_6 \\ 2\xi_8 & -\xi_7+\xi_8 & -2\xi_6 & \xi_5-\xi_6 \end{bmatrix},$$

$$b_{21}=\begin{bmatrix} -\xi_5+\xi_6 & \xi_6 & -\xi_7+\xi_8 & -\xi_7 \\ -2\xi_6 & -\xi_5-\xi_6 & -2\xi_8 & \xi_7-\xi_8 \\ \xi_7-\xi_8 & \xi_7 & -\xi_5+\xi_6 & \xi_6 \\ 2\xi_8 & -\xi_7+\xi_8 & -2\xi_6 & -\xi_5-\xi_6 \end{bmatrix},$$

$$b_{22} = \begin{bmatrix} \xi_1+\xi_4 & \xi_4 & \xi_2-\xi_3 & -\xi_3 \\ -2\xi_4 & \xi_1-\xi_4 & 2\xi_3 & \xi_2+\xi_3 \\ -\xi_2-\xi_3 & -\xi_3 & \xi_1-\xi_4 & -\xi_4 \\ 2\xi_3 & -\xi_2+\xi_3 & 2\xi_4 & \xi_1+\xi_4 \end{bmatrix}$$

The system (1) be a generalized Cauchy–Riemann system, i.e. each component $U_k(x)(k=1,\dots,8)$ of an arbitrary continuously differentiable solution U of this system satisfies the Laplace equation in R^8.

The problem of finding a solution of the system (1) is continuously differentiable in Ω and continuous in $\overline{\Omega}$, satisfying the boundary conditions on $\partial\Omega$

$$u_1\big|_{\partial\Omega} = g_1(x),\ u_2\big|_{\partial\Omega} = g_2(x),\ u_3\big|_{\partial\Omega} = g_3(x),\ u_4\big|_{\partial\Omega} = g_4(x). \qquad (3)$$

is called the Dirichlet problem, and the problem of finding solutions of the system (1) is continuously differentiable in $\overline{\Omega}$,satisfying the boundary conditions on $\partial\Omega$

$$\frac{\partial u_1}{\partial \nu}\bigg|_{\partial\Omega} = g_1(x),\ \frac{\partial u_2}{\partial \nu}\bigg|_{\partial\Omega} = g_2(x),\ \frac{\partial u_3}{\partial \nu}\bigg|_{\partial\Omega} = g_3(x),\ \frac{\partial u_4}{\partial \nu}\bigg|_{\partial\Omega} = g_4(x). \qquad (4)$$

is called the Neumann problem. In the formulas (3) and (4) $g_1(x),\dots,g_4(x)$ defined on $\partial\Omega$ functions; ν is single field of outward normal on $\partial\Omega$.

Direct verification shows that for each natural k vector function

$$U_k(x) = \left(0,0,0,0,\mathrm{Im}(x_1+ix_2)^k, \mathrm{Re}(x_6+ix_7)^k, \mathrm{Re}(x_1+ix_2)^k, \mathrm{Im}(x_6+ix_7)^k\right)^T$$

is a solution of the homogeneous problem (1), (3) and (1), (4), and this suggests that this problems is not solvable with precision to finite-dimensional space. It is important to explore the problem of formulation of regularizability [3] boundary value problems for the system (1) with the characteristic matrix (2).

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ON FITTING CLASSES OF π-SEPARABLE GROUPS

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One of the main problems in the Fitting classes theory is construction a new Fitting classes using the specified properties of canonical subgroups. In this direction of research in the theory of finite soluble groups the results of Lockett, Brison and Hawkes are known (see IX – X [1]). However, all these results were associated with finding new families of Fitting classes with specified properties of $\mathfrak{F}$-injectors and Hall subgroups only in the universe of all finite soluble groups. It is known that if $\mathfrak{F}$ is non-empty Fitting class, then for each group G there exists a maximal normal subgroup belonging to $\mathfrak{F}$. It is called the $\mathfrak{F}$-radical of group G and is denoted by $G_{\mathfrak{F}}$. Accordingly the problem of constructing Fitting classes with the help of $\mathfrak{F}$-radicals and Hall subgroups arises.

Work purpose is to find new families of Fitting classes defined properties $\mathfrak{F}$-radicals and Hall π-subgroups in the universe of finite groups, in the general case nonsolvable.

Preliminaries. *A class of groups* is a set of groups which along with each of its group contains all groups isomorphic to it.

A Fitting class is called class $\mathfrak{F}$ which closed under normal subgroups and products of normal $\mathfrak{F}$-subgroups.

The subgroup H of group G is called a π-subgroup if $|H|$ is π-number.

The subgroup H is a Hall π-subgroup $|H|$ if is π-number, and the index $|G : H|$ is π'-number (i.e. index of such π-subgroup is not divisible by primes of the π set).

Finite group G is π-separable, if and only if all the chief factors are either π'-groups or a π-groups.

In the finite groups theory the theorem of Chunikhin is known saying (see V, Theorem 3.7 [2]) that a π-separable group satisfies D_π.

In other words, for any π-separable group G the following conditions are satisfied:

1) Hall π-subgroups there exist in group of G;
2) any two Hall π-subgroups of G are conjugate;
3) every π-subgroup of group G is contained in a Hall π-subgroup.

Let denote class of all π-separable groups by $\mathfrak{R}_\pi$, denote by $\mathfrak{E}_{\pi'}$ – the class of all π'- groups, where π' is the complement of π of all primes.

Results and discussion. The main result of the work is the following.

DEFINITION. Let π be a set of primes. We denote by $\mathfrak{R}_\pi(\mathfrak{F})$ the class of all π-separable groups which is defined as follows:

$G \in \mathfrak{R}_\pi(\mathfrak{F})$ if and only if the $\mathfrak{F}$-radical of the group G contains some a Hall π-subgroup of G.

It is proved.

THEOREM. *The following assertions are hold:*

1) *A class* $\mathfrak{R}_\pi(\mathfrak{F})$ *is a Fitting class;*
2) $\mathfrak{R}_\pi(\mathfrak{F})$ *is π-saturated Fitting class, i.e. e.* $\mathfrak{R}_\pi(\mathfrak{F})\,\mathfrak{E}_{\pi'} = \mathfrak{R}_\pi(\mathfrak{F})$.

Conclusion. Thus, obtained results describe methods for constructing new families of Fitting classes of finite groups by radicals, which can be used in the future to describe the structure of the canonical subgroups.

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COMPUTER MODELING OF PHYSICAL PROCESSES, DEVICES, SYSTEMS IN INDUSTRY AND EDUCATION

RADIATIVE DECAYS OF VECTOR MESONS IN POICARE-COVARIANT QUARK MODEL

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Radiative decays of vector mesons is a handy tool for studying the structure of hadrons as these processes are "purely" hadrons and don't require additional relations of electroweak theory. In our work, the calculation of the form-factor of the radiative decay conducted within the constituent relativistic quark model based on the point form of Poincare-invariant quantum mechanics or Relativistic Hamiltonian dynamics (**RHD**): work in this form **RHD** has several advantages in the calculations, one of which is a match 4-rates for systems with and without interaction.

$V \to P\gamma$ **decay in Relativistic Hamiltonian dynamics.** The expression for the decay constants can be parameterized using the 4-velocities of the initial and final meson by the following expression:

$$F_{VP\gamma}(q^2)K^{\alpha}(\mu) = (2\pi)^3 \frac{\sqrt{4V_0V_0^{/}}}{\sqrt{MM^{/}}} {}_P\langle \vec{Q}' | J^{\alpha} | \vec{Q} \rangle_V , \qquad (1)$$

where $K^{\alpha}(\mu) = i\varepsilon^{\alpha\nu\rho\sigma}\varepsilon_{\nu}(\mu)V_{\rho}V_{\sigma}^{/}$. This parameterization is convenient for a point form of **RHD**.

In this paper, we consider mesons $\mathrm{V}(Q,M)$ and $\mathrm{P}(Q^{/},M^{/})$ as relativistic constituent quark q and anti-quark $\overline{Q}$ system in the framework of Poincare-invariant quantum mechanics. In this approach, this decay is caused by the emission of a γ-quantum by the quark, entering the meson V. Since the Poincare-invariant quantum mechanics allows to relate the state vector mesons with the state vector of its constituent quarks $p_1 = (\omega_{m_q}(p_1), \vec{p}_1)$ and $p_2 = (\omega_{m_{\overline{Q}}}(p_2), \vec{p}_2)$, we shall construct a basis of the direct product of two quark masses m_q and $m_{\overline{Q}}$ with helicity λ_1 and λ_2 :

$$|\,\vec{p}_1,\lambda_1\rangle|\,\vec{p}_2,\lambda_2\rangle \equiv |\,\vec{p}_1,\lambda_1;\vec{p}_2,\lambda_2\rangle . \qquad (2)$$

Using the Clebsch-Gordan decomposition of the Poincare group for the scheme with «L-S» scheme [1], write down the initial and final condition using the full and relative momentum of the two quarks [2] :

$$|\vec{Q}\rangle_V = \int d\vec{k} \sqrt{\frac{\omega_{m_q}(p_1)\omega_{m_{\overline{Q}}}(p_2)}{\omega_{m_q}(k)\omega_{m_{\overline{Q}}}(k)V_0}} \frac{\Psi^{\mu}(k)}{2\sqrt{\pi}} \sum_{\lambda_1,\lambda_2}\sum_{\nu_1,\nu_2} C^{\frac{1}{2},\frac{1}{2},1}_{\nu_1,\nu_2,\mu} D^{1/2}_{\lambda_1,\nu_1}(\vec{n}_{W_1}) D^{1/2}_{\lambda_2,\mu-\nu_1}(\vec{n}_{W_2}) |\,\vec{p}_1,\lambda_1;\vec{p}_2,\lambda_2\rangle, \qquad (3)$$

$$|\vec{Q}'\rangle_P = \int d\vec{k}' \sqrt{\frac{\omega_{m_q}(p_1')\omega_{m_{\overline{Q}}}(p_2')}{\omega_{m_q}(k')\omega_{m_{\overline{Q}}}(k')V_0^{/}}} \frac{\Phi(k')}{2\sqrt{\pi}} \sum_{\lambda_1',\lambda_2'}\sum_{\nu_1',\nu_2'} C^{\frac{1}{2},\frac{1}{2},0}_{\nu_1',\nu_2',0} D^{1/2}_{\lambda_1',\nu_1'}(\vec{n}_{W_1}') D^{1/2}_{\lambda_2',-\nu_1'}(\vec{n}_{W_2}') |\,\vec{p}_1',\lambda_1';\vec{p}_2',\lambda_2'\rangle, \qquad (4)$$

with the Clebsch-Gordon coefficients:

$$C^{\frac{1}{2},\frac{1}{2},1}_{\nu_1,\nu_2,\mu} = \frac{\sqrt{3+4\nu_1\nu_2}}{2}\delta_{\mu,\nu_1+\nu_2}, \; C^{\frac{1}{2},\frac{1}{2},0}_{\nu_1',\nu_2',0} = \sqrt{2}\nu_1^{/}\delta_{\nu_1^{/},-\nu_2^{/}} . \qquad (5)$$

Compliance with the requirements of the Poincare-invariance in the framework of the point form RGD in expressions (3) and (4) has led to the appearance of the wave functions of vector $\Psi^{\mu}(k)$ and scalar $\Phi(k')$ meson as bound systems, which, given the number of quark colors normalized expression

$$N_C \int_0^{\infty} d\vec{k}\vec{k}^2 |\Psi^{\mu}(k)| = N_C \int_0^{\infty} d\vec{k}'\vec{k}'^2 |\Phi(k')| = 1 . \qquad (6)$$

Substitution of the electromagnetic current operator

$$\hat{J}^{\mu} = e\ \hat{\bar{\psi}}(x)\Gamma^{\alpha}\hat{\psi}(x) \tag{7}$$

with [3]

$$\Gamma^{\alpha} = F_1(q^2)\gamma^{\alpha} + \frac{i\sigma^{\alpha\beta}}{2m} q_{\beta} F_2(q^2) \tag{8}$$

in the expression (1) using the expression (3), (4) and (5) leads us to

$$F_{VP\gamma}(q^2) = \frac{1}{2\pi}\sum_{\lambda_1,\lambda_2}\sum_{\nu_1,\nu_2}\sum_{\lambda_1',\lambda_2'}\sum_{\nu_1',\nu_2'}\iint d\vec{k}d\vec{k}' \sqrt{\frac{\omega_{m_q}(p_1)\omega_{m_{\bar{Q}}}(p_2)M}{\omega_{m_q}(k)\omega_{m_{\bar{Q}}}(k)}}\sqrt{\frac{\omega_{m_q}(p_1')\omega_{m_{\bar{Q}}}(p_2')M'}{\omega_{m_q}(k')\omega_{m_{\bar{Q}}}(k')}}\sqrt{\frac{3+4\nu_1\nu_2}{2}}\nu_1'\delta_{\mu-\nu_1,\nu_2}\delta_{\nu_1',-\nu_2'}$$
$$\frac{(MM')^{-1}}{(KK^*)}\Psi(k)\Phi(k')(e_q \frac{D^{*1/2}_{\lambda_1',\nu_1'}(\vec{n}_{W_1}')\bar{u}_{\lambda_1'}(\vec{p}_1',m_q)(\Gamma K^*)D^{1/2}_{\lambda_1,\nu_1}(\vec{n}_{W_1})u_{\lambda_1}(\vec{p}_1,m_q)}{\sqrt{4\omega_{m_q}(p_1')\omega_{m_q}(p_1)}} D^{*1/2}_{\lambda_2',\nu_2'}(\vec{n}_{W_2}')\langle \vec{p}_2',\lambda_2' | \vec{p}_2,\lambda_2\rangle D^{1/2}_{\lambda_2,\nu_2}(\vec{n}_{W_2}) + \tag{9}$$
$$+e_{\bar{Q}}\frac{D^{1/2}_{\lambda_2,\nu_2}(\vec{n}_{W_2})\bar{\upsilon}_{\lambda_2}(\vec{p}_2,m_{\bar{Q}})(\tilde{\Gamma}K^*)D^{*1/2}_{\lambda_2',\nu_2'}(\vec{n}_{W_2}')\upsilon_{\lambda_2'}(\vec{p}_2',m_{\bar{Q}})}{\sqrt{4\omega_{m_{\bar{Q}}}(p_2)\omega_{m_{\bar{Q}}}(p_2')}} D^{*1/2}_{\lambda_1',\nu_1'}(\vec{n}_{W_1}')\langle \vec{p}_1',\lambda_1' | \vec{p}_1,\lambda_1\rangle D^{1/2}_{\lambda_1,\nu_1}(\vec{n}_{W_1})).$$

To further simplification of expression (9) we use the transformation formula Dirac bispinors [1]

$$\begin{aligned}&\sum_{\sigma} D^{1/2}_{\sigma,\lambda}(\vec{n}_W(\vec{k},\vec{Q}))u_{\sigma}(\vec{p},m) = B(\vec{u}_Q)u_{\lambda}(\vec{k},m),\\ &\sum_{\sigma}\bar{u}_{\sigma}(\vec{p},m)D^{*1/2}_{\sigma,\lambda}(\vec{n}_W(\vec{k},\vec{Q})) = \bar{u}_{\lambda}(\vec{k},m)B^{-1}(\vec{u}_Q),\end{aligned} \tag{10}$$

and the transformation law of the state vectors

$$\begin{aligned}&\sum_{\sigma} D^{1/2}_{\sigma,\lambda}(\vec{n}_W)|\,\vec{p},\sigma\rangle = \sqrt{\frac{\omega_m(k)}{\omega_m(p)}}U(\vec{u}_Q)|-\vec{k},\lambda\rangle,\\ &\sum_{\sigma}\langle \vec{p},\sigma\,| D^{*1/2}_{\sigma,\lambda}(\vec{n}_W) = \sqrt{\frac{\omega_m(k)}{\omega_m(p)}}\langle -\vec{k},\lambda\,| U^{+}(\vec{u}_Q).\end{aligned} \tag{11}$$

After a series of simplifications of the expression (9), we finally obtain:

$$F_{VP\gamma}(q^2) = \frac{1}{4\pi}\sum_{\nu_1,\nu_1'}\iint d\vec{k}d\vec{k}'\sqrt{\frac{3+4\nu_1(\mu-\nu_1)}{2}}\nu_1'\Psi(k)\Phi(k')(\sqrt{MM'})^{-1}$$
$$(\sqrt{\frac{1}{\omega_{m_q}(k)\omega_{m_q}(k')}}e_q\bar{u}_{\nu_1'}(\vec{k}',m_q)B^{-1}(\vec{u}_{Q'})\frac{(\Gamma K^*)}{(KK^*)}B(\vec{u}_Q)u_{\nu_1}(\vec{k},m_q)\langle -\vec{k}',-\nu_1'\,|U^{+}(\vec{u}_{Q'})U(\vec{u}_Q)\,|-\vec{k},\mu-\nu_1\rangle +$$
$$+\sqrt{\frac{1}{\omega_{m_{\bar{Q}}}(k)\omega_{m_{\bar{Q}}}(k')}}e_{\bar{Q}}\bar{\upsilon}_{\mu-\nu_1}(-\vec{k},m_{\bar{Q}})B^{-1}(\vec{u}_{Q'})\frac{(\Gamma K^*)}{(KK^*)}B(\vec{u}_Q)\upsilon_{-\nu_1'}(-\vec{k}',m_{\bar{Q}})\langle \vec{k}',\nu_1'\,|U^{+}(\vec{u}_{Q'})U(\vec{u}_Q)\,|\vec{k},\nu_1\rangle) . \tag{12}$$

Calculation of the form factor $F_{VP\gamma}(q^2)$ in the generalized Breit system. For generalized Breit system we have

$$V_{\bar{Q}} + V_{\bar{Q}'} = 0 \tag{13}$$

and, as a consequence,

$$B(u_{\bar{Q}}) = B(u_{\bar{Q}'}) , \tag{14}$$

where the boost operator $B(u_{\bar{Q}})$ have properties $B^{-1}(u_{\bar{Q}}) = B(-u_{\bar{Q}})$ and $B(u_{\bar{Q}})B(u_{\bar{Q}}) = B(\upsilon_{\bar{Q}}) = V_{\bar{Q}}\gamma^0$.

Using the vectors

$$\begin{aligned}\vec{k}_1 &= \vec{k} + \vec{\upsilon}_{\bar{Q}}((\varpi+1)\omega_{m_q}(k) + \sqrt{\varpi^2-1}\cdot|\,\vec{k}\,|\cos\theta),\\ \vec{k}_2 &= \vec{k} - \vec{\upsilon}_{\bar{Q}}((\varpi+1)\omega_{m_{\bar{Q}}}(k) - \sqrt{\varpi^2-1}\cdot|\,\vec{k}\,|\cos\theta)\end{aligned} \tag{15}$$

and the transformation law of the state vectors, the expression (12) simplifies to

$$F_{VP\gamma}(q^2)=\frac{1}{4\pi}\sum_{\nu_1,\nu_1'}\int d\vec{k}\sqrt{\frac{3+4\nu_1(\mu-\nu_1)}{2}}\nu_1'\Psi(k)(\sqrt{MM'})^{-1}$$
$$(\sqrt{\frac{\omega_{m_{\bar Q}}(k_2)}{\omega_{m_q}(k)\omega_{m_q}(k_2)\omega_{m_{\bar Q}}(k)}}e_q\bar u_{\nu_1'}(\vec{k}_2,m_q)\frac{(\Gamma K^*)}{(KK^*)}V_{\bar Q}\gamma^0 u_{\nu_1}(\vec{k},m_q)D^{1/2}_{-\nu',\mu-\nu_1}(-\vec{n}_{W_2}(\vec{k},\vec{\upsilon}_{\bar Q}))\,\Phi(k_2)+ \qquad (16)$$
$$+\sqrt{\frac{\omega_{m_q}(k_1)}{\omega_{m_{\bar Q}}(k)\omega_{m_{\bar Q}}(k_1)\omega_{m_q}(k)}}e_{\bar Q}\bar\upsilon_{\mu-\nu_1}(-\vec{k},m_{\bar Q})\frac{(\Gamma K^*)}{(KK^*)}V_{\bar Q}\gamma^0\upsilon_{-\nu_1'}(-\vec{k}_1,m_{\bar Q})D^{1/2}_{\nu',\nu_1}(\vec{n}_{W_1}(\vec{k},\vec{\upsilon}_{\bar Q}))\,\Phi(k_1)\,)$$

or, using the explicit form of the operator Γ^α,

$$F_{VP\gamma}(q^2)=e_q((1+\kappa_q)I_1+\kappa_q I_2)+e_{\bar Q}((1+\kappa_{\bar Q})I_1+\kappa_{\bar Q}I_2) \qquad (17)$$

where κ_q and $\kappa_{\bar Q}$, accordingly, the anomalous magnetic moments of the quark and antiquark, a $I_1=I(m_q,m_{\bar Q}), I_2=I(m_{\bar Q},m_q)$ - integrals of expression (16).

Choosing the wave functions of pseudoscalar and vector mesons in the form

$$\Phi(k)=\frac{2}{\pi^{1/4}\beta^{3/2}}\cdot\exp(-\frac{k^2}{2\beta^2}) \qquad (18)$$

for the parameters β, obtained on the basis of experimental data on leptonic decays of hadrons [4], carrying out numerical integration, we find that for certain values of the anomalous magnetic moments: κ_u = 0,1404 , κ_d = 0.1114, κ_s = 0,1957 (in natural units), we describe the experimentally known decay widths $\rho^+\to\pi^+\gamma$, $K^{*0}\to K^0\gamma$ and $K^{*+}\to K^+\gamma$.

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SOME METHODS OF NUMERICAL SOLUTION QUASI-LINEAR HEAT CONDUCTION PROBLEMS

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Problem of quasi-linear heat conduction is not new. Some information about this subject you can find in [1].

The questions of finding the approximate (numerical) solution of linear problems are studied in details. However, the question of finding the numerical solution of second order quasi-linear problems of parabolic type is studied much lesser. Level of accuracy of the approximate solutions of such problems is not more than 1E-3 – 1E-4. First of all, level of accuracy depends on the period of time where an approximate solution is sought.

In this paper, you can find the solution of number quasi-linear problems of parabolic type. We tried to largely remove the existing restrictions on the maximum achievable accuracy by these problems.

In these problems, we tried to largely remove the existing restrictions on the maximum achievable accuracy.

Material and methods. We know that the quasi-linear equation of the heat conduction is:

$$u_t^{'}=\frac{\partial}{\partial x}(K(x,t,u)\frac{\partial u}{\partial x})+f(x,t,u). \qquad (1)$$

The problem is to find an approximate solution of equation (1) that satisfies the initial and edge conditions:

$$u(x,0) = \mu(x); u(0,t) = \mu_1(t); u(l,t) = \mu_2(t);$$
$$x \in [0;l], t \in [0;T]. \tag{2}$$

Consider the essence of the difference method for solving the equation (1) if given conditions are (2).

Let numerical solution of the problem (1)-(2) reduce to the calculation of the approximate values of the grid function $y(x_i, t_g)$ at the nodal points $x_i = ih, t_g = g\tau$, where $h = \frac{l}{N}, \tau = \frac{T}{M}, i = \overline{0;N}, g = \overline{0;M}$.

Consider the model problem where the known solution is $u_1(x,t) = x^2 + tx$ and the kernel is $K_i(x,t,u)$. The kernel is equal $u^2 + t^2$. Substitute these data in the general equation (1). We get the following nonlinear problem:

$$\frac{\partial u}{\partial t} = (u^2 + t^2)\frac{\partial^2 u}{\partial x^2} + 2u(\frac{\partial u}{\partial x})^2 - 2(u^2 + t^2) - (2x+t)^2 2u + x \tag{3}$$

the initial-boundary conditions are (2).

After replacing the derivatives of their three-point difference approximations (with preservation of the properties of stability), the solution of (3) can be reduced to the solution of the system:

$$\frac{y_k^{m+1} - y_k}{\tau} = (1-\sigma)((y_k^2 + t^2)\frac{y_{k+1}^{m+1} - 2y_k^{m+1} + y_{k-1}^{m+1}}{h^2} + 2y_k(\frac{y_{k+1}^{m+1} - y_{k-1}^{m+1}}{2h})^2 - f(x, t+\tau, y_k)) +$$
$$+\sigma((y_k^2 + t^2)\frac{y_{k+1}^{m} - 2y_k^{m} + y_{k-1}^{m}}{h^2} + 2y_k(\frac{y_{k+1}^{m} - y_{k-1}^{m}}{2h})^2 - f(x,t,y_k)); k = \overline{0;N}. \tag{4}$$

When σ = 0 we get the absolute stability of a purely implicit scheme, and when σ = 0.5 we have the Crank-Nicolson scheme.

System (4) is solved using iterative processes proposed V.M. Madorsky [2]. The result is compared with the method by I.V. Puzynin [3].

In operator form the system (4) can be represented as:

$$f(x) = 0; f(D \subset R^n \to R^n). \tag{5}$$

Algorithm to solve the system partially regularized method is shown below:

<u>Step 1</u>. We solve the linear system for the determination of the amendment Δx_n :

$$(\alpha\beta_n \| f(x_n) \| E + f'(x))\Delta x_n = -\beta_n f(x_n); n = 0, 1, 2, \ldots; \beta_0 \in [10^{-3}; 10^{-1}]; \alpha << 1. \tag{6}$$

<u>Step 2</u>. Correct the vector x_n :

$$x_{n+1} = x_n + \Delta x_n. \tag{7}$$

<u>Step 3</u>. If $\| f(x_{n+1}) \| < \varepsilon,\ \ \varepsilon << 1$, then it means the end of the failures, otherwise you can go to <u>step 4.</u>

<u>Step 4</u>. If $\| f(x_{n+1}) \| < \| f(x_n) \|$, then we set β_{n+1} to 1, otherwise a new step length defines by one of two methods [2]:

$$\beta_{n+1} = \min\left(1, \frac{\gamma_n \| f(x_n) \|}{\beta_n \| f(x_n + \Delta x_n) \|}\right), \gamma_{n+1} = \frac{\gamma_n \| f(x_n) \| \| f(x_{n+1} + \Delta x_{n+1}) \|}{\| f(x_n + \Delta x_n) \| \| f(x_{n+2}) \|}, \tag{8}$$

$$\beta_0 \in [10^{-2}; 0,5], \gamma_0 = \frac{\beta_0^2 \| f(x_0 + \Delta x_0) \|}{\| f(x_1) \|} \tag{9}$$

and you can go to step 1.

Algorithm (5)-(8) performs the procedure *incomplete* forecast, and the algorithm (5)-(7), (9) – *full* forecast procedure.

Results and discussion. The results of the program you can see in the table:

Table 1. Efficiency of the solution of (3) depending on the choice of solution method and the accuracy required by the principle of Runge

Required accuracy Runge	**Methods**					
	Puzynin		***Partially regularized, incomplete forecast***		***Partially regularized, full forecast***	
	Implicit scheme	*Crank-Nicolson scheme*	*Implicit scheme*	*Crank-Nicolson scheme*	*Implicit scheme*	*Crank-Nicolson scheme*
1E-5	3.4997E-4	3.7118E-4	6.7641E-5	8.5971E-5	6.7641E-5	8.5971E-5
1E-7	3.1683E-4	3.1541E-4	8.2967E-6	5.3701E-6	8.2967E-6	5.3701E-6
1E-9	3.1160E-4	3.1177E-4	4.9980E-7	6.5124E-7	4.9980E-7	6.5124E-7
1E-11	-	-	4.6912E-8	2.4295E-8	4.6912E-8	2.4295E-8

In general, we see that the methods have helped us to find the solution of the problem with an accurate up to eighth order. This proves that the classical method by I.V. Puzynin [3] is less effective than the methods by V.M. Madorskiy [2] are.

Conclusion. It is shown that the methods of numerical solution quasi-linear heat conduction problems are effective. We have proved this fact in solving the model problem (3) and other quasi-linear heat conduction problems.

There is a program that shows us the process of solving quasi-linear heat conduction problems.

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HIDDEN TRANSMISSION OF INFORMATION IN AUDIOFILES USING MUSIC PIECES

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The development and dissemination of network communication methods has led to the emergence of new methods of hidden information transmission using audio files. An effective solution for hidden information transmission using audio files is to combine the methods of computer steganography and cryptography [1]. The basis for computer steganography application is the inability of the human senses to distinguish small changes in the color of the image or sound quality, which is particularly easy to be applied to the objects carrying redundant information. Steganographic audio algorithms are constructed so as to use at most the window of the hearing and other features of voice signals (timbre, speed, etc.), small changes of which a human can not distinguish [2].

Human response to noise depends on which processes predominate in the central nervous system - excitation or inhibition. The significant role in the occurrence of unpleasant sensations plays personal attitude towards the source of the noise, as well as the information implicit in the noise.

Material and methods. Software FruityLoops.Studio.Producer.Edition was used to record musical fragments. It allows to record sound from internal and external sources, as well as the tools available for postprocessing. This software eliminates the interference that occurs when recording fragments of real musical instruments due to the imperfections of the recording equipment and noise while recording.

Small, first, second and third octave piano stave were involved to write musical fragments in the audio, which according used 28 letters of the Russian alphabet. A number of nouns was encrypted by this method and recorded software FruityLoops.Studio.Producer.Edition using major chords of the piano, which was the first note note corresponding to the required letter of the Russian alphabet. As a raw audio file has been selected, «Hungarian Dance №5» Johannes Brahms. Recorded musical fragments were embedded in the audio file.

Results and discussed. Spectral analysis of the audio file with the embedded musical fragments performed by the software Cool Edit Pro 2. These spectral characteristics of the audio source embedded musical fragments and the resulting audio file is presented in Figures 1 - 3.

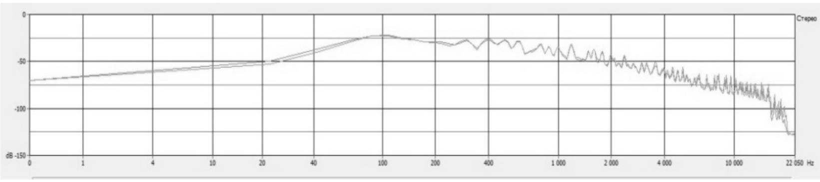

Figure 1 - The spectral characteristics of the original audio file

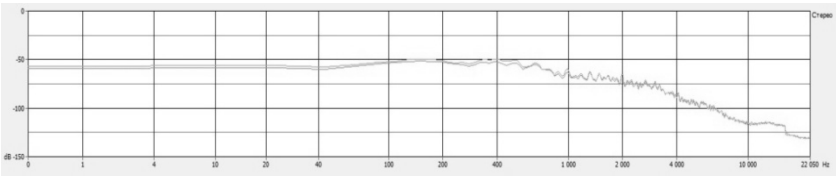

Figure 2 - Spectral characteristics of the embedded melody

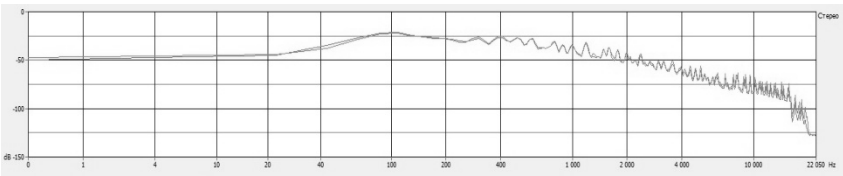

Figure 3 - Spectral characteristics of the resulting audio file

From the spectral characteristics of the signals we can see, that after the addition of a musical fragments in the audio source spectral components vary at frequencies up to 100 Hz, which overlaps with the window of human hearing. Sound level at frequencies up to 100 Hz using the software FruityLoops.Studio.Producer.Edition was reduced by so much that is not allocated to the primary record. This resulted in the spectral characteristics of the resulting signal does not differ from the original audio.

Conclusion. Application of computer steganography simultaneously with cryptography can effectively solve the problem of copyright protection of multimedia products. But at the same time, the use of music pieces for the hidden message transmission is much easier to hide information, since there is no need to transfer the signal spectrum outside the window of hearing is sufficient to reduce the sound level. Thus, pieces of music are arranged in record within a window of human hearing, but at the same time will not be noticeable, since their level of sound will be significantly less than the level of sound basic audio information.

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CONTACT INTERACTIONS SEARCHES AT THE 1 TEV ILC WITH POLARIZED BEAMS

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There are many very different new physics scenarios that predict new particle exchanges which can lead to contact interaction [1, 2] below direct production threshold. If a contact interaction (CI) type corrections to the Standard Model processes are observed, studying its detailed properties can provide information on the fundamental physics responsible for it. Here we will study the differential cross sections for Bhabha process:

$$e^+e^- \to e^+e^- \tag{1}$$

at a 1 TeV electron-positron linear collider (ILC) with both beams longitudinally polarized. We show that the beams polarization can substantially enhance the sensitivity to the parameters of CI.

Discovery reaches on contact interactions parameters. The polarized differential cross section for the process (1), can be written in the form [3]:

$$\begin{aligned}\frac{\mathrm{d}\sigma(P^-,P^+)}{\mathrm{dz}} &= \frac{(1+P^-)(1-P^+)}{4}\frac{\mathrm{d}\sigma_\mathrm{R}}{\mathrm{dz}} + \frac{(1-P^-)(1+P^+)}{4}\frac{\mathrm{d}\sigma_\mathrm{L}}{\mathrm{dz}} + \\ &\quad \frac{(1+P^-)(1+P^+)}{4}\frac{\mathrm{d}\sigma_{\mathrm{RL},t}}{\mathrm{dz}} + \frac{(1-P^-)(1-P^+)}{4}\frac{\mathrm{d}\sigma_{\mathrm{LR},t}}{\mathrm{dz}},\end{aligned} \tag{2}$$

where

$$\frac{\mathrm{d}\sigma_\mathrm{L}}{\mathrm{dz}} = \frac{\mathrm{d}\sigma_{LL}}{\mathrm{dz}} + \frac{\mathrm{d}\sigma_{LR,s}}{\mathrm{dz}}, \qquad \frac{\mathrm{d}\sigma_\mathrm{R}}{\mathrm{dz}} = \frac{\mathrm{d}\sigma_{RR}}{\mathrm{dz}} + \frac{\mathrm{d}\sigma_{RL,s}}{\mathrm{dz}}. \tag{3}$$

In Eqs. (2) and (3), the subscripts t and s denote helicity cross sections with SM γ and Z exchanges in the corresponding channels. In terms of helicity amplitudes the helicity cross sections in (2) and (3) can be represented as the sum of the SM part plus deviations $\Delta_{\alpha\beta}$ representing the effect of the novel effective interactions which will be described below.

The effective interaction of dimension-6 four-fermion contact interaction scenario [1], with $\Lambda_{\alpha\beta}$ ($\alpha, \beta = L, R$) the "compositeness" mass scales, and δ_{ef} =1 (0) for $f = e$ ($f \neq e$) has the form:

$$L = \frac{4\pi}{1+\delta_{ef}} \sum_{\alpha,\beta} \frac{\eta_{\alpha\beta}}{\Lambda^2_{\alpha\beta}} \left(\bar{e}_\alpha \gamma_\mu e_\alpha\right)\left(\bar{f}_\beta \gamma^\mu f_\beta\right), \qquad \eta_{\alpha\beta} = \pm 1, 0. \tag{4}$$

The induced deviations in Eqs. (2), (3) are:

$$\Delta_{\alpha\beta,s} = \Delta_{\alpha\beta,t} = \frac{1}{\alpha_{\mathrm{e.m.}}}\frac{\eta_{\alpha\beta}}{\Lambda^2_{\alpha\beta}}. \tag{5}$$

Rather generally, this kind of effective interactions applies to the cases of very massive virtual exchanges, such as heavy Z'-bosons, leptoquarks and other. Current experimental lower bounds on $\Lambda_{\alpha\beta}$ are mostly derived from nonobservation of deviations at LEP, Tevatron and LHC colliders. At the 95% C.L., they are at the level of 10 – 20 TeV, depending on the processes measured and the type of analysis performed.

To obtain the "discovery reaches" on the CI models one can define the deviations of observables from the SM predictions:

$$\Delta(O) = O(\mathrm{S}M + NP) - O(\mathrm{S}M). \tag{6}$$

For derivation the constraints on the CI models, we compare the theoretical deviations from the SM predictions, that are functions of Λ, to the expected experimental uncertainties on the differential cross sections. As basic observables for the analysis we take the polarized angular distributions, and following the conventional chi-square analysis we introduce:

$$\chi^2(O) = \sum_{(P^-,\,P^+)} \sum_{bins} \left(\frac{\Delta(O)^{bin}}{\delta O^{bin}}\right)^2. \tag{7}$$

Here, for the process (1), the cross sections for the different initial polarization configurations are combined in the chi-square function, and δO denotes the expected experimental relative uncertainty (statistical and systematic). We cut angular range $|\cos\theta| < 0.9$ and divide the angular range into ten equal-size bins. Furthermore, we combine the cross sections with the following initial electron and positron longitudinal polarizations: $(P^-, P^+) = (0.8, 0.3); (-0.8, 0.3); (0.8, -0.3); (-0.8, -0.3)$. For unpolarized beams we remove the sum over (P^-, P^+) in (7). The expected discovery reaches on the contactlike effective interactions can be calculated by assuming a situation where no deviation from the SM predictions is observed within the experimental uncertainty. The corresponding upper limits on the accessible values of contact interaction parameters for a 95% confidence level are determined by the condition $\chi^2 = 3.84$. Numerical results for 1 TeV ILC with 1000 fb^{-1} time integrated luminosity are shown in Table 1. In this table, only the results for positive interference between SM amplitudes and nonstandard contributions are reported ($\eta_{\alpha\beta} = 1$) for the CI models of Eq. (5).

Table 1. Discovery reaches on the parameters of contact interaction models for the 1 TeV ILC with 1000 fb^{-1}.

CI model	$(\lvert P^-\rvert, \lvert P^+\rvert)=(0,0)$	$(\lvert P^-\rvert, \lvert P^+\rvert)=(0.8,0.3)$
Λ_{LL}, (TeV)	83.7	116.2
Λ_{RR}, (TeV)	80.5	114.7
Λ_{LR}, (TeV)	136.6	154.3

The results in Table 1 clearly show the enhancement in sensitivity to the considered effective interactions allowed, for given C.M. energy and luminosity, by beams polarization.

Conclusion. We have presented a χ^2-based estimate of the power for discovering compositeness-inspired four-fermion contact interaction, that is foreseeable at the polarized 1 TeV ILC. The discovery reaches are quite high compared to the current bounds, and depend on availability of beam polarization, as shown in Table 1. For unpolarized beams the discovery reaches on contact interactions at the 1 TeV ILC with 1000 fb^{-1} expected at the level of 80 – 135 TeV. In the polarized case the discovery reaches on four-fermion contact interaction model ranges from 115 TeV to 150 TeV, depending on CI model.

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SEARCH FOR EXTRA DIMENSIONS AT THE 1 TEV ILC WITH POLARIZED BEAMS

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Arkani-Hamed, Dimopoulous, and Dvali have proposed a model (ADD) of low-scale quantum gravity featuring large extra dimensions [1-3]. In this model, the exchange of Kaluza-Klein towers of gravitons can manifest themselves through deviations of the observables from the Standard Model (SM) predictions. Here, we assess the expected “discovery reach” [4] on the ADD model of gravity in large compactified extra dimensions. As basic observables we take the differential cross sections for Bhabha process:

$$e^+e^- \to e^+e^- \qquad (1)$$

at a 1 TeV electron-positron linear collider (ILC) with both beams longitudinally polarized. We emphasize the role of beams polarization in enhancing the sensitivity to the parameters of ADD model.

Observables and discovery reach on extra dimensions. The polarized differential cross section for the Bhabha process (1), can be written as [4]:

$$\frac{d\sigma(P^-,P^+)}{dz}=\frac{(1+P^-)(1-P^+)}{4}\frac{d\sigma_{R}}{dz}+\frac{(1-P^-)(1+P^+)}{4}\frac{d\sigma_{L}}{dz}+\frac{(1+P^-)(1+P^+)}{4}\frac{d\sigma_{RL,t}}{dz}+\frac{(1-P^-)(1-P^+)}{4}\frac{d\sigma_{LR,t}}{dz},\tag{2}$$

where

$$\frac{d\sigma_{L}}{dz}=\frac{d\sigma_{LL}}{dz}+\frac{d\sigma_{LR,s}}{dz},\qquad \frac{d\sigma_{R}}{dz}=\frac{d\sigma_{RR}}{dz}+\frac{d\sigma_{RL,s}}{dz}.\tag{3}$$

In Eqs. (2) and (3), the subscripts t and s denote helicity cross sections with SM γ and Z exchanges in the corresponding channels. In terms of helicity amplitudes the helicity cross sections in (2) and (3) can be represented as the sum of the SM part plus deviations $\Delta_{\alpha\beta}$ representing the effect of the novel effective interactions which will be described below.

The ADD, compactified large extra dimensions, scenario [1-3] motivated by the gauge hierarchy problem. In this scenario, only gravity can propagate in the full multidimensional space. Correspondingly, a tower of graviton KK states with equally-spaced spectrum is exchanged in the ordinary four dimensional space, and induces indirect corrections to the SM γ and Z exchanges. In the parameterization proposed by Hewett, the exchange of such a KK tower is represented by the effective interaction:

$$L=i\frac{4\lambda}{\Lambda_H^4}T^{\mu\nu}T_{\mu\nu},\qquad \lambda=\pm 1.\tag{4}$$

In Eq. (4), $T_{\mu\nu}$ denotes the energy-momentum tensor of the SM particles and Λ_H is an ultraviolet cut-off on the summation over the KK spectrum, expected in the TeV range. The corresponding corrections to the SM amplitudes for Bhabha scattering has the form [4]:

$$\Delta_{LL,s}=\Delta_{RR,s}=\frac{\lambda}{\pi\alpha_{e.m.}\Lambda_H^4}(u+\frac{3}{4}s),\qquad \Delta_{LL,t}=\Delta_{RR,t}=\frac{\lambda}{\pi\alpha_{e.m.}\Lambda_H^4}(u+\frac{3}{4}t),$$
$$\Delta_{LR,s}=-\frac{\lambda}{\pi\alpha_{e.m.}\Lambda_H^4}(t+\frac{3}{4}s),\qquad \Delta_{LR,t}=-\frac{\lambda}{\pi\alpha_{e.m.}\Lambda_H^4}(s+\frac{3}{4}t).\tag{5}$$

For the derivation of the expected "discovery reaches" on the ADD model we introduce the deviations of observables from the SM predictions:

$$\Delta(O)=O(SM+NP)-O(SM).\tag{6}$$

To derive the constraints on the ADD model, one has to compare the theoretical deviations from the SM predictions, that are functions of Λ_H, to the foreseen experimental uncertainties on the differential cross sections. To this purpose, taking the polarized angular distributions as basic observables in (6) for the analysis, and following the conventional chi-square analysis we introduce:

$$\chi^2(O)=\sum_{(P^-,P^+)}\sum_{bins}\left(\frac{\Delta(O)^{bin}}{\delta O^{bin}}\right)^2.\tag{7}$$

Here, for the process (1), the cross sections for the different initial polarization configurations are combined in the chi-square function, and δO denotes the expected experimental relative uncertainty (statistical and systematic). We cut angular range | $\cos\theta$ | < 0.9 and divide the angular range into ten equal-size bins. Furthermore, we combine the cross sections with the following initial electron and positron longitudinal polarizations: (P^-, P^+) = (0.8, 0.3); (–0.8, 0.3); (0.8, –0.3); (–0.8, –0.3). For unpolarized beams we sum only over bins in equation (7).

The expected discovery reach on the ADD model was assessed by assuming a situation where no deviation from the SM predictions is observed within the experimental uncertainty. Accordingly, the corresponding upper limits on the accessible values of Λ_H are determined by the condition χ^2 =

3.84 for a 95% confidence level. In Table 1 we present the numerical results from the process (1) for 1 TeV ILC with 1000 fb^{-1} time integrated luminosity.

Table 1. Discovery reaches (in TeV) on ADD model parameters for the 1 TeV ILC with integrated luminosity 1000 fb^{-1}.

ADD model	$(\|P^-\|, \|P^+\|)=(0,0)$	$(\|P^-\|, \|P^+\|)=(0.8,0.3)$
Λ_H $(\lambda=+1)$	8.74	9.35
Λ_H $(\lambda=-1)$	8.73	9.34

As we can see from Table 1 the ILC with polarized beams will show increased sensitivity to the ADD model parameters.

Conclusion. Many models of physics beyond the SM predict new particles at the TeV scale. Even if the collider energy is not sufficient to produce these particles directly, their virtual exchanges can still lead to observable effects, such as corrections to the SM processes. If such corrections are observed, they can provide important information about the new physics. Here we have considered ADD model of extra dimensions which predict corrections to the Bhabha process. We have shown that measuring angular distributions of fermions at the ILC will allow determining discovery reaches on that model of new physics up to 8.74 TeV for unpolarized ILC and up to 9.35 TeV for polarized one.

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MATRIX EFFECTS ON THE LASING CHARACTERISTICS OF NEODYMIUM IN DPSS LASERS

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Process of laser system development is very labor-intensive nowadays. It takes a lot of time for laser modeling; the device should satisfy special requirements: plain design specified energetic level and variety of other special characteristics. Neodymium diode pumped solid state lasers are widely spread and used [1]. Our goal is to build physical and technical model of neodymium laser and discover the influence of matrix parameters on the lasing characteristics.

Design/methodology/approach. We have considered four crystalline matrices doped with neodymium ions: yttrium - aluminum garnet, yttrium vanadate, KGW, and YLF. Their selection is due to the fact that each of them has its own unique properties exhibited especially in lasers with a short-length active medium (about 1 mm). To illustrate, yttrium vanadate is characterized by a large cross section of the stimulated emission (several times greater than in other matrices). KGW - has a weak concentration quenching and allows one to create the activator concentrations up to 10%. For YLF a weak dependence of the refractive index on temperature is characteristic [2].

For the calculation of the energy and temporal parameters of laser radiation the balance equations of the Statz - De Mars type were used. Population changes at the energy levels have been described in terms of the point model. As the result system of rate equations was composed within discussed theory. Solutions were found using numerical methods of MatchCAD’s tool.

Conclusion. Calculations according to the energy density of laser radiation depending on time have revealed the spiked structure with the decreasing amplitude spikes and the tendency to the steady-state value. A value of the fixed energy density was the highest for the generation of yttrium vanadate. This matrix is also characterized by a very rapid sledding to the stationary value. The transition to the steady-state generation of YLF is the longest. It should also be noted that the slower the transition to the stationary value, the greater the period and the number of spikes. A value of the radiation energy density in the first spike for yttrium vanadate was twice higher than its steady-state value. At the same time, the first spike of YAG was greater by an order of magnitude. Calculations of the pump threshold values have shown that for yttrium vanadate they are lower by an order of magnitude compared to other matrices.

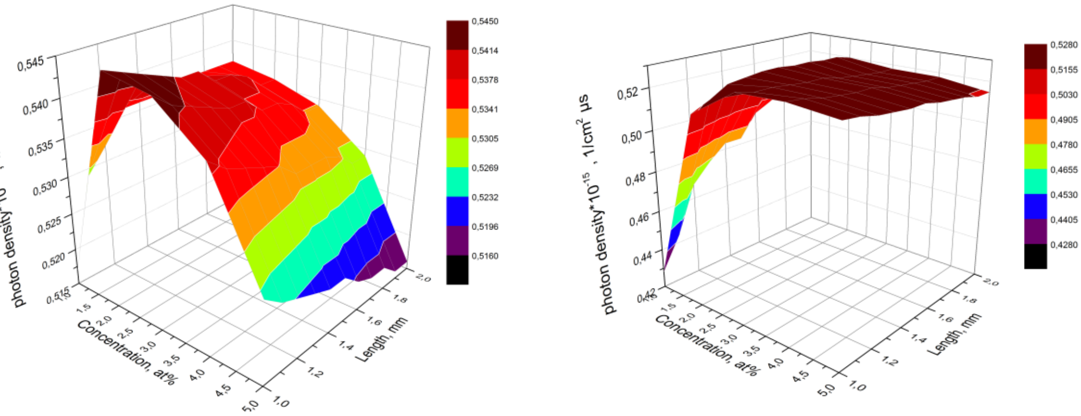

Figure1. Photon density depends on crystals length and neodymium concentration

This work presents an analysis into the energetic characteristics of neodymium for different concentrations and various lengths of laser crystals. According to solutions of rate equation model 3 dimensional models have been built. They allow us to set the optimal parameters of concentration and length to get the maximum laser power output. It has been also shown that the optimum concentrations for these lengths and matrices differ greatly.

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THE USE OF THE SOFTWARE PRODUCT DEFORM 3D TO DETERMINE THE STRESS-STRAIN STATE OF PRECISION ENGRAVINGS STAMPING DIES

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The processing of metals by pressure (OMD) find wide application in many industries. Despite the widespread use of the methods in metal forming processes themselves are still poorly understood, hampering the development of the best technologies to optimize the technological process of manufacture of parts and reduce costs for their production. Primarily, this is due to the complexity of the processes occurring during plastic flow of the metal during processing of metals by pressure. The solution to this situation is the use of programs based on the method of finite elements. Modeling of metal forming processes in these software products allows you to define all the necessary parameters: stress-strain state of the workpiece and tool at any point and at any time, and energy parameters of the process, the values of forces and moments, normal and tangential forces, the contact process parameters and much more, which is necessary for the development of optimal process and for in-depth analysis and understanding of the processes occurring in the workpiece while the plastic flow of the material.

Material and methods. The object of the research is stamping tooling for the manufacture of state awards of the Republic of Belarus. The efficiency of the tool is limited by the resistance of punches and matrices.

Resistance stamps due to the time to failure by the geometry of the shaping surface of the matrix dies. Studies molding surface of the die for stamping pads of the order "For service to Raze" showed that the shape of the stream has no concentrates stress in the form of wedge-shaped recesses.

This contributes to a longer operating time stamp to failure. The stamp of failure is the destruction of the engravings of the matrix in the formation zone of the handle of the sword (Fig. 1).

First of all destroyed the protruding wall prints. The nucleation of cracks that led to the separation of fragments of the shaping surface, as in the first case, is the result of stress concentration in the annular recess around the perimeter of the engravings. Further distribution in the direction of the base of the ledge, forming the handle of the sword, leads to the destruction of the working surface . (Fig. 2). Stress values are of the order of 2800 MPa.

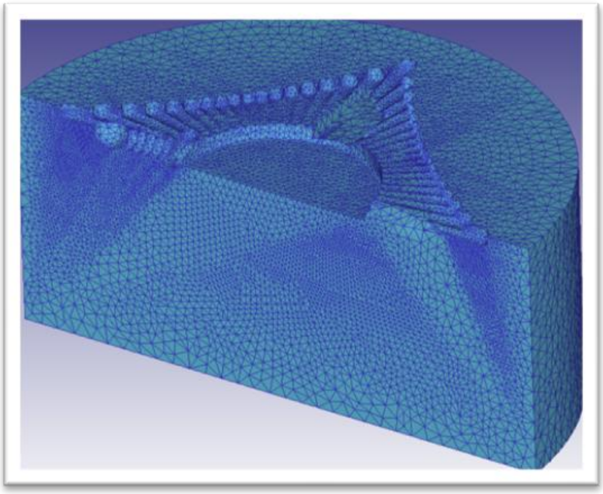

Figure 1 - Model matrix for the minting of the order "For service to Raze".

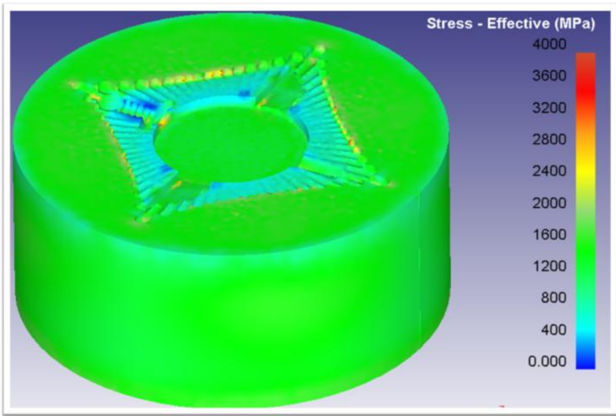

Figure 2 - Matrix for the minting of the order "For service to Raze".

These defects are the result of plastic deformation, which occurs as a result of exposure to high amplitude pulse voltages, provided that the material be in the conditions of a comprehensive uneven compression [1]. From the above it follows that the main reason for the low resistance of stamping dies is a high stress concentration in some areas of the prints. Upgrading forms engravings impossible, as the subsequent change of the geometry of the forgings would be contrary to the approved sample awards.

Results and discussed. The result of simulation of the minting process in the software DEFORM 3D was the determination of the stress-strain state of the workpiece and tool and change the design of the stamp, allowing the most loaded parts of the shaping surface of the tool, to reduce the amplitude of the pulsating voltage.

Conclusion. Production tests stamp to stamp the medallion of the order "For service to Raze" showed that after receiving 150 forgings working surface of the matrix and the punch has no defects. The stamp can be operated next. The expected increase resistance stamping tooling for the manufacture of state awards of the Republic of Belarus of no less than two times.

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COMPUTER SIMULATION OF DOSIMETRIC MEASUREMENTS OF ULTRAVIOLET RADIATION

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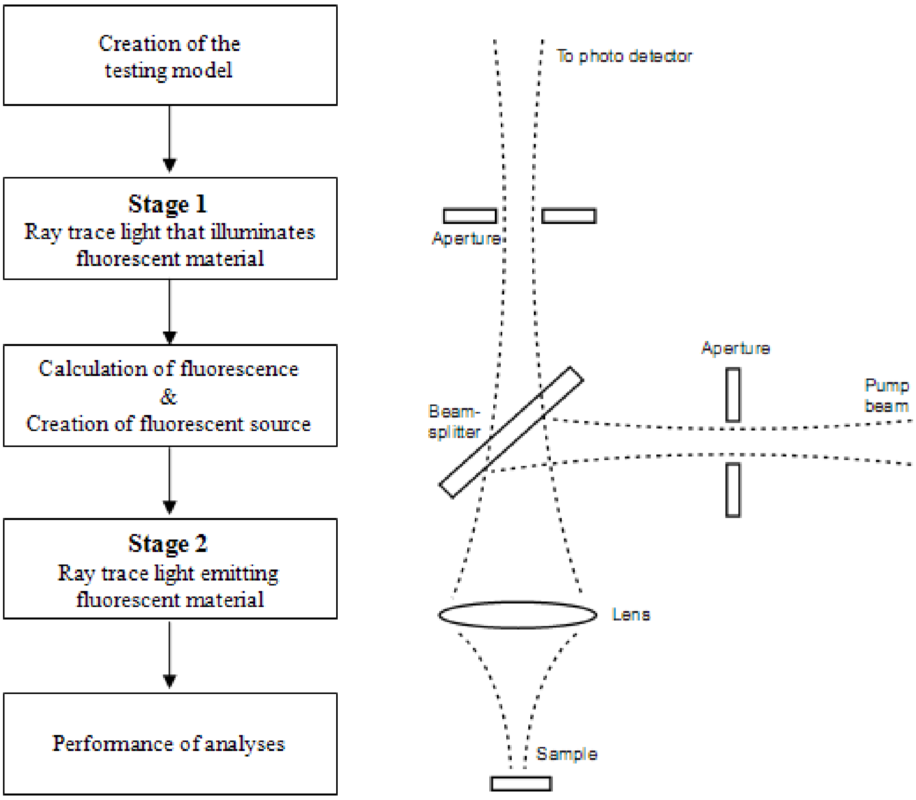
UVR can be measured by biological, chemical and physical detectors. Physical detectors include radiometric devices, which respond to the heating effect of the radiation, and photoelectric devices, in which incident photons are detected by a quantum effect such as the production of electrons. Chemical detectors include photographic emulsions, actinometric solutions and UV-sensitive plastic shields. The solar UV irradiation of large portions of the Earth is currently measured using multifrequency imaging detectors on meteorological satellites. Biological techniques of measurement are generally limited to the use of viruses and microorganisms. The bacteriophage T7 has been described for use as a UV biosensor [1]. It has been used to monitor ambient UV radiation, and when combined with an appropriate optical filter, a spectral response similar to the action spectrum for erythema in human skin can be achieved [2].

Aim of the research is to simulate of the process of physical dosimetric measurements of UVR. Urgency of this work is consisted in difficulty of physically organization of ultraviolet radiation (UVR) measurements, specially this fact is attached to UV-B (wavelength range is 280…320 nm), so it is necessary to provide high requirements of security measures.

Material and methods. With simulation it is possible to reduce the number of real experiments. So it is more ethical and it allows also controlling all the test environment parameters, to repeat the same test changing for example flourophore concentration or activation spectrum without interfering with the other test parameters. Finally using simulation is also reducing the cost for the development because measurement instruments and the use of labs can induce a lot of cost. The challenge for the simulation is the use of realistic parameters for example for the tissue which are sometimes not well known. Another challenge is the simulation time because the pathways of light rays through scattering materials can be very complex.



a) b)

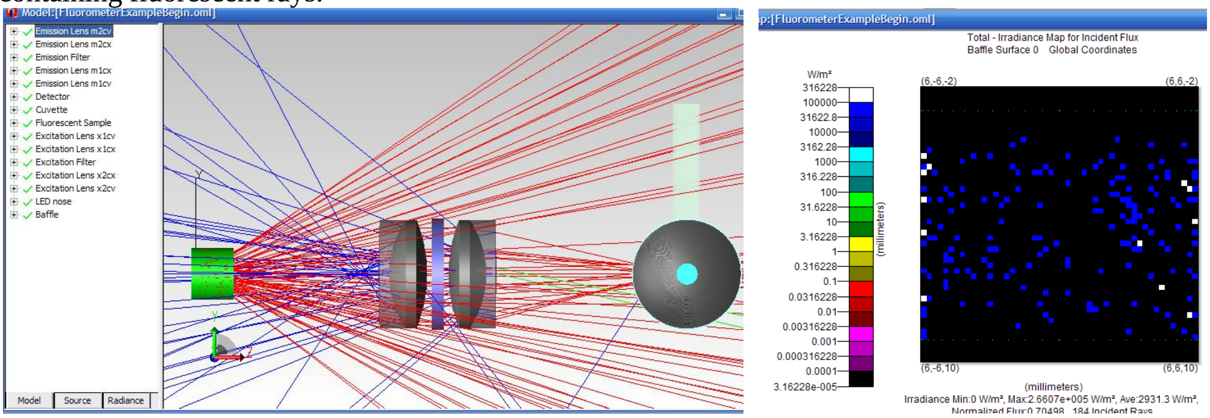
Figure 1 – a) Block-scheme of fluorescence modeling algorithm;
b) The experimental set-up for photoluminescence measurements

Computer program TracePro is a comprehensive, versatile software tool for modeling the propagation of light in imaging and non-imaging opto-mechanical systems [3]. Models are created by importing from a lens design program or a CAD program or by directly creating the solid geometry in program TracePro. Sources propagate through the model with portions of the flux of each traced ray allocated for absorption, specular reflection and transmission, fluorescence and scattering. Significantly it is noted that method of mathematic simulation is used in this software is Monte Carlo.

At the first stage of the ray trace, excitation rays illuminate the fluorescent material. The rays must be in the excitation portion of the fluorescent material spectrum and the model geometry must allow the fluorescent material to be illuminated. A byproduct of this first stage of the ray trace is that program TracePro automatically creates source files which contain rays generated by the fluorescing material. The second stage of the ray trace uses the newly created source files to trace the fluorescing rays themselves. Program TracePro allows you to choose whether the two stages of the ray trace should be performed together as shown on the figure 1 (a). If we decide to organize the physical experiment, we should collect the set-up for fluorescence analysis (figure 1 b).

According to the algorithm of computer simulation we perform fluorescence analysis in the program TracePro.

Results being discussed. We presented model which simulated in the program TracePro in the figure 2 (a). This research model has a cuvette containing fluorescent material that is illuminated by light at excitation wavelengths of the material. The material then fluoresces, generating source files containing fluorescent rays.



a) b)

Figure 2 – a) Model for providing of dosimetric measurements UVR;
b) The result of computer simulation fluorescence analysis

Using the function "Irradiance/Illuminance Map" in the program TracePro we get data about intensity of UVR from different sources on the chosen surface. In the figure 2 (b) we see irradiance map from the "Baffle surface 0".

Conclusion. The results of computer simulation of dosimetric measurements of UVR show that the fluorescence analysis allows to get the characteristics of irradiation by simply mean. Physical measurements of dosimetry of radiation of optical range of frequencies are difficulty and they have low precision of measured data.

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WEB-SYSTEM FOR MANAGED LEARNING IN DISTANCE EDUCATION

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The development of information technology made possible to use the Internet in new ways. Currently, in many countries there is a consistent and sustainable movement to the construction of the information society, which is designed to create the best conditions for maximum self-realization of each person.

The grounds for such a process are the intensive development of computer and telecommunication technologies, and development of information and educational environment. Internet technologies are less expensive to use, high-speed, energy saving, and allow extensive user access simultaneously.

Moreover, changes in access and connection speeds are accompanied by the development of computer programs and their management. In this regard, we can say that the transition to the information society suggests a deep connection between components: the information value of the new information technologies and the social and structural changes in society.

These factors lead to the need to share Internet resources. Thus, web technologies facilitate the formation of a new version of the use of resources of the Internet, which inspire the individual user to place their opinions on the network. Web technology now resemble huge corporation knowledge involving users from around the world. However, the use of web technologies in education are not only a way to provide information, they also involve the cooperation of interested using in the formation of information and communication resources. This development is accompanied by the need to develop new instruments of manipulation of digital data, and no doubt, management tools, knowledge and experience.

Web technologies provide the opportunity for students in the choice of type of individual learning. They suggest ways to work together and safeguards copyrights. An important advantage is the possibility of individualization of the learning process by drafting tasks and extend the range of knowledge in the specialty and in the Internet environment.

Review of existing systems. Today, there are a number of websites that provide access to learning materials. Most clearly distinguishes the following: Uniweb, Universarium, University without borders.

Despite a wealth of possibilities, all of them have their own drawbacks. These systems use the study material of certain persons and universities if some teacher wants to share their learning materials, it will not be able to add your educational material in these systems. This article describes a system where each teacher will be able to sell their training material and this will increase the number and diversity of educational material.

Main characteristics of the system. The object is to develop a website for remote access to learning materials. The system is implemented as a web application. The application has a structure that can be divided into the following components:

• registration of the user;
• payment;
• download training material;
• visual interface.

The website have a number of opportunities:

• several different types of users;
• directly provide user friendly graphical interface for the user;
• ability to pay educational materials plastic card Visa;
• ability to pay educational materials for electronic money PayPal;
• able to download training materials;
• the ability to add training material to your favorites.

It was implemented the following modules:

• module visual interface: i.e. HTML pages and ASP.NET MVC code;
• booting module for download educational materials site;
• payment module for payment of educational materials;

• registration module for registration of users on the site.

Input data for the content of the site served as teaching materials from many authors, and a variety of free educational materials from the information resources of the Internet.

Input data is a text and graphical information.

The main system input data are:

• news;

• information about the resource;

• complete information about the catalog of training materials;

• contact information for the users.

The output is all information that can be displayed on the site the user by processing of SQL-queries. An example of the output data is a catalog of training materials.

USER ACCESS MANAGEMENT SYSTEM "SATORI"

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One of the most challenging issues that engineers face when building united information space of modern enterprise is correct and effective managing of user access rights to the applications and services of corporate network. Sometimes for handling access to the services of different types one has to use multiple different systems what increases management complexity. According to Gartner investigations, user access management is ranked first amongst top 5 security priorities, which also include firewall software, intrusion prevention, data loss prevention and antivirus software. Hence, investigation subject is topical and is directly connected to the problem of technical lifecycle management (in this particular case related to security).

Material and methods. Larger half of modern systems use user access model suggested by Lampson. In this model, dispatcher checks all requests to the object and makes a decision to allow/reject the access. Suggested in the modern literature mathematical model of security policies considers security system in a stationary state: where definition of allowed and forbidden activities is not changed. However, in the practice computer system passes a way from total absence of security tools to having rich security mechanisms, but allowed and forbidden activities may vary dynamically.

Existing commercial products don't always provide the result acceptable to Belarus enterprise. Investigating the capabilities of program suites, represented in the world market allowed to identify their weaknesses: excessive functionality combined with high license fee, additional modules introduction complexity. Russian localization is not always available.

Main goal of centralized access management system Satori [1] creation is building a system that provides synchronization, provisioning and centralized management of user accounts and user rights in the heterogeneous enterprise informational systems and applications based on united centralized data repository.

To reach the goal stated above one has to solve the following tasks:

1. Review and compare existing access management approaches at the point of integrating access to the services of different types.

2. Creating access management system model, which represents protected objects, connections and allows to automate the process of rights assignment.

3. Design and develop consolidated repository of access distinction policies. Developing adapters that handle data migration from local repositories into consolidated storage.

4. Design and develop automated rights assignment methods for individual users and groups of users.

5. Develop program suite that integrates access to the services of different types and provides scalability and portability.

Results and discussion. System "Satori" combines syntax, structure and symantec approaches to provide access to the different type services.

"Satori"s server side of is based on problem-independent component server (PICS). PICS is comprised from two parts. Client part is located at the web server side, receives HTTP requests and transforms them into internal text requests to the server part. Server part handles database operations and business logic and consists of multiple modules. Client and server parts of PICS communicate via TCP/IP interface and can be located either at the same machine or at the different machines.

Modules for data migration, data consistency checking and other auxiliary operations were developed using Java programming language.

System's GUI part was handled with a help of ExtJS Javascript framework. Custom library for GUI elements (screens, form elements, etc.) creation was developed. It simplifies GUI elements creation and debugging efforts.

Conclusion. "Satori" system production introduction will allow to automate enterprise IT services tasks, starting from organizing a workplace for a new employee and finishing with passing the process of approvals in the rights and authorities. "Satori" system is supposed to be used in the organizations that have heterogeneous IT infrastructure and hierarchical user structure. Amongst of main spheres of application one can distinguish: payment (settlement) systems; information and analytical systems; information systems, processing limited access data. Due to the ability to share data access based on timeline, one can point one more application sphere: electronic subscriptions, periodical electronic publications.

"Satori" system utilization will allow to decrease non-core enterprise expenses, related to prevention of information leaks and liquidation of appropriate consequences.

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FREQUENCY-HOPPING SPREAD SPECTRUM

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To improve the performance of short-range wireless communications, channel quality must be improved by avoiding interference and multi-path fading. Frequency hopping spread spectrum (FHSS) is a transmission technique where the carrier hops from frequency to frequency. For frequency hopping a mechanism must be designed so that the data can be transmitted in a clear channel and avoid congested channels. Adaptive frequency hopping is a system which is used to improve immunity toward frequency interference by avoiding using congested frequency channels in hopping sequence. Mathematical modelling is used to simulate and analyse the performance improvement by using frequency hopping spread spectrum with popular modulation schemes, and also the hopping channel situations are investigated[5].

Main advantages of FHSS. Frequency-hopping spread spectrum (FHSS) is a method of transmitting radio signals by rapidly switching a carrier among many frequency channels, using a pseudorandom sequence known to both transmitter and receiver.

A spread-spectrum transmission offers three main advantages over a fixed-frequency transmission[1]:

- Spread-spectrum signals are highly resistant to narrowband interference. The process of re-collecting a spread signal spreads out the interfering signal, causing it to recede into the background.
- Spread-spectrum signals are difficult to intercept. An FHSS signal simply appears as an increase in the background noise to a narrowband receiver. An eavesdropper would only be able to intercept the transmission if they knew the pseudorandom sequence.
- Spread-spectrum transmissions can share a frequency band with many types of conventional transmissions with minimal interference. The spread-spectrum signals add minimal noise to the narrow-frequency communications, and vice versa. As a result, bandwidth can be utilized more efficiently.

Basic algorithm. Typically, the initiation of an FHSS communication is as follows [2]:

1) The initiating party sends a request via a predefined frequency or control channel.
2) The receiving party sends a number, known as a seed.

3) The initiating party uses the number as a variable in a predefined algorithm, which calculates the sequence of frequencies that must be used. Most often the period of the frequency change is predefined, as to allow a singlebase station to serve multiple connections.

4) The initiating party sends a synchronization signal via the first frequency in the calculated sequence, thus acknowledging to the receiving party it has correctly calculated the sequence.

5) The communication begins, and both the receiving and the sending party change their frequencies along the calculated order, starting at the same point in time.

6) In some uses, most often military, a predefined frequency-hopping sequence is negotiated, and after completing the first step the procedure is continued from number 5.

Military use. Spread-spectrum signals are highly resistant to deliberate jamming, unless the adversary has knowledge of the spreading characteristics. Military radios use cryptographic techniques to generate the channel sequence under the control of a secret Transmission Security Key (TRANSEC) that the sender and receiver share.

By itself, frequency hopping provides only limited protection against eavesdropping and jamming. To get around this weakness most modern military frequency hopping radios often employ separate encryption devices such as the KY-57. U.S. military radios that use frequency hopping include HAVE QUICK and SINCGARS.

Technical considerations. The overall bandwidth required for frequency hopping is much wider than that required to transmit the sameinformation using only one carrier frequency. However, because transmission occurs only on a small portion of this bandwidth at any given time, the effective interference bandwidth is really the same. Whilst providing no extra protection against wideband thermal noise, the frequency-hopping approach does reduce the degradation caused by narrowband interferers [4].

One of the challenges of frequency-hopping systems is to synchronize the transmitter and receiver. One approach is to have a guarantee that the transmitter will use all the channels in a fixed period of time. The receiver can then find the transmitter by picking a random channel and listening for valid data on that channel. The transmitter's data is identified by a special sequence of data that is unlikely to occur over the segment of data for this channel and the segment can have a checksum for integrity and further identification. The transmitter and receiver can use fixed tables of channel sequences so that once synchronized they can maintain communication by following the table. On each channel segment, the transmitter can send its current location in the table.

In the US, FCC part 15 on unlicensed system in the 900MHz and 2.4GHz bands permits more power than non-spread spectrum systems. Both frequency hopping and direct sequence systems can transmit at 1 Watt. The limit is increased from 1 milliwatt to 1 watt or a thousand times increase. The Federal Communications Commission (FCC) prescribes a minimum number of channels and a maximum dwell time for each channel[3].

Conclusion. FHSS technology can be used in many fields. In a real multipoint radio system, space allows multiple transmissions on the same frequency to be possible using multiple radios in a geographic area. This creates the possibility of system data rates that are higher than the Shannon limit for a single channel. Spread spectrum systems do not violate the Shannon limit. Spread spectrum systems rely on excess signal to noise ratios for sharing of spectrum. This property is also seen in MIMO and DSSSsystems. Beam steering and directional antennas also facilitate increased system performance by providing isolation between remote radios.

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FEATURES OF DATA PROTECTION COMPLEX “MERCURY” FOR USB MEMORY STICK

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Nowadays data theft has become one of the most serious threats to information safety – prevention of data theft and unauthorized access to it is seen to be the problems of a national significance. [1] Annual reports of the world largest companies show that the size of the problem is enormous. In 2009, the system IDS (Intrusion Detection System), which is part of Kaspersky Internet Security, reflected 219,899,678 network attacks. Similar parameter in 2008 was slightly more than 30 million incidents [1 − 3].

Even little data leaks can undermine confidence, cause financial harm, or even bankrupt the company. In connection with this, to a data protection on USB memory stick is given special attention, as it is this category of carriers most prone to leaks (loss, theft). There are many different ways to achieve this goal, but one of the most reliable is the U3 technology - standard of formatting and partitioning of flash drives USB [4]. It is proposed to divide flash drive into two sectors, one of which appears to the operating system as the CD-ROM, and another - as an ordinary USB flash drive. Also, in contrast to usual standard flash drives, U3 is not fully compatible with the programs of terminal access (mstsc, rdesktop, citrix ICA) because the virtual CD-ROM is not available by the remote access [1, 4–6]. This makes it even more resistant to attacks thought remote access protocols.

In other words, U3 technology allows you to protect the integrity of the program code on disk physically, without the chance of unauthorized modification. This standard allows the creation of software and hardware system that is resistant to attack by malicious software aiming to change the code and get unauthorized access to data. This technology was choosed as the most secure and reliable hardware platform for soft- and hardware storage complex "Mercury" where data on the flash drive is protected through encryption form. This tool allow to read and write data without thinking about how and when it was encrypted, which means savings of time while working with classified documents.

Material and methods. The most well-known, simple and common way to protect your data on removable data carrier is encryption of individual files or folders. This method is very simple in implementation and in use, but an obvious disadvantage of this approach is that in case of a sudden threat it is impossible to encrypt the file. In addition, if we are talking about encrypting of archives, the data can get into temporary storage without the owner's knowledge, which creates a potential threat to their leak.

There are several innovative approaches for data protection on USB memory stick. One of them is when data on the device is always stored in encrypted form and being decoded only partly when read and write inquiries at the file system driver level. The downside of this approach is platform dependent code, which includes all subtleties of the system architecture and driver model. An undoubted plus is possibility to keep your data in an encrypted form always, even at time of direct work with them.

The second equally important approach to protect encrypted data from unauthorized access is the improvement of the previous method, namely, the part of the key can be stored in the boot sector and on a particular set of keystrokes to be deleted. This approach eliminates the possibility of decrypting the data, even if the cryptanalysts had access to the user’s part of the key.

There is another unusual approach to protect information on mobile carrier. The essence of the method is that USB drive is being divided on two parts, ciphered by the different keys, and accordingly two passwords from them, and one password-command for removing all data. And, if user did not have possibility to delete data, he can enter a password from other part of disk and show data that can be accepted as hidden one. And in case if cryptanalysts guessed what you did, it is possible to enter a password-command for full elimination of data on a disk.

Results and discussion. During the work, we have developed a software tool for soft- and hardware storage complex "Mercury". Stored on a mobile data carrier information is protected by encryption according to a GOST 28147. Decryption of information is made after reading the encrypted information into computer memory. Encoding of information is made before writing information to a flash drive. Encryption keys are generated from the password entered by the user and the constants stored in sector 1 of disk**.**

Basic functional features:

- Authentication of entities registered in the soft- and hardware storage complex "Mercury" by password;
- Change the key information in case of discrediting of key;
- Protecting the integrity of information by placing it in the read-only region;
- Ensuring the confidentiality of user data by encrypting under GOST 28147-89 in the area available for reading and writing;
- Integrity monitoring and periodic testing of the soft- and hardware storage complex "Mercury";
- Storage of user keys out of file system (16 areas on 64kBayt) with the organization of access to them through a special software interface;
- Logging of user actions;
- The enabling of restrictions on the execution of the program by using "Mercury";
- Emergency destruction of stored information.

In the soft - and hardware storage complex "Mercury" during allocation of memory only physical memory is used. This blocks the hit of critical session into the swap file. Additionally tuning of environment sleep mode and tools of creation of debugging memory dumps are blocked, a swap file is retuned on the in cipher area of USB drive, and remaining information of files is saved in ciphered area of memory stick.

Conclusion. This software tool is reduces the costs of information security, namely, to get rid of security equipment (safes, electronic locks), shorten time of cooperation of human-computer interaction for information security that partially relieve working time. In addition, the use of the log significantly simplifies the work of the investigating authorities at the event of a precedent.

Software tool is adapted to newest software and hardware base: technology U3 is used, the algorithms of block encryption in programmatic realization are adapted to the operations with 64-bit numbers, and a key volume corresponds to the modern methods and tools of decrypting of the encrypted messages and also satisfies the users on speed characteristics.

As a target operating system family of Windows was chosen, because in general all programs of Windows family are accounted for 93% of the operating systems market. [7] Simple and the intuitive interface makes it available for use by anyone, not even having a primary computer skills.

Thus, the developed soft - and hardware storage complex "Mercury" is not only modern and reliable tool, but also easy and comfortable to use way to protect and store your information.

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NEW TECHNOLOGIES AND EQUIPMENT FOR INDUSTRY AND AGRICULTURE

FLEXIBLE FIRE-RESISTANT ELECTROMAGNETIC RADIATION SHIELDS

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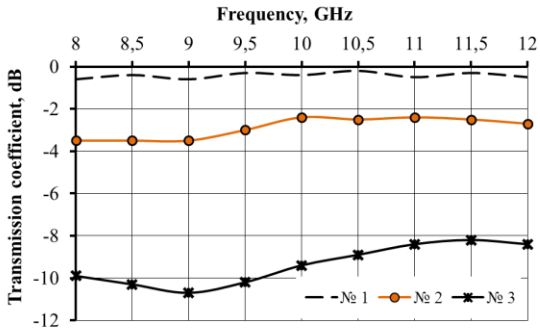
Nowadays, there is a number of fire safety requirements to be satisfied by construction materials and electromagnetic radiation shields, which are used for designing of special-purpose shielded premises. A coating of the carbon-containing paint on a cellulose substrate subjected to an open flame with a temperature of 1700ºC for 3 min and 40 sec was investigated in paper [1]. The result is the insulating foam layer formed with no mechanical damage of the substrate.

The purpose of this work is research electromagnetic interference reflection and attenuation characteristics of carbon-containing paints deposited on kevlar®. The kevlar® is a high strength and elastic fabrics made of synthetic fibers. It has high tensile strength (360 kgf/mm^2), low thermal shrinkage, resistance to external damage, self-extinguishing [2].The kevlar® is widely used for military, construction, aviation, apparel industries and etc. It is also mixed with other materials for creations composite material.

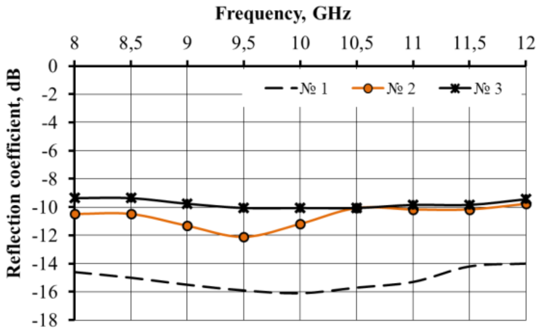
Material and methods. Samples of electromagnetic shields were created. It consists of two layers. The first one is kevlar®, which was covered by the second layer (fire-resistant carbon-containing paint). The fire-resistant painting without additives was used for creation the sample № 1. For the sample № 2 fire-resistant painting with powder schungite was used. The powder carbon black was used for the sample № 3. The schungite is a mineral with multilayer carbon fullerene globules with a diameter of 10–30 nm. Due to the high conductivity of shungite it is capable to attenuate the electromagnetic radiation. Carbon black is a highly dispersed carbonaceous matter. It is obtained by partial combustion or thermal decomposition of hydrocarbons. Carbon black has disoriented structure of the particles, organophilic their surface, wide range of sizes of the primary particles and aggregates, diversity of particle distribution, the ability to form a secondary spatial structure.

The shielding effectiveness of the samples was measured for the frequency range of 8… 12 GHz with the use of the panoramic attenuation and voltage standing wave ratio meter YA2R-67-61 with a sweep generator and waveguides. Then the reflection and transmission coefficients were calculated according to the method which is presented in [1]. The results of measurements and calculations are shown in figure.

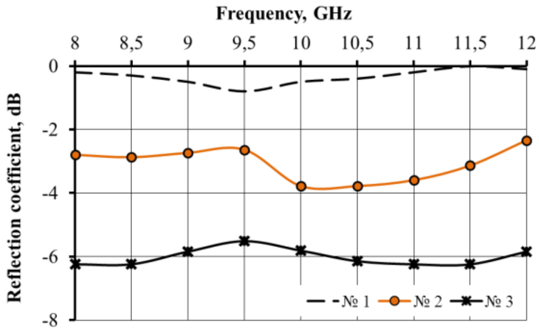
Results and discussion. Sample № 2 based on schungite-containing painting has transmission coefficient in range –2.4… –3.5 dB. Range of transmission coefficient for sample № 3 (painting with carbon black) is –8.2… –10.7 dB. For sample № 1 range of transmission coefficient is –0.2… –0.6 dB. Reflection coefficient, measured in the load mode, has range –14… –16.1 dB for sample № 1. Reflection coefficients for sample № 1, measured in short circuit mode, are –0.01… –0.8 дБ dB. Reflection coefficient, measured in the load mode, for sample № 2 varies in range –2.3… –3.7 dB. Reflection coefficient is –5.5… –6.2 dB for sample № 3.



a



b



c

Figure – Frequency dependence of the electromagnetic transmission (a), reflection, measured in the load mode (b), reflection coefficients, measured in short circuit mode (c), in the range of 8... 12 GHz

Conclusion. By results of research it was determined that the sample with kevlar covered fire-resistant carbon-containing painting has shielding properties. Attenuates electromagnetic radiation is a 3.5 times, reflection coefficient has range –5.5… –6.2 dB. It is planned to create electromagnetic shields based on kevlar covered fire-resistant carbon-containing painting and research this shields in wide frequency range, check fire-resistant properties by an open flame with a temperature of 1700ºC.

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INFLUENCE OF COPPER'S CHEMICAL DEPOSITION FROM WATER SOLUTIONS ON THE SPECTRAL AND POLARIZATION PROPERTIES OF POWDERED IRON PRODUCTION WASTES

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To reduce the contrast in brightness and polarization of ground objects (buildings, equipment etc.) it's might be used the constructions of spectral polarization simulators of natural environments. There are applied the powdered materials during the formation of such simulators in some cases. These materials allows by adjusting the size of their factions, as well as the content to change spectral and polarization properties of formed natural environment simulators.

The results of investigation of coppers's chemical deposition from water solutions on the values of the spectral brightness coefficients (SBC) and polarization degree (PD) of powdered iron production waste (PIPW) with fraction sizes of 5, 20 and 30 microns are presented in this paper.

Material and methods. Chemical deposition of copper clusters on the surface of PIPW was performed from the solution which comprised of potassium sodium tartrate, copper sulphate (hydrated), caustic soda. It was a formalin as a reducing agent. Powdered PIPW was kept in this solution, and then it was washed and dried. It was carried out the stabilization of the deposited copper clusters on the surface of PIPW fractions after that.

The measurements of the SB and PD values were carried in the wavelength range of 400…1000 nm. It was used goniometer setup, which includes spectral radiometer. The measurements were realized with method described in article [1, p. 19]. The angle of electromagnetic radiation incidence was 45 degree. The angles of viewing were 0, 25, 45 and 65 degrees with respect to the PIPW samples surfaces.

Results and discussion. It was established that the SBC values of PIPW with fractions size of 5 microns are 0.11…0.33 depending to the angle of viewing. For PIPW with fractions size of 20 and 30 microns the SBC values are 0.02…0.08. Similar SBC values for RIPW with fractions size of 20 and

30 microns due to the composition of these particulate materials. SP values for RIPW with fraction sizes of 5, 20 and 30 microns are equaled to 0.01…0.1 depending to the angle of viewing.

It was shown that the chemical deposition of copper clusters from the water solution onto the PIPW surface with fractions size of 5 microns led to the reduction of SBC values by 3…10 %. Forming of copper clusters on PIPW surface with fractions size of 20 and 30 micron led to the increasing of SBC values of these powdered materials on 15…20 %. Chemical deposition of copper from the water solution on the RIPW surface with fraction sizes of 5, 20 and 30 microns led to the increasing of them PD value in an average of 10 %.

Conclusion. It’s might be made spectrally polarization imitators of natural environments (different kinds of peat (fen or upland), sand, dry vegetation, etc.) with utilization of RIPW. The process of such simulators making will be connected with consolidation of RIPW particles on special substrates with utilization of the transparent adhesive. The material of these substrates will be determined by the requirements of the mechanical properties of manufactured simulators (textiles, cellulose, plastics, etc.).

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VERTICAL FARMING – A NEW AGRICULTURAL TECHNOLOGY

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In a world where 870 million people go to bed hungry every night , 1.4 billion people are overweight , arable land, fresh water and fertilizers are scarce. It is clear that something needs to be done. People are destroying biodiversity and environment at the cost of mass-producing monocultures with unsustainable agricultural methods. The general public takes it for granted that food is transported half way around the world before it reaches the plate. By growing food within cities at the doorstep of the consumers we eliminate the need for transport, therefore reducing greenhouse gas emissions and food-waste.

Material and methods. The methods which were used are reading, analysis, synthesis and comparison. In this work we used a number of recently published articles from such journals as Science, New Scientist and others.

Results and discussion. According to the FAO approximately 1/3 of produced food in the world is wasted at different stages of the food chain. This amounts to 1.3 billion tons annually. Another severe problem is the unbelievable amount of fresh water agriculture is withdrawing – it amounts to 70% of used water annually. By providing locally grown food to local communities Vertical Farms offer a fresher, cleaner, highly nutritious product grown at the doorstep of the consumer.

Vertical Farming can be described as Controlled Environment Agriculture (CEA) or in other words Building Integrated Agriculture (BIA) using artificial lighting in multi-levelled systems. Basically high tech greenhouses stacked on top of each other.

One of the many advantages of cultivating food in multi-levelled systems within or around cities is the reduced transport need and therefore the reduced greenhouse gas emissions. Another important advantage is that no additional arable land is needed, which is already scarce and depleted. Instead of having a long food chain from farm, to harvest, to processing, to transport, to retail etc.; Vertical Farms offer a two-step chain.

The technology can be used to make farmers in developing countries independent of climatic restrictions, pests and diseases.

Benefits of Vertical Farming:

– Growing food at the doorstep of consumers (in cities/homes)
– Access to fresh, highly nutritious and local food
– 98% less water needed
– 70% less fertilizers needed

– Faster growth rates
– Higher yields per square meter
– No pesticides needed
– No runoff of fertilizers or water due to closed system
– No negative impact on biodiversity and the environment
– No arable land needed due to soil-less cultivation
– Less surface needed due to vertical growing
– Theoretically energy self-sufficient (therefore reduced carbon footprint)
– No seasonal, regional or climatic restrictions due to closed system
– No food waste in distribution chain

The wealthy island city of Singapore with an area of 710 square km and a population of 5 million, is one of the most densely populated cities in the world. With most parts of the island's land utilized for urban development, the remaining 250 acres of farmland is hardly sufficient to feed the growing population. As a consequence, more than 90 percent of Singapore's food consumption is met by imports from over 30 countries. This dependency on the external world makes the country highly vulnerable to turbulence in food supply and prices.

The only way out of this problem is to maximize the use of land for food production. For the island of Singapore, where real estate is at a premium and the land rates are exceptionally high, the only viable option is to go vertical to make the island more self-sufficient in food.

Managing Director of DJ Engineering has set up a company, Sky Greens, to produce the vegetables commercially and sell the technology to other countries. He came up with this idea during the financial crunch in 2009. It took him two years to develop the idea.

It is the first low carbon hydraulic water-driven vertical system in the world to grow tropical-vegetables vertically in the tropics, which gives significant yield and uses less water, energy and natural resources, to achieve a sustainable green high-tech farm.

This vertical farming system, called "A-Go-Gro" technology, grows vegetables in A-shaped towers, each of six meters tall. These modular A-frames are quick to install and easy to maintain.

Sky Greens' venture is supported by the Singaporean government and has another advantage over other urban farms around the world: abundant natural heating and light.

Sky Greens stringently adopts green technologies to achieve the 3R (reduce, reuse and recycle). This also helps to achieve sustainability for the good of the environment and to grow safe, high quality and fresh vegetables for consumers.

In March, the world's largest vertical farm is set to open up shop in Scranton. Built by Green Spirit Farms (GSF) of New Buffalo, Michigan, it will only be a single storey covering 3.25 hectares, but with racks stacked six high it will house 17 million plants.

It's still up for debate whether vertical farms are more efficient at producing food than traditional greenhouses.

Sky Greens' vertical farm seems to answer some of these doubts and apprehensions. It still needs to be seen whether, apart from leafy vegetables, they can also grow other vegetables, such as tomato, beans, potato, carrot, etc., or commercial crops like rice, wheat, etc., economically.

A grey warehouse in an industrial park in Indiana is an unlikely place to find the future of market gardening. But it is, nevertheless, home to a pristine, climate-controlled room full of eerily perfect plants. They grow 22 hours a day, 365 days a year in 25-foot towers, untouched by pests and bathed in an alien pink light.

Critical to this $2.5m techno-Eden, run by a firm called Green Sense Farms, are the thousands of blue and red light-emitting diodes (LEDs) supplied by Philips, a Dutch technology firm. The light they give off is of precisely the wavelength craved by the crops grown here, which include lettuce, kale, basil and chives.

The idea of abandoning the sun's light for the artificial sort is not new. It offers plenty of advantages: no need to worry about seasons or the weather, for instance, not to mention the ability to grow around the clock (although a couple of hours a day are necessary for the plant equivalent of sleep). However, LEDs offer a host of benefits over traditional, fluorescent growing lights. The crops grow faster, too. Philips reckons that using LED lights in this sort of controlled, indoor environment could cut growing cycles by up to half compared with traditional farming. That could help meet demand for what was once impossible: fresh, locally grown produce, all year round. LEDs are becoming cheaper all the time, and the involvement of Philips, which has invested heavily in the technology, suggests that costs can fall further.

Conclusion. The concept of vertical farming has been on the design table for a long time. Big think tanks have thought about it, conceptualized it, designed it, have gone through all the advantages and disadvantages, but none have been able to bring it into reality. Until now, implementing these "farmscrapers" on a commercial scale has been a challenge and making them economically viable has been a daunting task. Requirements such as, pollination in an insect-free environment, controlling the environment within the buildings with regards to lighting, temperature, arrangement of plants, etc, make food production in a vertical farm a very expensive affair.

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NEW TECHNOLOGIES IN LAND IMPROVEMENT

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Land improvement on the territory of the Republic of Belarus has been practiced for more than 100 years. The first tile drainage was laid by Kozlovsky, professor of Gory-Goretzky institute. All-round land melioration began only under the USSR. And the advanced for that time technologies began to be used.

At that moment, the meliorative practice uses a considerable number of various constructions with individual technology for each. With the development of new construction materials, technologies and appearance of constructions has changed a little. At present, it is the most actual theme in land improvement science.

The main aim of the article is to show main advantages of utilisation of modern construction materials in the construction of main meliorative constructions.

Material and methods. The major problem of land melioration is a multitude of various construction technologies of the main meliorative constructions and materials used.

Results and discussion. For a long time ceramic drainage has been used in drainage melioration. The essence of the drainage is that ceramic tiles 333 mlm long are laid down into the ground at the certain depth. To ease the process of such drainage special machines were developed. The main problem in such case were strict rules concerning drainage laying and are labour consuming as every drain are to be laid according to certain rules.

Ceramic drains were followed by polyethylene drains. The main advantage of this type of drains is that a tube is longer (from 50 to 150 m) and it is technologically insulated at the plant along the whole length. The introduction of polyethylene drains reduced labor efforts as it eliminated the necessity to lay drains manually. Besides, it resulted in the improvement of drainage quality, its longevity. And appeared the possibility of applying less expensive methods of drainage laying which couldn't be done while applying ceramic drainage.

To connect drainage with the canal lightweight drainage outlet are used in land amelioration. Before the use of polyethylene drains, drainage outlet were made from asbestos cement tubes which were fragile, heavy and required a lot of labor and construction materials while laying down the tubes.

Instead of asbestos cement tubes light drainage outlet from polyethylene tubes began to be used. The main advantage in this case is a lighter construction, less labor and money is required in comparison with asbestos cement drainage outlet.

One more major structure which is used in ameliorative construction is a well-absorber. It is used for ground water disposal. A well structure is a set of several concrete rings of 1-1.5 m in diameter dug in the ground. Drainage tubes are attached to the lower ring. Before the polyethylene drainage appeared one well construction required enormous labor efforts and a whole range of special machines.

With the introduction of polyethylene drainage the process of well construction became much quicker because it didn't require numerous concrete rings. The structure in this case consists of a polyethylene tube dug vertically into the ground, and drains are attached to it through special connections.

Besides drainage amelioration, Belarus uses irrigation amelioration.

The problem of the latter was connected with the construction design. The pipeline supplying water for irrigation was buried in the ground and during its exploitation, it was gradually ruined. It resulted in regular breaks and big expenses connected with the repair. Besides, it was necessary to force out water of the pipeline during winter.

Metal pipelines were changed by light portable pipelines, quick to assemble. With their appearance there was no need in burying them underground as it was easy to assemble them and to stretch to the place of irrigation. The application of such pipelines considerably decreased labor necessary to repair the pipeline, and there is no need to rid them of water inside any more.

Conclusion. Amelioration development and the appearance of new materials made possible to develop new methods in the construction of major ameliorative structures. These developments resulted in considerable labor saving, reduce costs and the quantity of construction materials used.

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SPECIFICS OF VENTILATION SCHEME OF BIG LENGTH BLIND DRIFT

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Ventilation characteristics research of blind drifts contributes to increasing safety in their construction. A necessity for science-based methods developing of calculation the air quantity not only for face space (working area) ventilation, but also for extended blind drifts ventilation is the main objective. These methods must have the practice value. They should allow getting the reliable results without a large number of basic data and complicated calculation. In the blind drifts should not be increased or decreased aerate because this can greatly affect on the mining safety.

Material and methods. A number of works of many scientists: Abramovich G.N., Komarov V.B., Kirin B.F., Kolesnichenko E.A, Scochinsky A.A., Ushakov K.Z. [1-6] and est. are devoted to analysis of air flows distribution theory and blind drifts ventilation.

Large length drifts are conventionally considered such drifts, which can be aerated with either several ventilators or pipe work systems and ventilation structures. The complexity of the ventilation of long blind drifts is caused by considerable air-flow resistance of whole ventilation system and large air wastage from pipelines. Wrong considerations of these features lead to the incorrect definition of the design condition of ventilator operation in which the effective ventilation of the usual schemes and facilities is impractical or impossible.

From the viewpoint of industrial safety the most important significance of this problem has in coal-bearing formations development. In these formations the basic requirements are demanded on ventilation of blind drifts schemes. According to the requirements of the safety regulations, aeration by pressure method is used.

Ventilation schemes and methods for blind drifts must provide: mining safety by ensuring at any point of mine permissible concentrations of harmful, explosive and radioactive gases; manageability of ventilation in normal and emergency situations.

Ventilation schemes of blind drifts are classified depending on the source and ventilation method, as well as on the number and arrangement of mines (air tubes), in which fresh air is delivered and air pollution is discharged. The main indicators of schemes are: the source and method of ventilation, the amount of air supply and air outlet mines (air tubes) and also their configuration.

Results and discussion. For ventilation of big length blind drifts it can be used the following scheme.

1. Airing by one ventilator operating at a pipeline of large diameter (up to 2.5 m) or two parallel pipelines. These schemes are used for large cross-section area of mines.

2. Cascade airing by several ventilators positioned in series at the beginning of the pipeline at the mouth of mine workings. This scheme is used for mine airing in gas rocks because of the lack recirculation. It is recommended to use no more than three ventilators with the same aerodynamic characteristics, otherwise it becomes difficult to control the ventilators. To avoid pressure loss, that caused by streams spinning in ventilators, they must be in a section of pipe length not less than 10 diameters. The initial part of the pipeline is under pressure, that equal to the sum of all ventilators pressure, that requires the application of flexible pipelines with high resistance to tearing. It is considered, that the advantage of this scheme is safety and serviceability of all ventilators on a fresh air stream.

3. Aeration by ventilators dispersed along the length of the pipeline. Using a spaced system of ventilator setting (in comparison with a cascade system) allows dividing the depression along the pipeline more regularly. It makes possible to use the flexible pipes so air leakage can reduce. Reliability of ventilation schemes with spaced system of ventilator setting is ensured by the fact that higher pressure is provided all along pipes than in mines. It is achieved by correct selection of distances between the ventilators so that the pressure in the suction tube of each subsequent ventilator is varied within the range of 0-20% of the pressure developed by the previous ventilator in the discharge tube. If this condition is broken by increasing the distance, in the suction tube of the ventilator occurs discharging that leads to recirculation of contaminated air and it determines necessity to increase ventilators capacity. This ventilation scheme is more preferable than the cascade scheme when it is aerated mine with a length exceeding 2,500 meters, and it is necessary to fan significant amount of air into the working face. This scheme can be used only if there is no gas emission in mine.

The spaced system of ventilator setting can be used for exhaust ventilation. For this purpose the first ventilator is positioned close to working face with ability to fan from mine into air tube and the remaining ventilators are distributed along the pipeline.

4. Aeration by ventilators located in the lock chamber. When there is aeration by ventilators located in the lock chamber, air goes from pipeline of previous ventilator to specially mined chamber in which the subsequent ventilator is installed, that fans air to the working face. All other things being equal depression and air leakage for this ventilation scheme is less than for the cascade and dispersed schemes of ventilator setting. The scheme can be used with diesel engines of self-moving equipment that requires significant amounts of air in mine.

5. Aeration by transverse ventilation scheme where fresh air fans along mine by one air tube, and polluted air is removed through another tube. There are windows for distribution and collection of air in the discharge and suction tubes. Their location may be dispersed along the pipeline or concentrated in areas that supply air demand (e.g., in parking areas or turnout of equipment). To solve this problem, the pipeline with slit of variable width or perforation is selected, that provides equal delivery and discharge air at a given length. The end of the air tube at the same time is capped or is used to supply air to the working face.

6. Ventilation of paired mines, which are connected by boards or cuttings (drifts, apex, biases of large extent). Boards, except the last, are closed by air closed barricades. In gas mines where it is necessary to supply large quantity of air, extended part ventilation of air supply mine is carried by whole mine depression, and local ventilators supply dead ends from the last board.

Ventilation schemes in additional means of ventilation are divided into three groups: traditional via pipelines; using ventilation structures; using assisting mines and wells.

Ventilation methods using ventilators are divided into discharge, suction and combined.

The ventilation mechanism of the discharge method includes hazards reduction in the working area by free jet from a ventilation pipe to acceptable values and subsequent removal to passing air jet. The main characteristic, used in the effectiveness assessment of the ventilation mechanism, is a free jet range.

The process of suction ventilation mechanism includes hazards removal from working area through by vent line and the subsequent removal to mine, ventilated by passing air jet. The main feature of this process is hazards removal with the same speed from all directions towards the end of the pipeline and the limited size of the suction plume zone.

Dynamics of combined method ventilation strongly depends on the schemes of air supply and removal from the working area, and combines the features typical for discharge and suction methods.

Conclusion. The main directions to improve blind drift ventilation are:

1. Development of new dust and explosionproof ventilators with the best characteristics and low noise and vibration, the optimization of work parameters. For example, there are ventilators with an external motor, composite materials using, optimization of the blades angle and the rotational speed of the impeller.

2. The usage of new materials for the ventilation pipes with lightweight, durability and reliability in operation, more perfect performance.

3. Integration of equipment for blind workings ventilation with the information-measuring systems structure for all production processes managing.

4. Unification of manufactured ventilation equipment.

5. Automation of combined ventilation methods.

6. Development of a fundamentally new ventilation ways and facilities for blind workings. They are included ventilation methods by a pulse pressure generator and ventilation with divide walls.

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DETERMINATION OF ANTIOXIDANT VITAMINS IN VEGETABLE OILS

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Fat-soluble vitamins are retinol and carotenoids (vitamins A), calciferol (vitamins D), tocopherols (vitamin E), filohinony (vitamins K). The fat-soluble vitamins are insoluble in water but soluble in organic solvents. They are thermostable and steady to pH change. A particular feature of all fat soluble vitamins is their ability to be absorbed in the intestines only in the presence of fat, but also sometimes to be accumulated in the body in large quantities, causing hypervitaminosis. Fat-soluble vitamins perform several functions: contribute formation, growth and development of embryos, formation and regeneration of bone and epithelial tissues, blood clotting[1, p.35].

The purpose of the research is to compare the content of fat-soluble vitamins in wheat germ oil, cottonseed oil, soybean oil, corn oil, sunflower oil brand "Idealnoe", sunflower oil brand "Oleina", sunflower oil brand "Golden seed", palm oil, grape seed oil, olive oil, rapeseed oil, mustard oil.

The urgency of the research. The modern concept of a healthy diet is based on the concept of high biological role of vegetable oils, which are the essential nutritional factors. In this regard, studies on the biochemical rationale of vegetable oils vitamin content are relevant and have a theoretical value for biochemistry of lipids and applied to food chemistry [2, p.65].

Material and methods. Quantitative determination of vitamins A and E in vegetable oils.

To pour 0,5 ml of vegetable oil in a tube, a solution of 1.5 ml of ethanol and 1 ml of hexane. We are to close vial and begin stirring contents carefully shaking it. Too intense stirring is not necessary since it will lead to the formation of a stable emulsion which will degrade for several days. If the emulsion is formed, the mixture can be centrifuged for better delaminationof phases.

After mixing, the tube is to be left for a few minutes at rest until complete separation of phases occurs. Before you proceed with the selection required for the subsequent analysis phase, it is necessary to find out which of the 2 phases is organic - the bottom or the top one. After the position of the desired phase is determined, the next step is to select a sample for analysis. However, the selected sample may be cloudy or contain alien droplet phase. To eliminate these unwanted effects the sample should be filtered through a paper filter. Determination of vitamins A and E was performed on the analyzer "Fluorat."

Calibration of "Fluorat" device was performed by measuring the fluorescence signals of the prepared solutions. Stability control of calibration curve implies measurements of the concentration of vitamins in several mixtures.

Fluorometric method for measuring the content of organic and inorganic substances in the range of 250-900 nm is in the basis of the device. For analysis the cuvette 10x20 mm is used [3, p. 155].

Results and discussion. According to the content of vitamin A, studied vegetable oil were distributed in the following order: palm oil > wheat germ oil > grape seed oil > soybean oil > sunflower oil brand "Oleina" > sunflower oil brand "Golden seed" > corn oil > rapeseed oil > sunflower oil mark "Idealnoe" > mustard oil > olive oil > cottonseed oil.

According to the content of vitamin E, studied vegetable oil were distributed in the following order: wheat germ oil > cottonseed oil > soybean oil > corn oil > sunflower oil brand "Idealnoe" > sunflower oil brand "Oleina" > sunflower oil brand "Golden seed" > palm oil > grape seed oil > olive oil > rapeseed > mustard oil.

If we estimate the balance of the vitamin content of oils we get the following order (from max to min respectively): the first place is wheat germ oil, then is soybean oil, sunflower oil brand "Oleina", sunflower oil brand "Golden seed", corn oil, sunflower oil brand "Idealnoe". Large differences in the content of fat-soluble vitamins are characteristics of cottonseed oil, palm oil, grape seed oil.

Table of vitamin A contents in oils

Type of oil	**M ± m (oils are stored at t = 20^{0}C, p = 1atm)**	**M ± m (oils are stored in a dark place)**	**M ± m (oils are exposed to light and air oxygen)**
Sunflower oil brand "Idealnoe"	0,0003 ± 0,00013	0,0003 ± 0,00013	0,0001 ± 0,00011
Sunflower oil brand "Golden seed"	0,0009 ± 0,00031	0,0005 ± 0,00017	0,0004 ± 0,00010
Sunflower oil brand "Oleina"	0,0012 ± 0,00049	0,0012 ± 0,00044	0,0005 ± 0,00017
Olive oil	0,00015 ± 0,0001	0,00014 ± 0,0001	0,000090 ± 0,0001
Rapeseed oil	0,0005 ± 0,00022	0,0005 ± 0,00022	0,0003 ± 0,00022
Palm oil	0,0055 ± 0,00193	0,0054 ± 0,00189	0,0015 ± 0,0013
Grapeseed oil	0,0015 ± 0,0006	0,0015 ± 0,0006	0,0008 ± 0,00011
Soybean oil	0,0014 ± 0,0006	0,0012 ± 0,00067	0,0005 ± 0,00017
Corn oil	0,0007 ± 0,00014	0,0007 ± 0,00017	0,0004 ± 0,00024
Wheat germ oil	0,0018 ± 0,00053	0,0015 ± 0,00036	0,0003 ± 0,00012
Cottonseed oil	0,0001 ± 0,00022	0,0001 ± 0,00022	0,000085 ± 0,00022
Mustard oil	0,0003 ± 0,00012	0,0003 ± 0,00012	0,0002 ± 0,00012

Table of vitamin E contents in oils

Type of oil	**M ± m (oils are stored at t = 20^{0}C, p = 1atm)**	**M ± m (oils are stored in a dark place)**	**M ± m (the oils are exposed to light and air oxygen)**
Sunflower oil brand "Idealnoe"	0,85 ± 0,149	0,85 ± 0,149	0,60 ± 0,383
Sunflower oil brand "Golden seed"	0,75 ± 0,189	0,75 ± 0,189	0,45 ± 0,304
Sunflower oil brand "Oleina"	0,80 ± 0,071	0,80 ± 0,071	0,55 ± 0,035
Olive oil	0,15 ± 0,041	0,15 ± 0,041	0,10 ± 0,008
Rapeseed oil	0,09 ± 0,046	0,09 ± 0,046	0,07 ± 0,060
Palm oil	0,55 ± 0,089	0,54 ± 0,087	0,34 ± 0,0125
Grapeseed oil	0,48 ± 0,059	0,48 ± 0,059	0,30 ± 0,180
Soybean oil	1,12 ± 0,086	1,10 ± 0,126	0,85 ± 0,353
Corn oil	0,94 ± 0,127	0,94 ± 0,127	0,54 ± 0,463
Wheat germ oil	1,85 ± 0,116	1,80 ± 0,190	1,40 ± 0,365
Cottonseed oil	1,50 ± 0,181	1,45 ± 0,159	0,90 ± 0,573
Mustard oil	0,08 ± 0,046	0,06 ± 0,044	0,05 ± 0,056

Conclusion. Vitamins are vital organic compounds required for normal growth, development and life itself.

On the basis of the thesis the following conclusions can be drawn at:

- quantitative determination of the vitamins A and E is based on the fluorescence and can be mesured using "Flyuorat";
- it is necessary to mix various vegetable oils in order to create optimal ratio of fat-soluble vitamins A and E;
- the results obtained using the analyzer "Flyuorat" corresponds to the literature data [4, pp. 78-80].

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METHOD OF COMPREHENSIVE SURFACE HARDENING OF STEEL PRODUCTS

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One of the most important tasks of modern material science applied to technology issues is the need to ensure the surface properties of reinforcing products for over the tough conditions of their work. To solve this problem, it is now widely used methods for the application of protective coatings in the vacuum by physical vapor deposition on a protected surface to form compounds that are resistant to the destructive mechanical effects [1]. Obtained in this method coating provides high wear resistance, micro and nanohardness, but have a narrow area of practical application, because their operational properties are limited on load and efforts that can withstand the coating without punching. One of the promising ways to expand opportunities for the coatings is the use of complex methods of surface hardening involving preliminary hardening treatment of the substrate material and subsequent deposition of high hard coating [2].

The proposed method in this work relates to the field of functional coatings resistant to abrasion and fracture under load during operation and to methods of their preparation on the surface of steel products. This method can be used for hardening of precision machine parts and mechanisms, cutting tools, die tooling parts, bearings parts, parts of fuel equipment, also prospects in the fields of medicine and space applications where required high static load of surface in combination with a low friction coefficient and high corrosion resistance.

Material and methods. The developed method is based on a combination of two complementary hardening effects: Thermochemical treatment of the surface with followed application of nanostructured TiN coating by reactive magnetron sputtering.

As the pretreatment used a low temperature carburization in powder mixtures, which enhances the fatigue strength about 50-80%, a rapid increase of wear resistance as compared with the carburizing and nitriding. Obtained nitride and carbide phases on the surface, don`t show tendency to gripe and subsequent catastrophic wear even without lubricant.

As coating used titanium nitride coating, which is widespread, cheap and has a high level of tribological characteristics. The coating may be alloyed by aluminum.

The microhardness values of the samples obtained in the measurement of hardness indentation recovery method with a load on the indenter 0,09-0,98 N. Nanohardness values obtained in the processing of the loading and unloading curves obtained on the machine Nanoindenter G200 (MES Systems, USA) according to the method of Oliver-Pharr [3] using a triangular Berkovich`s diamond indenter with a radius of curvature at the vertex 20 nm, indentation of nanoindentor to a depth of 200-300 nm. Tribological tests were carried out according to the scheme of dry sliding friction "shaft - block", wear was determined by the amount of wear for 1 h at normal load of 0.1 N.

Results and discussion. The microhardness of the surface of the composite - 9-10 GPa. Nanohardness is 28-30 GPa. Modulus of elasticity - 750-770 GPa. Stiffness - 2.3-2.5 N / m. The strength of adhesion between coating and substrate samples provides full coverage of coating on trials at attention by Erichsen`s spherica hole. The coefficient of friction is 0.35.

These results are explained by the appearance in the samples reinforce, by the proposed method, the extended transition layer with gradually increasing hardness between the base material and coating, damping gradient their rigidity and prevents punching coating. Abd forming a transitional diffusion layer between the substrate and the coating, as consequently, the diffusion engagement of the coating on a metal substrate.

The set values of wear resistance (Table 1) suggest that the known disadvantages of PVD / CVD coating and the existing technologies to produce laminates composite from steel and nanostructured titanium nitride can be substantially eliminated by pretreating of substrate. The values of the tribological characteristics of such a laminates system are higher than compared to composites having as a base alloying structural steel or Nitralloy.

Table 1 – Results of wear resistance

Index of wear-resistance	Surface condition			
	Untreated	After thermochemical treatment	Coated TiN	After complex processing
Linear wear, um	1073,3	1010,7	698,2	520,5
Volumetric wear ($\times10^3$), um^3	1718,0	1435,0	474,2	194,9

A significant advantage of the proposed combined treatment is the ability to get away from the standard volume hardening treatment and finishing operation. The effective fields of use are: toolmaking, stamping production and technology of plastics, bearing manufacturing, machining and precision mechanics, weaving and textiles, general machinery parts.

Conclusions. Together with the collective of the Research Institute of Applied Physical Problems A.N. Sevchenko Belarusian State University led by F.F. Komarov developed a complex method of surface hardening of steel products using thermochemical treatment and vacuum ion-plasma technologies (applying high hard coating). The method allows to increase the microhardness up to 4,5–5,1 times, up to 4,1–7,0 times wear resistance and more than 2,5 times the corrosion resistance products of structural steels by forming on the surface the new composite material.

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FORMING ADHESIVE AND BARRIER COATINGS FOR FLEXIBLE DISPLAYS

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Thin oxide films deposited on polymer substrates by ion-beam sputtering are used in a broad variety of applications. The combination of polymer materials with functional and protective coatings offers a number of key advantages over alternative bulk materials, such as light weight, complex shape and design freedom, transparency or tailored optical characteristics, and also cost-effectiveness [1]. The past decades have seen a regular increase of the research effort to better understand such material systems and improve corresponding technology. In the past two decades, most of the research has been devoted to the physical and chemical analyses of the barrier system, which includes the characterization of the apparent permeability of the coated polymer with respect to the deposition process, and resulting coating and interface defect structure.

The importance of mechanical analyses of SiO_2 coated polymers, in terms of coating strength, internal stress state, and adhesion to the substrate, motivated additional research, although to a lesser extent than the above-mentioned physical and chemical analyses. Theses features are nevertheless among the most important coating/substrate properties, as depicted in Fig. 1 [2].

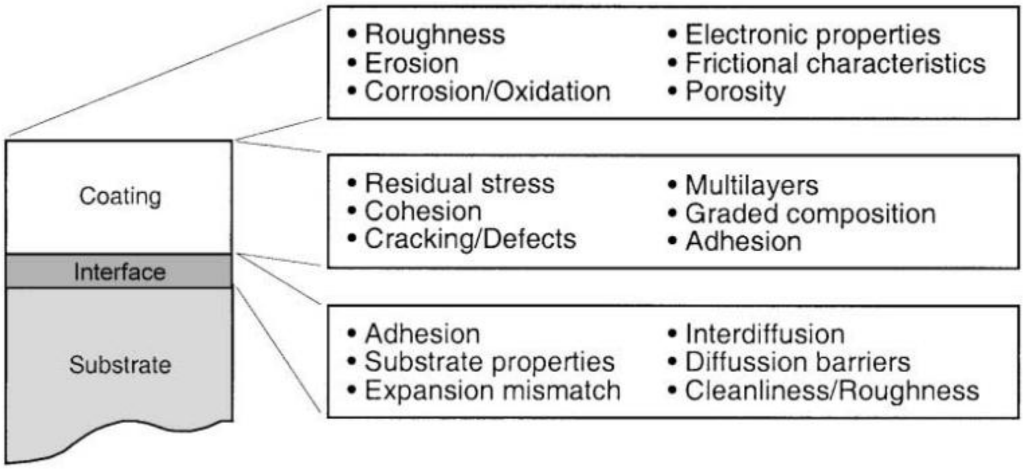


Fig. 1. Important coating/substrate properties for technological applications

The reliability of the barrier function is controlled by the cohesion of the brittle coating, and by its adhesion to the polymer, both being influenced by the process-induced internal stress state of the coated assembly. In gas-barrier coated polymers, and, more generally, in all the applications previously mentioned, the intrinsic resistance of the coating to thermal and mechanical loads, its thickness and its adhesion to the substrate are among the key characteristics to tailor for both performance and cost optimization. However, coatings with thickness down in the nanometer range are often associated with growth hetero geneities and high residual stresses generated during the deposition process. More over, during all the conversion processes usually encountered in the manufacture of the above-mentioned products, and during service, the thin, brittle oxide coating and coating/substrate assembly must resist externally-applied mechanical and hydrothermal loads [3].

The present review focuses on transparent silicon dioxide (SiO_2) thin coatings on polymer substrate of plastic Melinex for flexible displays.

Material and methods. For the forming of the barrier and adhesive coatings on flexible polymer substrates were used reactive ion-beam sputtering on evacuation chamber URM 3.279.017. Polycrystalline silicon used as a target. Flexible polymeric substrates of plastic Melinex used as the substrate material. Method of application of transverse incisions and method of separation of adhesive tape was used to determine adhesion.

Residual vacuum during deposition did not exceed (2,5–3,0)·10^{-5} mm Hg., partial pressure of oxygen – 2,5·10^{-4} mm Hg., the total pressure of working gas – 4,0·10^{-4} mm Hg., accelerating voltage – 3,0 kV, current of target – 55 mA. The layer thickness was 140–300 nm. The substrate temperature was no more than 40ºC. Cleaning the surface of the substrates was carried by ions of oxygen and air for 5 minutes before coating. SiO_2 film was deposited on a sample by ion bombardment during the initial 3 min layers growing coating.

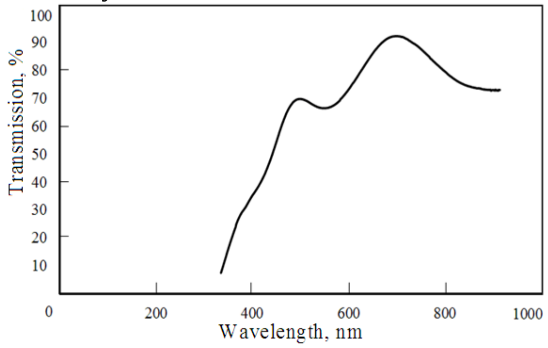
Results and discussion. The results are shown in table 1. As a result, the coatings possessed the highest possible adhesion to the polymer according to standard ASTM.

Table 1– Results of research of adhesive layers

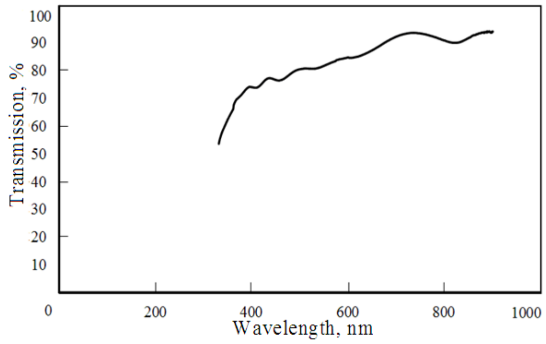
№ sample	U_c, kV	I_c, μA	U_b, kV	I_b, μA	Gas	d, nm	Adhesion (ASTM)
1	1,5	60	–	–	Oxygen	300	4B
2	1,5	60	–	–	Atmosphere	150	5B
3	1,5	120	–	–	Oxygen	220	5B
4	1,5	60	1,0	10	Oxygen	140	5B

Nickel film and ITO was deposited on a substrate coated with SiO_2 by ion-beam sputtering. These structures were successfully tested for peel adhesive tape.

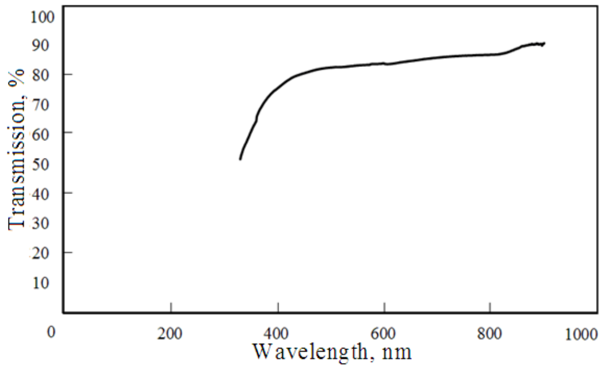
Also adhesion and barrier layers for flexible LC displays must have a high transparency in the visible range. Figure 2 shows the transmission spectra of the obtained sample of adhesive silicon dioxide layers.



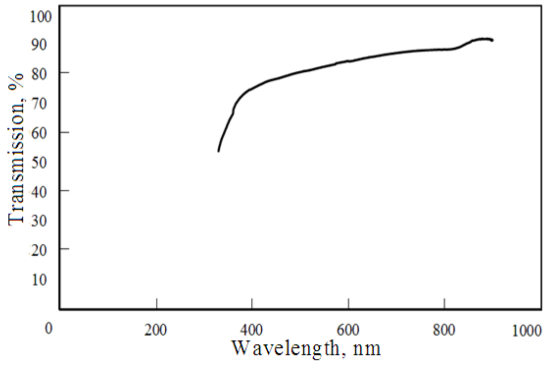
Sample 1



Sample 2



Sample 3



Sample 4

Fig.2. Transmission spectra of the samples of adhesive layers of silicon dioxide

It was understood that the optimal depth of layer should be in the range of 100...150 nm in order to ensure transmission of 80–90%.

Conclusion. Thus, the studies that have been conducted have shown promising reactive ion-beam sputtering to form the adhesive and barrier coatings on flexible displays.

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THE EFFICIENCY OF THE ENZYME SUPPLEMENT "ROVABIO EXCELL AP" IN INCREASING BROILER PRODUCTIVITY AT THE BRANCH OF "SERVOLUX AGRO"

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Poultry industry is growing rapidly now. Broiler chickens are raised for meat in great numbers. Only healthy and highly productive birds can be the source of high-quality food.

Under intensive poultry farming chickens' health largely depends on their feed. It consists primarily of grains and their derivatives. Some of the carbohydrates present in the feed are sparingly soluble compounds. It is known that about 1/3 of the organic matter coming from the feed is not digested by the body. Reducing these losses by only 1% provides a ton of additional poultry products. In this regard, priority is given to improving the efficiency of feed utilization.

The combination of enzymes that make up the "Excel Rovabio AP" effectively destroys the anti-nutritional components of the food. Subsequent release of the nutrients from the NSP-cellular matrix occurs in the cell walls. Therefore the objective of this experiment was to study the effect of feeding the enzyme package (Rovabio Excell AP) to broiler chickens on their weigh gain.

Material and methods. 1-day to 42-day old chickens of Cobb 500 (broiler hybrid) separated into an experimental and a control group were used for the experiment. No treatment was given to the control group while the diet of the experimental group was supplemented by the concentrated enzyme feed additive "Rovabio Excel AP". The two groups were otherwise kept under the same conditions. The average live weigh of 1-day old chicks in both groups was 45-48 g. Weigh gain measuments were taken at periodic intervals during the experiment. The control group provided the baseline level of productivity that the feed-supplement treated group was compaired against.

Results and discussion. The average live weight of broilers at 28 days of age in the control group was 1247.3 g, while in the experimental one – 1316.4 g (69.1 higher). At the end of treatment, when the chickens were 42 days old, their average live weight in the control group was 2480.7 g and in the experimental group – 2548.1 g.

Along with the changes in live weight, another important indicator of broiler performance was taken into consideration. Fodder consumption per 1 kg of gain was evaluated during the experiment.

The experimental group demonstrated 3.3 kg more weigh gain than the control group. Total fodder consumption in the experimental group was 6.4 kg lower than in the control group. Fodder consumption per head was 0.11 kg lower respectively. Fodder consumption per 1 kg of live weight gain in the control group was 0.06 kg higher than in the experimental group. This suggests the positive influence of the enzyme feed additive on the digestibility of feed nutrients.

Conclusion. The results of the experiment and data analysis show that the concentrated enzyme applied in broiler chickens improves energy absorption from fats and carbohydrates, and contributes to better protein digestion. Thus the productivity of broilers can be significantly increased by Rovabio Excell AP application.

FOOD LOSS

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Farming has changed the planet more than any other human activity. Today we produce much more food than centuries ago, but there are still nearly one billion people who are hungry every day. Mankind is to address the issues of a growing population and widespread poverty. For this purpose new methods of growing food are invented. But a big part of answer to this question is on the plates in front of us, since up to half the food produced in the rich world is wasted or thrown away.

Material and methods. So this article is devoted to one of humanity's contemporary challenges, namely, food loss. The methods which were used are reading, analysis, synthesis and comparison. In this work we used a number of recently published articles from such journals as Science, American Chemical Society and others.

Results and discussion. According to some reports approximately 30 to 50% of food is wasted. The statistics are incredible, especially given the lack of landfill space, not to mention the global menace of world hunger.

The challenges and opportunities for improving global food security and the environment are not evenly distributed across the globe. For example, a comprehensive new review of food waste in the People's Republic of China has concluded that about 19 of every 100 pounds of grain produced in the country go to waste, with related losses of water for irrigation and farmland productivity. The overall loss means the waste of an estimated 177 billion cubic yards of water used to produce food grown but never eaten – a volume equal to the amount of water Canadian farmers use to grow all their crops.

The researchers found that US per capita food waste has progressively increased by about 50% since 1974. Previous calculations are likely to have underestimated food waste by as much as 25% in recent years.

Also in Toronto, Canada, 210 million kilograms of food – equivalent in weight to 35,000 African elephants — is disposed of every year. Whereas 75 percent of organic waste in Toronto is composted, 32,000 tons are disposed of in landfills.

And almost 50% of fruits and vegetables in the EU are not consumed.

Damage to the environment is another problem connected with wasted food. There isn't enough clean water everywhere on Earth at present. We know that food waste contributes to excess consumption of water. Methane and carbon dioxide emissions from decomposing food could impact global climate change. So, reducing food waste is one of the highest priorities on the environmental agenda.

There are different kinds of food waste. We can lose food while producing it. Approximately 30 to 40 percent of raw food materials and ingredients are lost between the points of production and consumption. It can be accidental damage during threshing or fruit picking, damage can be caused by insects, mechanical damage or spillage during harvest operation and crops sorted out. The lack of tuning between supply and demand is another reason for losses.

During postharvest handling and processing 5.5% of the fresh produce gets lost, by, for example, bad storage conditions, juice production, or during process interruptions and accidental spillage. In the distribution chain and supermarkets another 7.5% is being lost due to degradation and expiring 'best-before-dates'.

13% of what is initially produced gets lost due to consumers behavior. They throw away still edible fruits and vegetables, or waste food due to storing the fresh produce too long or at a wrong temperature.

Perhaps the most important question is how to create a more efficient global food supply chain.

At present there are many ways to cut that wastage.

For instance, scientists of Ghent University and Wageningen University try to reduce the losses within the fruits and vegetables chain by developing statistical models. Predicting the degradation and the safety of fresh produce, they can improve the planning and logistics of food processors, transporters and supermarkets.

Also consumers can help to reduce the losses. For example, people can eat seasonal food. If you eat seasonally, then fresh produce will not have to be transported for a long distance, so it can be stored longer. A weekly leftover day helps to reduce the leftovers. If you buy and cook not more than necessary it will obviously reduce losses.

To my mind, the best solution to this problem would be to divert excess food to those who really need it. This tract deftly illuminates the global consequences of our choices about what to eat – and what to throw away. More efficient use of the food production chain and a decrease in the amount of food losses will dramatically help maintaining the planet's natural resources and improve people's lives.

The second type of food waste is unmanaged wastes from food industry. For instance, sunflower seed husks, pomegranate or banana peels and so on. But modern science and technology can provide sustainable solutions to these things as well.

One of such solutions is obtaining bio-gas from food industry waste. Some technological centres exploit the enormous potential of obtaining biogas from the organic matter contained in agricultural food waste. They obtain hydrogen and methane from the same combined fermentation process from sludge, from purifying plants or food waste from mass consumption. The emissions of greenhouse gases into the atmosphere are reduced, smells are also considerably reduced.

There is an organization called The Climate Group at the City University of Hong Kong, which is developing a new kind of food biorefinery. They try to change food waste into a key ingredient for making plastics, laundry detergents, medicines and scores of other everyday products. In addition the new technology could have numerous environmental benefits. This concept could become very important in future.

As for sunflower seed husks, they could be used as an environmentally friendly filler, or aggregate, for concrete according to the team of researchers in Turkey. The Turkish scientists demonstrated that the use of husks reduces the density of concrete as well as boosts the material's resistance to cracking after exposure to icy then thawing conditions.

Pomegranate peels can make a nutritious feed supplement for cattle, researchers in Israel report. Therefore it may yield meat with higher levels of beneficial antioxidants. Due to these antioxidants consumption of pomegranate products may help fight cancer, infections, and other diseases in humans.

Conclusion. Potential solutions to limit the amount of food wasted include changing agricultural production techniques and making suitable investments in transport and storage infrastructure as well as changing commercial and consumer behavior in developed countries.

Policymakers and stakeholders should delve into the mechanisms – more open markets or lower agricultural import tariffs, for example – that would allow food that is wasted during the latter stages of the food supply chain in developed regions to be directed towards developing countries that have insufficient food supplies. More work is needed for the widespread adoption of best practices by adapting current successful approaches to local socioeconomic and environmental conditions, within the context of a changing climate.

Fortunately, many institutions, including NGOs, foundations, governments, citizens' groups, and businesses, are committed to improving global and local food security while reducing environmental harm.

This study is designed to draw your attention to the problem of food waste and help you make informed decisions about food you eat every day.

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OBTAINING OF WEAR-RESISTANT COATINGS FROM THE DIFFUSION ALLOYED MANUFACTURE METAL WASTE BY INDUCTION SURFACING

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Production wastes are the remnants of raw materials and semi-finished products produced during the manufacture of products and fully or partially lost their consumer properties and physico-chemical products or mechanical processing of raw materials, also physico-chemical or mechanical processing of raw materials, the preparation of which was not the purpose of the production process, and which can later be used in the national economy as the finished products after appropriate treatment or like raw material for processing [1].

A significant part of the dispersed metal waste, able to go for further processing and use constitute a waste product of the shot. This production of waste particles are smaller than 1 mm are not used for shot blasting product [2]. Remelting of metal these waste are disadvantageous due to loss by burning [3]. However, this material is a ready basis for receipt a diffusion-alloyed alloy. Details about the technology and practicability of using these metal wastes as a basis for producing wear resistant coatings concentrated sources of energy described in several papers [4-8].

The aim of this work was to obtain diffusion-alloyed alloy for induction welding from cast iron metal waste; cast-iron shot mark 'ДЧЛ 08' [9].

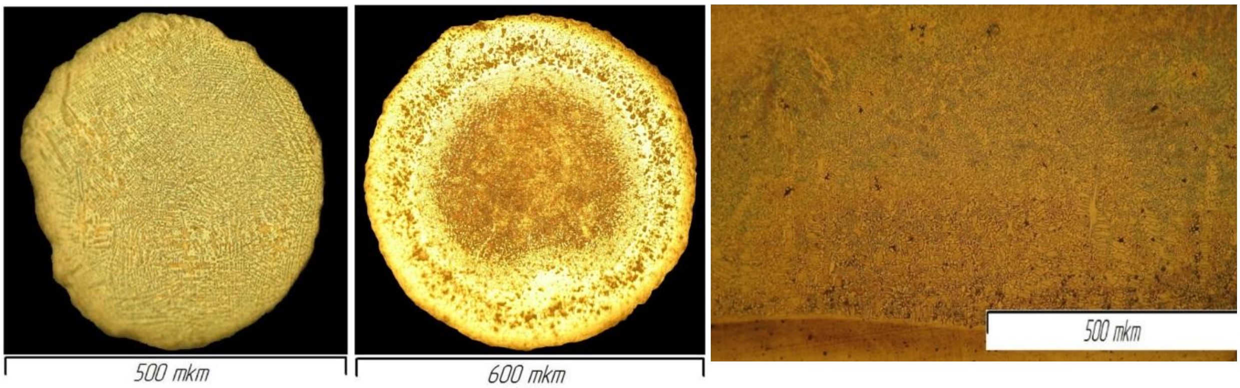
Material and methods. As an initial material has been selected the waste cast iron shot 'ДЧЛ 08' after shot blasting with sizes 500-630 microns. The chemical composition shot 'ДЧЛ 08' is 95,38% Fe; 3,25% C; 0,44% Si; 0,189% Cr; 0,361% Mn; 0,122% Ni; 0,148% Cu; 0,036% P; 0, 067% S. Diffusion alloying has been carried out in the moving powder environment in a special machine [10]. Boron carbide and activator (AlF3), after heat treatment - 950 ° C and treatment time - 60 min have been selected as saturating mixture. Induction surfacing has been carried out on high-frequency generator 'ВЧГ2-100 / 0,066' - 100 kW, number of phases - 3, the frequency of 66 kHz. Mode options of surfacing: intensity - 13 V, the current on the grid - 1,5 A, the anode - 7,5 A, the anode voltage - 10 kV. Diffusion-alloyed powder and abrasion-resistant coating obtained by induction surfacing have been investigated by using standard metallographic techniques and microhardness analysis.

Results and discussion. Microstructure of the initial cast-iron shot (1a), after treatment (1b) and the microstructure of wear-resistant coating (1b) are shown in Figure 1. The initial microstructure of the shot is a finely dispersed Ledebour with small inclusions of Sorbitol and Troostite of annealing;

also carbide phase that is part of the eutectic. Distribution of microhardness in powder is uniform about 7730-8880 MPa. After diffusion alloyed in the metal powder has been detected borated layer. Formation of continuous chain of graphite inclusions in borated sublayer is associated with the ousting of carbon in the powder center and local plastic deformation during diffusion alloying of cast-iron shot. Size of graphite inclusions in a layer is 2 - 4 micrometers, and in the core 10 - 15 micrometers. The layer thickness is 60 - 80 micrometers. The microhardness of the powder surface is 12000-13000 MPa and gradually decreases towards the core up to 4000-5000 MPa, which is caused by the presence of the solid phase Fe2B in the surface layer of the powder.

The wear-resistance layer obtained by induction surfacing consists of hypoeutectic, eutectic and hypereutectic region. The hardness of the surfacing layer is 55-62 HRC and is associated with a high degree of alloying its phase components.

The porosity in the layer is small in range of 3-5%. Metal has a distinct dendritic structure near fusion line. The upper layer of surfacing metal contains inclusions of primary carbides. Between the deposited metal and the substrate metal is a clear transition zone, indicating that the complete fusion of substrate and the deposited layer.



a) ***b)*** ***c)***

Figure 1 – Microstructure of cast-iron shot and wear-resistance layer

a – initial cast-iron shot; b – cast-iron shot after diffusion alloying;
c – obtained coating by induction surfacing of cast-iron shot

Conclusion. Microhardness and adhesion of the wear-resistance coating obtained by induction surfacing from diffusion-alloyed cast-iron shot 'ДЧЛ 08' don`t inferior to the wear-resistant coatings of commercially produced foreign surfacing alloys and can be used as a partial or complete replacement on plant of the Republic of Belarus engages in repair and recovery.

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DEVELOPMENT AND INDUSTRIAL SAFETY IN MINING INDUSTRY

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The problems of energy safety and providing the world by fuel and energy are becoming more relevant. Interaction of possessing countries and consuming countries of various energy resources is becoming increasingly necessary, so "energy dialogue" between different countries is a topical issue of modern world. Russia is the world's largest holder of coal deposits, and it is quite natural that significance of this country on the world coal market in the foreseeable future will continue to grow along with the increasing role of coal as a fuel in the global energy sector.

Material and methods. Nowadays, intense competition has still been running on continues for markets and coal sources on the global market arena. In this regard, Russia needs a set of measures to maintain and increase its influence in the global coal market, since Russia is the world's largest coal state and the owner of huge "solid fuel" deposits, it has all the capabilities to achieve this goal. A rich source of raw materials, relatively cheap workforce and production costs and certainly geographic location are a competitive advantages of coal complex of Russian Federation. However, the existing potential of the coal industry in Russia is far from being used fully. It is necessary to develop new coal fields, introduce modern energy-saving and environmentally friendly technologies, more efficient and rational using of the export potential of this natural wealth. [1]

The last 10 years have been for the coal industry the some sort of stage of stable development, which coincided with the recovery growth of the economy. During this period, the volume of Russian coal production grew by about a quarter, and now exceeds the level of 350 million tons per year. Almost 4-fold (in current prices) increased investment in fixed assets of coal enterprises, annually introduces new coal production capacity of over 20 million tons. Coal companies have been started major projects to develop new areas of coal mining in the Republic of Sakha (Yakutia) and in Trans-Baikal region. Owners of coal assets have been involved with interest in the creation of new and in existing capacity increasing of coal terminals in Russian ports [3].

A series of measures for the coal industry restructuring in Russia has not been completed yet. Between 1992 and 2013, 188 mines and 15 open-pits were closed, were eliminated more than 5,000 kilometers of mine openings, were destroyed 14727 sq. meters of buildings, were reclamated 5627,7 thousands hectares of disturbed land, 36 fires were extinguished and were liquidated on waste dumps and underground pits, were built 53 dewatering complexes and 10 treatment plants for mine waters [3].

Results and discussion. Currently, the coal industry is represented by 86 mines and 129 quarries, the fourth part of which were introduced after 2000. New plants have high technology and the most modern technology of coal mining.

Productivity is growing in the industry, the concentration of production is going, more than 70% of the coal today provide sections with an average annual capacity of 1.6 and 3 million tons correspondingly.

According to the requirements of foreign markets, the quality of produced coal products is increasing. Since 2000, volumes of coal beneficiation have been increased significantly (approximately 1.5-fold), including energy coal - more than 2 times. During this period, 20 new processing plant and installations have been introduced, 11 of them for the processing of coal. Absolute majority of introduced processing plants are a new generation of factories. As a result, a part of the ballast component in coal production which is shipped decreased from 33.3 to 28.5%.

Concept of improving the system of training, retraining and advanced training of personnel for the organizations of the coal industry has been approved, and now its realization are performed.

At the same time, in all developed countries the coal industry is connected with occupational injuries, deaths and diseases.

The share of coal mining carried out in unfavorable geological conditions is increasing. Over the past 10 years, the average depth of mining coal layers in mines increased by 12% and amounted 441 meter in 2012 [3].

Almost all (90.8%) developed coal layers are dangerous for at least one of the factors in this case 74% of the mines have 2 or more dangerous factors simultaneously. The share of dangerous layers with explosive dusts remains consistently high (87.3%).

Probability of accidents in the coal mining organizations operating hazardous production facilities (in 2013 fatally injured 72 people, that is 18 people more than last year) remains high too.

Reliable operation of any complex technical system, specifically a modern mine determined primarily by human activities. More than 66% of the accidents in the technological sphere are due to human errors. Therefore, to increase the reliability of modern engineering systems a decisive role belongs to the level of professional expertise and information support of person acting in the system. The role of the human factor and the level of training in modern conditions are increasing.

Conclusion. Based on analysis of accidents the most important work must be performed on the following main areas: [1]

- The development and practical realization of the concept which is connected with dust-explosion safety at new technological level. Unfortunately, specifically blasts involving dust leads to mass deaths and disabling tens of kilometers underground pits and installations. Number of countries allowing to underground accidents happen is small (China, Afghanistan, Ukraine, Russia). Russia's withdrawal from this non-prestigious "club" should be the number one issue in the organization of safety in the mining industry;
- Endo- and exogenous fire safety increasing in mining enterprises;
- The problem of "methane barrier" and industrial utilization of coalbed methane;
- Improvement of the regulatory framework - Safety Rules, Design Manual ventilation and degassing of mines, working out the instructions in the Safety Rules and in common rules for the dust control;
- Development of integrated systems of on-line monitoring of the objective parameters of technology and safety;
- Development of environmental management systems for existing and restructured mining enterprises;
- Improving ventilation and degasification systems for high coal mining, research of gas processes in existing and closing mines of coal-mining field of the Russian Federation;
- Development and widespread commercial application of integrated computer technology in the design of ventilation, preparation of emergency response plans.

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INFLUENCE OF SUBSTRATE TEMPERATURE ON CHARACTERISTICS OF SILICON DIOXIDE RECEIVED DEPOSITION FROM ION BEAMS

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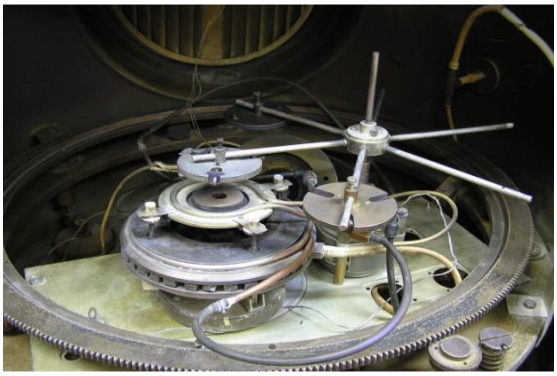
New method of deposition thin films by ion flow generation of film-forming gases from the beam focus is promising for various coatings [1]. Its essence lies in the fact that in certain conditions in the ion source based on the accelerator with anode layer occurs the formation of the secondary discharge. This zone has the shape of the discharge weakly divergent ion beam [2].

Material and methods. Experimental investigations were performed on modernized installation vacuum deposition VU-1A. Appearance of the bell-jar fixture is shown in fig. 1, a and the resulting ion beam – in fig. 1, b.

We investigate the influence of the substrate temperature on structure-phase, electrical and optical characteristics of the coatings from silicon dioxide received by deposition of the secondary ion beam. Experimental investigations were carried out on the installation VU-1A equipped with ion source based on the accelerator with an anode layer. As the working gases were used the mixture of monosilane with argon (5% SiH_4 + 95% Ar) and oxygen. Coatings of silicon dioxide deposited on immobile substrate of silicon and glass. The substrate temperature T_s was 100, 115, 180, 250 and 320° C. The partial oxygen content was (2,0–2,5)·10^{-4} mm Hg, accelerating voltage –3.0 kV, discharge current –60–100 mA, diaphragm potential – 0.



a

b

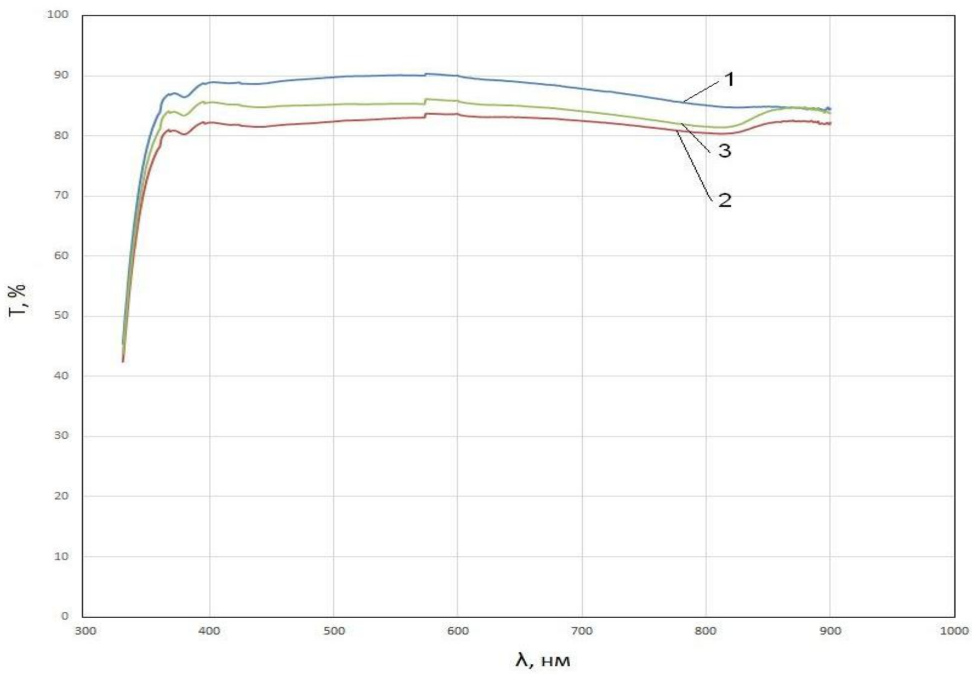
Figure 1– Appearance of the bell-jar fixture installation VU-1A(a) and appearance of the ion beam (b)

Results and discussion. Wt have investigated the influence of deposition temperature on dielectric permittivity ε, dielectric losses tgδ and break down electric field strenght E_b. The deposition rate was changed in the range of 0,62 ... 1,25 nm/s. The results of measurements of electrophysical parameters are shown in Table 1.

Table 1– The results of measurements of electrophysical parameters

№	P_{O2}, mmHg	P_{SiH4}, mmHg	U_a, kV	I_d, mA	T_s,°C	ε	tgδ	E_b, V/sm
1	$2,0\cdot10^{-4}$	$3,8\cdot10^{-4}$	3,0	80	115	2,24	0,100	$2,7\cdot10^{5}$
2	$2,0\cdot10^{-4}$	$3,8\cdot10^{-4}$	3,0	90	180	2,65	0,034	$5,0\cdot10^{5}$
3	$2,5\cdot10^{-4}$	$5,0\cdot10^{-4}$	3,0	60	250	1,43	0,240	$1,0\cdot10^{6}$
4	$2,0\cdot10^{-4}$	$3,8\cdot10^{-4}$	3,0	100	320	3,20	0,200	$3,3\cdot10^{5}$

1–T_s= 250°C; 2–T_s= 320°C; 3–T_s= 115°C



a

1–T_s= 250°C; 2–T_s= 320°C; 3– T_s= 115°C

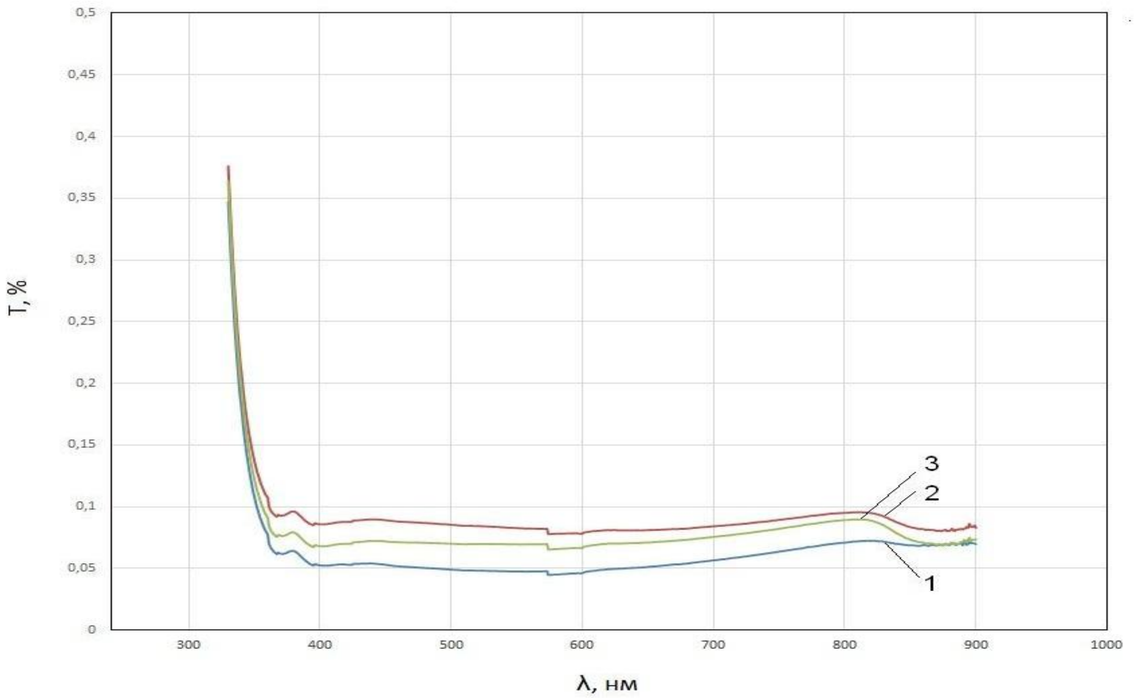


Figure 2 – Transmission spectrum (a) and absorption spectrum (b) films

1–T_s=180°C; 2–T_s=320°C; 3–T_s=115°C

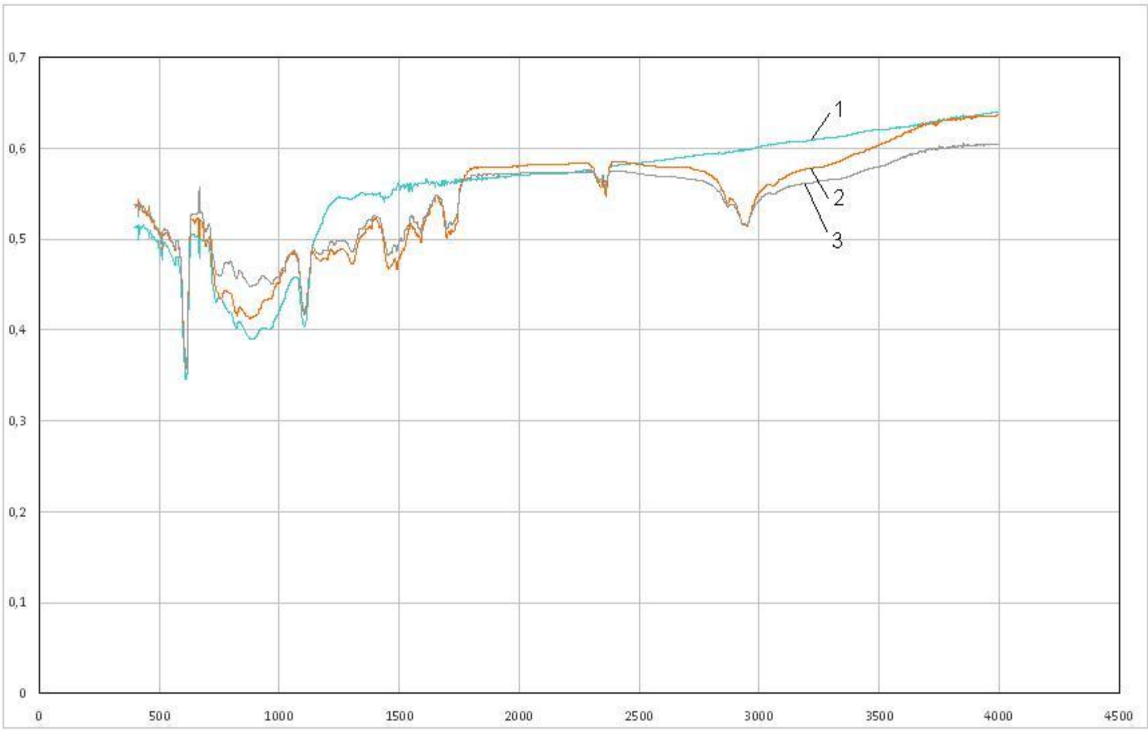


Figure 3 – Infrared spectrum of SiO_2 films

It is established that the substrate temperature not uniquely influences on ε, tgδ and E_b. Dielectric losses was minimal at T_s = 180°C, and the E_b – T_s = 250°C. Low values dielectric permittivity films may be associated with the presence built-in charge.

In the visible range transmission coefficient was 0,82–0,91 and depended on T_s. Figure 2, a shows the transmission spectrum of the SiO_2 films received at different substrate temperatures. The optimal temperature of the substrate to obtain the maximum transmittance in the visible range should be about 250°C.

The measurement absorption spectrum also showed that the coatings obtained at T_s = 250 ° C, had a lower absorption (Fig. 2, b).

To identify the composition and determination of the stoichiometry of the obtained films were measured infrared transmission spectrum. Spectra were recorded in the spectral region of 4000...400 sm^{-1}. In this range all the resulting films had three characteristic absorption bands: band of about ν_s = 800 sm^{-1}, corresponding to the stretching symmetric vibrations Si → O ← Si; band of about ν_{as} = 1085 sm^{-1}, corresponding to the stretching antisymmetric vibrations Si ← → O ← Si; band about δ_{as} = 450 sm^{-1},corresponding to the deformation vibrations of doubly degenerate Si – O – Si (fig. 3).

Conclusion. Thus, increasing the substrate temperature at deposition leads to the formation of higher quality coatings.

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PROBLEMS OF MODERN MEDICAL SCIENCE AND PHARMACY

ANALYSIS OF MEDICAL AND SOCIAL RISK FACTORS OF PRETERM BIRTH IN VITEBSK REGION

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Preterm birth is a birth that occurs in the period from 22 till 37 weeks with the fetus weighing of 500 grams or more. Despite the advance in knowledge about risk factors and mechanisms of preterm birth, their number in the last decade has not reduced. The incidence of preterm birth in the Republic of Belarus in 2013 was 4.1% [1]. The urgency of this problem has both medical and social significance. Perinatal mortality occurs 8–13 times as often in preterm birth than in term birth. Fifty percent of premature babies have severe neurological diseases, impaired vision and hearing, chronic diseases of the respiratory system [2].

The aim of this study was to identify the most important risk factors of preterm birth in women of the city of Vitebsk and Vitebsk region.

Material and methods. A retrospective analysis of 286 births occurred in Vitebsk Regional Clinical Maternity Hospital and Vitebsk City Clinical Emergency Hospital in 2012-2013 has been made. The main group (group I) consisted of 143 patients with singleton pregnancies that ended in spontaneous preterm birth. Gestational age was ranged from 185 till 258 days (on the average 245 days). Newborns weight was 2400 (2060–2680) grams. In the control group (group II) we included 143 female patients with singleton pregnancies who delivered full-term healthy infants, the median body weight of which amounted to 3460 (3200–3670) grams, the gestational age ranged from 259 till 291 days (on the average 275 days). Software packages Statistica 10 and Excel have been used for all statistical analyses.

The results of the study. The age of puerperants did not statistically differ between the main and control groups (main group 27.1 ± 5.8 years; control group – 26.1 ± 4.7 years; $p>0.05$). The proportions of nulliparous women were 52.5% in the 1st group and 49.6% in the 2nd group ($p> 0.05$). Body mass index was significantly higher in the main group (23.0 ± 3.8 kg/m^2) than in the control group (21.7 ± 3.4 kg/m^2), $p = 0.046$.

Obstetric history was burdened in 53 (37.1%) patients in the main group and 50 (34.9%) patients in the control group. Differences in the obstetric history were revealed by the number of premature births and miscarriages (table 1).

When we analyzed the medical history of patients, statistical differences in the incidence of gynecological diseases between two investigated groups were also observed.

Table 1 – Features of obstetric history, n (%)

Feature of obstetric history	group I, n=143	group II, n=143	P
Premature birth	20 (13.9%)	2 (1.4%)	0.0001
Medical abortion	43 (30.1%)	46 (32.2%)	> 0.05
Missed abortion	14 (9.8%)	12 (8.4%)	> 0.05
Spontaneous abortion	23 (16.1%)	7 (4.9%)	0.002
Abortion in late term	7 (4.9%)	3 (2.1%)	> 0.05
Hydatidiform mole	3 (2.1%)	1 (0.7%)	> 0.05

Somatic diseases were detected in 112 (78.32%) patients of the main group and 87 (60.84%) patients of the control group ($p<0.01$). In the 1st group compared with the 2nd group first degree hypertension (4.9% vs. 0%, $p <0.05$), varicose veins of the lower extremities (15.4% vs. 6.9%, $p <0.05$), mitral valve prolapse (19.6% vs. 1.4%, $p<0.05$) were significantly more registered. Chronic pyelonephritis was found in 19 (13.3%) patients with preterm labor and in 7 (4.9%) women with term delivery ($p<0.05$). Chronic tonsillitis and bronchitis occurred with the same frequency in both groups.

Smoking habits during pregnancy were significantly frequently registered in the 1st group (20, 13.9%) than in the 2nd group (7, 4.9%). Chronic alcohol abuse was established in 6 women (4.2%) from the main group. No cases of alcohol abuse were observed in the control group.

Pregnancy complications were observed in 111 patients (77.6%) from the 1st group and 79 patients (55.3%) from the 2nd group (table 2).

Table 2 – Incidence of pregnancy complications, n (%)

Pregnancy complication	**I group, n=143**	**II group, n=143**	**P**
Acute respiratory viral infection	79 (55.4%)	78 (54.5%)	> 0,05
Threatened miscarriage	91 (63.6%)	52 (36.4%)	< 0,001
Cervical incompetence	32 (22.4%)	14 (9.8%)	0,04
Placental insufficiency	63 (44.1%)	36 (25.2%)	0,008
Mild preeclampsia	25 (17.5%)	18 (12.6%)	> 0,05
Oligohydramnios	20 (13.9%)	7 (4.9%)	0,008
Polyhydramnios	17 (11.9%)	9 (6.3%)	> 0,05
Colpitis	92 (64.3%)	83 (58.1%)	> 0,05

As shown in table 2, women in the main group had more oligohydramnios, placental disorders, cervical incompetence, threatened miscarriage than women from the control group. The diagnosis of cervical incompetence was exposed by echoscopy. The length of the cervix was 33 (28; 37) mm in the 1st group, 35.7 (32; 40) mm in the 2nd group, p = 0.0078.

The frequency of sexually transmitted infections (STIs) was 19 (13.3%) cases in the 1st group and 8 (5.6%) cases in the 2nd group (p=0.026). Ureplasma and chlamydial infection were most common.

Results of laboratory examination have revealed that absolute number of white blood cells before labor increased in the 1st group compared with the control group (group I - 12.2 (9.2–14.2)×10^9/L; group II - 10.3 (8.6–13)×10^9/L), p = 0.01. In both groups leukocytosis was caused by the increase in polymorphonuclear leukocytes proportion. Absolute neutrophil count was 8.9 (6.7–11.4)×10^9/L in the 1st group and 8.1 (5.8–11.8)×10^9/L in the 2nd group. Hemoglobin level, the number of red blood cells and platelets in both groups did not differ.

Histological examination of placenta did not reveal any differences in inflammatory changes between the experimental and control groups (46.9% and 51.1%, respectively).

Conclusion. The conducted analysis showing that women with preterm labor had significantly more premature births, miscarriages, smoking habits and alcohol consumption in comparison with women with physiological pregnancy. However 61.5% of preterm births occurred in the group of women who had first labor or had only a history of term delivery. Unfavorable factors of preterm birth were placental insufficiency, oligohydramnios, cervical incompetence according to echoscopy, leukocytosis with the increase in the number of polymorphonuclear leukocytes.

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PSYCHOLOGICAL TREATMENT BEFORE AND AFTER ORGAN TRANSPLANTATION (KIDNEY)

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Nowadays, in the Republic of Belarusthe problem of the damages done tothe psychological state of chronically ill people is becoming more and more burning. Especially that holds true to the branch of kidney transplantology. One of the reasons for that is the increase of the lifespan among people suffering from renal insufficiency. Applying the modern means of dialysis therapy helps to provide once terminally ill people with up to 12 years of life. Chronical kidney disease in its terminal stage, being typical, still stays unique due to the ways of its treatment. We can say that a new artificial form of life, based on blood purification during dialysis' sessions, is being formed. Nowadays there exist two means of renal replacement therapy: hemodialysis and prenatal dialysis. [1]

Meanwhile the question of lifespan endurance for the people with terminal renal insufficiency is more or less resolved from the medical point of view, the question of psychological support during the therapy and the later surgical treatment remains urgent.

This fact determines the actuality of the research on the ways of supporting patients on every stage of treatment-from hemodialysis to transplantation. And the difficulties, characteristic for each of the periods.

Among the Belarusian authors the most profound works on the topic are those of Pilotovich V. S. and Kalachik O. V.

O.V. Kalachik, being a transplantologist, stated "Terminal renal insufficiency and HD treatment are conjoined with vital threat, leading to serious transformations in physical, psychological and social spheres. The long duration of the therapy, the dependence on the "artificial kidney» device, the amount of time devoted to HD sessions, the restricted diet, limited liquid consumption, appearance transformations, limited circle of communication-all these are powerful stress – provoking factors connected with HD treatment. Hemodialysis helps a patient to survive up to the moment of transplantation. A person becomes literally " machine"-dependent, that can't but leave an imprint on his psychological state(lower emotional level, stress resistance and self-awareness[2]

With the massive development of transplantology in our country, the new life is given to the people once considered hopeless; this evokes the need of proper psychological treatment in order to reveal all cases of mental disturbances connected with the therapy.

The aim of this unvestigation was providing a patient before and after kidney transplantion.

Methods and material. In the terms of our investigation we visited "Vitebsk Regional Clinical Hospital", the department of Dialysis. 38 Patients of the department were involved in the research.

During the research a diary was being kept, reflecting the psychological state of a patient on each stage of treatment.

The diary contains the observation of the patient and the changes in her state during the process of treatment.

On the basis of the material collected, we pointed out two main problems characteristic for the patients undergoing HD treatment. These are: *fear*, resulting from the difficulty and the pain of HD therapy, the weakness resulting from the drop of the blood pressure.

The adaptation of the "newcomers" to the therapy.

The effective correctional work for such patients undergoing renal replacement therapy is not possible without learning the patients' point of view on many items: the disease itself, the treatment, the doctors and so on. So the research involved multiple objects, in order to compare the attitude of other patients to the malady.

The attitude to the sickness reflects the subjective side of it and contains cognitive, emotional and behavioral components. In fact, it goes about the "Inner state of illness" reflecting the "feeling of the sickness"and the personal prognosis.

The particular qualities of the attitude to the illness were studied with the help of the TOBOL methodology (Wasseman, Wuchs, Iovlev, Karpova)

Results and discussion. According to the results of our investigation among the patients undergoing HD treatment the sensitive type prevails (21 percent), connected with sensibility and vulnerability, afraid to affect other people with their sickness. Apathical type was pretty often diagnosed. It is characterized by lack of interest to his own faith and to the results of treatment. Passive submission to the procedures, while being forced to do it. Loss of interest to life, to everything that used to be important. Apathy in behavior, actions and personal relations(13 percent). Among HD patients prevail the representatives of the 2 and 3 blocks(58 percent), that predetermine the problems with social adaptation.

On the basis of the research we made a conclusion that the main therapy and support for this type of patients is cohesion and helping them to accept this temporary period of life.

We also made a decision to work out a program of rehabilitation for the patients suffering from renal insufficiency and undergoing HD treatment. "The Patients' School" with the medical stuff, that treated the patients.

The aims:

1. To use multiple approach to informational influence.
2. To organize group discussions of the problems.

The lessons last 40-50 minutes and occur twice a week, on the days free from HD. This stimulates the activity of the patients, helps them to control their state and the results of the treatment. The patients feel that they act and are involved, not just are being acted upon.

The patients in the group are on different stages of treatment. The experience exchange among the members of the group made the contact much closer and helped the “newcomers”.

We should also admit the fact that after the transplantation a person has to undergo immunosuppressive therapy. That helps the organism not to reject alien tissues, but produce the side effect of neurosis and panic fear [3].

Our patient, L., once confessed that after the operation she is constantly worrying about her kidney, about not knowing how to live now ”The life has changed so much”.

Basing on the talks with the patient, on the fact that she used to have panic attacks during the pre-operational period, we decide that she needed to be helped to overcome it and to gain self-assurance. For that matter the “Symboldramma method was chosen.

The sessions occurred during the hospital treatment.

Each session lasted 45-60 minutes.

Somatically, some declines were observed (especially right after the transplantation). Namely: dizziness, fatigue and rapid heartbeat. These all were described by the treating doctor as insignificant side effects going away on their own.

This helped the patient to accept herself and to stop thinking about something alienated in her body. To stop worrying about being accepted in the society.

Conclusion. Taking the above mentioned facts into consideration we should state that on the modern level of transplantology development, admitting the existence of people with transplanted organs, we should stress the necessity of psychological aid to people during pre-and post-operational periods.

During our investigation we achived the goal of providing a patient with psychological help in the pre- and post-operational periodandworked out an adaptation program “Patients’ School.

Having analyzed all the sources and held out a profound investigation, we came at the conclusion that investigational methods positively influenced the psychological state of the patients, drawing extra attention to the help needed by them, which, in terms of their growing numbers we can’ t deny.

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RESEARCH OF NATURAL KILLER CELLS’ CYTOTOXICITY IN PATIENTS WITH LUNG TUBERCULOSIS

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Tuberculosis is an infectious disease caused by various specious of Mycobacteria (*Mycobacterium tuberculosis*, *M. bovis* and *M. africanum*), which typically affects the lungs. Infection with *Mycobacterium tuberculosis* (MTB) is spread most commonly through the air. MTB is phagocytized in the pulmonary alveoli. It blocks the work of lyzosomes and phagosomes with the help of sulfatide and cord factor. Next phase is the latent microbiosis during which macrophages accumulate around *Mycobacteria*. During obligate bacteremia MTB moves from lymphatic system into the bloodstream and settle in the internal organs.

Cellular reactions play great role in the antituberculosis immunity. T-helper cells and Natural killer cells (NK) produce interleukin-2, chemokine and interferon-gamma. With the help of these cells the bactericidal potential of macrophages is increased and phagocytosis completes.

The role of NK-cells in the early stages of antituberculous immunity is particularly important because they can destroy infected cells immediately and stimulate cellular immune responses. Increase of the number of NK-cells in the lungs of animals during the first 3 weeks after infection was described in experimental studies of antituberculous immunity in mice. NK are the cells of innate immunity, which have antitumor and antiviral immunity. They are capable to destroy cells which were infected with microorganisms (bacteria, viruses, protozoa, etc.) by excretion of proteins perforin and granzymes, that trigger a cycle of caspases reactions and lead to cell apoptosis. NK-cells secrete large amounts of cytokine IFN-γ, which promotes activation of cellular immunity. They play a major role in the early stages of infection and in the trigger of antituberculous immunity [1-3].

NK-cells are involved in antituberculosis immunity at the earliest stages of infection. They stimulate cell-mediated immunity against *M. tuberculosis*. The results of some experiments show that the number of NK-cells rapidly increases in the lungs of experimental animals during the first 3 weeks of infection. Natural Killer (NK) cells provide the primary source of IFN-γ during cord blood exposure to *M. bovis* BCG [4]

Material and methods. Venous blood (4 ml) was taken from a group of healthy men and a group of patients, who suffered from lung tuberculosis. Peripheral blood mononuclear cells were isolated by gradient centrifugation [5]. The cells viability was 96%. Tumor cell line K-562 was cultured as elsewhere described. The simulation of an immune specific inflammation *in vitro* was performed by adding alive *M. bovis* to mononuclears culture for 48 hours. Biological response modifier (sodium succinate "Reamberin©") was added to some cultures (3 $^{mg}/_{ml}$, 5 $^{mg}/_{ml}$, 7,5 $^{mg}/_{ml}$). Natural killer cell activity was determined by short-term (4-hour) tests at different ratio of target/effector cells $^1/_1$, $^1/_{10}$ and $^1/_{100}$. Dead K-562 cells were counted microscopically by trypan blue exclusion.

Results and discussion. The percentage of K-562 death in the control (patients' mononuclear cells + K-562 + *M. bovis*) was 4,1±0,5% ($^1/_1$), 7,3±0,2% ($^1/_{10}$) and 14,2±0,6% ($^1/_{100}$). The percentage of K-562 death in the control (healthy men' mononuclear cells + K-562 + *M. bovis*) was 5,5±0,9% ($^1/_1$), 9,7±1,7% ($^1/_{10}$) and 18,9±4,2% ($^1/_{100}$). **"Reamberin©" in concentration 3 $^{mg}/_{ml}$:** the percentage of K-562 death (patients' mononuclear cells + K-562 + *M. bovis* + succinate) was 6,0±0,2% ($^1/_1$), 7,9±0,3% ($^1/_{10}$) and 17,9±0,6% ($^1/_{100}$); the percentage of K-562 death (healthy men' mononuclear cells + K-562 + *M. bovis* + succinate) was 8,5±2,4% ($^1/_1$), 11,6±2,3% ($^1/_{10}$) and 22,5±5,1% ($^1/_{100}$). **"Reamberin©" in concentration of 5 $^{mg}/_{ml}$:** the percentage of K-562 death (patients' mononuclear cells + K-562 + *M. bovis* + succinate) was 6,2 ±0,3% ($^1/_1$), 12,5±0,2% ($^1/_{10}$) and 18,2±0,4% ($^1/_{100}$); the percentage of K-562 death (healthy men' mononuclear cells + K-562 + *M. bovis* + succinate) was 8,8±1,7% ($^1/_1$), 15,9±3,7% ($^1/_{10}$) and 23,6±5,9% ($^1/_{100}$). **"Reamberin©" in concentration of 7,5 $^{mg}/_{ml}$:** the percentage of K-562 death (patients' mononuclear cells + K-562 + *M. bovis* + succinate) was 6,6±0,4% ($^1/_1$), 13,1±0,3% ($^1/_{10}$) and 17,7±0,6% ($^1/_{100}$); the percentage of K-562 death (healthy men' mononuclear cells + K-562 + *M. bovis* + succinate) was 9,4±1,8% ($^1/_1$), 16,4±3,9% ($^1/_{10}$) and 21,6±5,3% ($^1/_{100}$).

Conclusion. The natural killer activity in the group of healthy men is higher than in the group of patients with lung tuberculosis. There is a tendency of natural killer activity increasing with the increasing of effector cells (mononuclear blood cells) concentration. There is a tendency of natural killer activity increasing with the increasing of "Reamberin©" concentrations in both groups. The highest percentage of natural killer activity is at a ratio $^1/_{100}$ (target/effector cells) in both groups.

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THE EFFICIENCY OF INSULIN PUMP THERAPY TYPE 1 DIABETES MELLITUS IN PREGNANCY

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In Belarus, pregnant with diabetes mellitus (DM) constitute 4-6% of all pregnant women annually (L. I. Danilov, Burco I. I., 2010) [1]. Improving the treatment type 1 diabetes and the quality of the insulin preparations have greatly expanded the possibility of pregnancy in patients with this pathology. However, until now this disease is associated with a high risk of perinatal, obstetric and vascular complications to the pregnant mother. Achieving satisfactory glycemic control during planning and throughout pregnancy is the main condition for successful course and outcome of pregnancy in patients with diabetes. In this regard, the optimization tools and methods of correction of diabetes in pregnant women are continued to examine. In an alternative method currently multiple subcutaneous injections of insulin (MPII) is continuous subcutaneous insulin infusion (CSII) method by means of an insulin pump that most closely imitating physiological insulin secretion by the pancreas [2, 3].

The purpose of the study is exploring the advantages of CSII using an insulin pump to ensure the compensation of carbohydrate metabolism in pregnant women with type 1 diabetes compared with the method of MPII.

Material and methods. A retrospective analysis of 228 case histories of pregnant women with type 1 diabetes were followed at the Department of extragenital pathology of pregnancy in Republican scientific-practical center "Mother and Child" in the period from 2007 to 2012. Dynamic observation-carried denie on gestation period of 10-12, 20-24, 28-32 and 36-38 weeks. I group consisted of 28 pregnant women aged 18 to 35 years old (27,4 ± 3,6), treated during pregnancy and childbirth insulin by CSII using insulin pump Minimed 508 (Medtronic, USA). II group consisted of 29 pregnant women aged 17 to 36 years (26,4 ± 4,3), treated during pregnancy and childbirth insulin by MPII.

Statistical analysis was performed with nonparametric methods using the application package «Microsoft Excel 2003» and «AtteStat». Data are presented as medians and interquartile ranges: mediana (interquartile scale - 25th percentile and 75th percentile). Authentic-governmental differences were considered at a significance level of $p < 0,05$.

Results and discussion. In the study of the carbohydrate metabolism status in pregnancy study groups following results were obtained (Table 1).

Table 1

Changes in the level of glucose in pregnancy study groups at different times of day on trimesters

Trimesters	Time of day	I group	II group
I trimester	7.00	5,3 (3,92; 6)	5,72 (3,73; 7,46)
	12.00	4,82 (3,82; 5,9)	6,21 (4,6; 7,41)
	17.00	4,65 (3,88; 5,5)	5,3 (3,94; 6,3)
	21.00	4,99 (4,07; 5,67)*	6,1 (5,65; 6,4)
II trimester	7.00	4,91 (4,33; 5,2)*	6,76 (5,17; 8,22)
	12.00	4,95 (4,31; 5,45)*	7,6 (5,1; 8,5)
	17.00	4,87 (4,34; 5,19)*	5,61 (5,06; 6,28)
	21.00	4,66 (3,78; 5,21)*	6,45 (4,99; 7,62)
III trimester	7.00	4,87 (4,41; 5,5)*	6,64 (5,83; 7,05)
	12.00	4,9 (4,42; 5.54)*	8,25 (6,08; 8,79)
	17.00	5,13 (4,45; 5,54)*	5,94 (4,73; 6,69)
	21.00	4,82 (3,89; 5,77)*	7,25 (5,67; 7,92)

Note: * - statistically significant difference compared with II group ($p < 0,05$).

As can be seen from the data presented in Table 1, the I group level blood glucose in the I trimester of pregnancy was in the range of target values. In II and III trimester had significantly lower levels of blood glucose in I group compared with II group at different times of the day, not at the same time reaching dangerously low limits. In I and II trimesters of pregnancy tended to decrease in HbA1c in the both groups, in the III trimester there was a significant reduction in HbA1c in I group compared with II group. The patients of I group compensated diabetes was observed more frequently than in II group, and tended to increase the proportion of compensated diabetic patients of I group on the trimester.

Hospitalization in I group, as a rule, have been planned, in II group - planned and emergency indications from both the mother and the fetus. In the study of the hemostatic system showed a significant reduction in fibrinogen I and III trimester, as well as an increase in APTT in the I trimester of I group patients compared with II group. In II and III trimester of patients in II group during pregnancy were more common urogenital infections, hydramnios, chronic fetoplacental insufficiency, chronic intrauterine fetal hypoxia, the threat of premature birth.

Terms of delivery in the both groups were similar and amounted to 37 ± 1,6 and 37,2 ± 1,5 weeks respectively. Delivery by cesarean section was performed with the same frequency in the both groups (85.7%). Analyzing the characteristics of delivery, no significant differences between treatment groups were detected, however, in patients of II group was observed primary uterine inertia.

A significantly lower body weight was showed in I group mothers newborns. A higher incidence of neonatal hypo- and hyperglycemia was showed in II group mothers newborns. Number of full-term infants born to mothers I group made up 68,2%; II group – 57,1%. II group mothers newborns had a lower estimate of Apgar, they frequently observed respiratory distress syndrome, mild asphyxia with respiratory failure I-II and II-III degree.

Conclusion. Method CSII in pregnant women with type 1 diabetes allows efficient than MPII provide targets for blood glucose and glycemic control and reduces the incidence of obstetric and perinatal complications.

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THE PECULIAR FEATURES OF PRIMARY HEADACHE IN THE SCHOOLCHILDREN OF GOMEL

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The state of children`s health is the most important indicator of a level of social development which reflects its economic situation, spiritual and moral aspects. The state of children`s health is characterized by a number of indicators among which the prevalence of different pathologies plays an important part [1]. In the last decades in the children's population, the incidence of headaches, including primary headaches has become more frequent [2, 3]. It causes reasonable anxiety among specialists: a headache significantly influences daily activity of children, reduces academic progress and social activity and worsens quality of life in general. Besides, headaches can accompany about 50 various diseases [4] and contribute to a number of disorders at adulthood, which leads to considerable direct and indirect economic losses [5]. Thus, headaches have not only general medical, but also social and economic importance, which calls forth relevance and necessity for research in this subject.

The purpose of the present work is to estimate prevalence of a syndrome of the primary headache in schoolchildren of Gomel and to define its social and demographic characteristics.

Material and methods. The subject of the research is schoolchildren of a comprehensive school of Gomel aged 10-16. 276 schoolchildren were interviewed with a specially developed questionnaire.

Results and discussion. It was found out that only 25 schoolchildren of 5-11 classes (9.0%) did not complain of any headaches. The secondary headache was diagnosed in 78 school students (28.3%). The majority of children (173, or 62.7%) revealed primary headaches.

The girls complained about the headache authentically more often than boys. Senior schoolchildren (aged 14-16) experienced cephalgia more often than younger girls (aged 10-13). The boys revealed a reverse tendency: primary headaches were more often observed in children aged 10-13, than in those aged 14-16. It can be connected with their insufficient examination and existence of undiagnosed illnesses.

Headaches most often are caused by fatigue. Senior schoolchildren also connect them with sleep deprivation, long work on a computer, long talking on a mobile phone. The pain usually arises at the beginning of a week, in the second half of day, in the fall or in the winter.

Conclusion. Studying of the primary headache in the schoolchildren showed a certain dependence of its emergence on physical and mental overload. In this regard, the revealed features need to be considered first of all during the planning and organization of a regimen for children and adolescents. It will make it possible to optimize the medical and health-improving actions directed on elimination of the causes of the mentioned syndrome and to increase efficiency of the carried-out preventive programs for protection and promotion of health among the children's population living in adverse ecological conditions.

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THE PECULIAR FEATURES OF NUTRITION AND PHYSICAL DEVELOPMENT OF SCHOOLCHILDREN OF THE CITY OF GOMEL

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Physical development is one of the criteria of health state in children. Its indicators are significantly influenced by a number of endogenous and exogenous factors, including violation of the basics of a well-balanced diet [1, 2]. An insufficient diet leads to a decrease in body weight in children, their physical and intellectual working capacity, an increase of sickness rate [3]. It is that caused attention of scientists to the problem of organization of good nutrition of the younger generation.

The purpose of the work is to assess the peculiar features of nutrition and physical development of city schoolchildren.

Material and methods. We have studied the actual diet of 100 schoolchildren aged 12-14, of them 36 boys (36.0%) and 64 girls (64.0%) studying at gymnasium No.58 of Gomel named after F.P.Gaaz. The study was performed by questioning.

Results and discussion. Valuable nutrition has to be rational, balanced and has to correspond to physiological requirements [4]. Good nutrition provides normal growth and development of children, increases resistance to pathological processes of various origin and promotes prevention of diseases [5]. However some unfavorable trends have been revealed over the last years: a decrease in consumption of significant food, a deficient intake of vitamins, mineral substances, food fibers, biologically valuable animal protein, non-compliance with meal frequency.

Dietary patterns play an important part in maintenance of normal vital activity of an organism. Ideally, there should be 4 meals a day taken at the same time, the intake of food has to be correctly distributed during the day according to its caloric content and volume. In this case the food is completely and well digested. However our research showed that only half of the schoolchildren had three meals a day. The quarter of the children ate twice a day. Every tenth child did not have breakfast, every third had breakfast irregularly. Thus, the lack of food affects the body weight and length of schoolchildren: 22.0% of the children revealed deficiency of body weight.

The structure of food patterns of schoolchildren nowadays has considerably worsened: the consumption of milk and dairy products, meat and meat products, vegetables and fruit has decreased. The average frequency of intake of certain significant groups of products by the schoolchildren of

Gomel is insufficiently high: meat and meat products – 2.66± 0.9 times a week, fish and seafood – 1.45±1.3 times a week. The specified foodstuffs are fully absent in the diet of the schoolchildren in 3.0% and 19.0%, respectively. Daily presence of milk and dairy products, fruit and berries in the diet was revealed only in a half of the respondents. At the same time, 83.0% of the schoolchildren preferred snacks (chips, rusks, etc.), and 90.0% – carbonated drinks.

The low content of proteins, including proteins of the animal origin, vitamins, mineral substances in the consumed foodstuffs leads to calorie insufficiency and, as a result, decreases the physical and intellectual efficiency of schoolchildren. At the same time, the prevalence of digestible carbohydrates in the diet and the increased consumption of fat promote development of excess body weight, which was diagnosed in 34.0% of the schoolchildren. The girls detected excess weight 1.6 times more often than the boys. Excess weight is an essential risk factor for development of cardiovascular diseases, cancer, osteoporosis, arthritis in the future.

Any violations of the dietary pattern promote emergence and transition to chronic forms of diseases of digestive organs. 54.0% of the respondents indicated periodically arising stomach aches, 28.0% – dyspeptic manifestations (nausea, vomiting, belching, heartburn, unstable stool). 30 teenagers pointed to numerous cases of hospital admission concerning illnesses of the digestive tract.

Conclusions. Therefore, the diet of the schoolchildren has deviations from physiologically reasonable regulations, and in this way provides an insufficient intake of biologically valuable substances and energy with food and cannot support the normal vital activity of an organism to the full extent. In this regard, active explanatory work among children and their parents aimed at formation of the correct stereotype of eating behavior is necessary.

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THE STRUCTURE OF THE SPINAL GANGLIA OF 20-DAYS-OLD RAT FETUSES AFTER EXTERNAL IRRADIATION AT A DOSE OF 0,5 GY ON THE EARLY AND LATE STAGES OF EMBRYOGENESIS

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It is well known that the development of the embryo can be severely affected by exposure to the ionizing irradiation at critical periods of gestation, while the effects of subteratogenic low-dose irradiation have not been studied in detail. The importance of these the latest research has increased after the Chernobyl accident. The nervous system runs through the complex stages of formation, migration and differentiation during prenatal development. This leads to the fact that the nervous system is one of the most sensitive organ to external pathogenic influences during the early stages of ontogenesis that may cause organ and tissue malformations. It is important to know consequences of low-dose irradiation in this period to the further formation of the different structures and functions of this system. If the teratogenic effects of radiation on the embryo were studied by different researchers relatively in detail, the consequences of low-dose irradiation remain largely controversial [1 – 5].

The aim of the research was to study the structure of the spinal ganglia of the 20-day-old rat fetuses after external irradiation at a dose of 0,5 Gy in the initial period of embryogenesis and in the end of organogenesis period - on the 9th and 15th days of fetal development.

Material and methods. The work was performed on archival material of the Institute of Radiobiology, Academy of Sciences of Belarus. The objects of the study were the serial histological slides of the 20-day-old fetuses obtained after pre-exposure of pregnant female rats on days 9 and 15 of gestation and compared with a similar material taken from control animals which were kept under standard vivarium conditions without pathogenic effects. The irradiation was performed on the IGUR device (^{137}Cs source, dose rate of 0,001 Gy per second) at a dose of 0,5 Gy. Fetuses of both experimental and control groups were fixed in 10% neutral formalin solution, underwent histological processing and were embedded in paraffin. Serial sections of 5 microns in thickness were prepared from paraffin blocks and stained with hematoxylin and eosin. The structure of the spinal ganglia of the fetuses was analyzed under a microscope with nerve cell funds counting. The morphometrical investigation was carried out on the microscope Leica using the Bioscan program: the general number of neurons in upper cervical spinal ganglia was counted. There were investigated 5 fetuses in each control and experimental group.

Results and discussion. After the irradiation on the 9th day the ganglia structure of 20-day fetuses was the following. The rounded nerve cells of the spinal ganglion and the surrounding neuroglial cells (the satellites) were clearly visible under the microscope on histological slides. Nerve cells were mature enough, but they had several different sizes of bodies and nuclei. Mainly large and round cells dominate. Their nuclei were removed to the edge. The cell membranes were well visible. In the nuclei there were the round nucleoli. The nuclei of satellites were noticeable around each nerve cell. A thin layer of connective tissue could be seen outside of the satellites, which formed a capsule around each nerve cell with these satellites. Thin bundles of collagen fibers and fusiform fibroblasts lying between them were seen in connective interlayer. Connective tissue surrounded the entire spinal ganglion in the form of a capsule. It consisted of dense collagen fibers with fibroblasts located between them. The same connective tissue penetrated into the ganglion and formed its stroma which contained nerve structures. The stroma consisted of loose connective tissue in which fibroblasts with small round or oval nuclei and thin collagen fibers extending in different directions could be distinguished. The described structures were obvious in histological slides, which were taken from control and irradiated rat fetuses. No structural damages at the cellular and tissue levels have been revealed in the experimental group. Statistically significant differences between nerve cell funds of both observations have not been identified at this stage of the study.

The morphology of the upper spinal ganglia in fetuses irradiated on the 15th day was somewhat different from first experimental and control groups. The microscopic examination of these structures on the histological slides did not reveal significant damages in the nerve cells and in the tissue. The nerve cells of the spinal ganglion and the surrounding neuroglial cells (the satellites) were clearly visible. At the same time their sizes and shapes were more variable comparing with the control group. Along with large and round nerve cells prevailing in the control samples there were small cells with various form and high nucleus-cytoplasmic rate in the spinal ganglia of irradiated animals. The number of large neurons was less in this group. These changes could be a sign of immaturity of the investigated structures. It is known, that the maturation delay is a manifestation of the tissue dysplasia.

The number of neurons in the ganglia of the experimental and control groups was not statistically different from each other despite the development delay in the irradiated animals of the third group. (The calculation of nerve cell funds was performed on the number of nuclei).

Perhaps this result connected with the identical neuroectodermal cell migration in all groups and the subsequent cell differentiation with different speeds.

Conclusion. The visible changes were not revealed in the 20-day-old fetuses irradiated on the 9th day of prenatal development in comparison with the control group. The differences were found in the third group of fetuses irradiated on the 15th day of gestation. These changes were seen as a variable shapes, size, high nucleus-cytoplasm rate in neuron cells and their hypoplasia. This developmental delay of the spinal ganglia can be estimated as the tissue dysplasia.

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ATTITUDE OF PREGNANT WOMEN TO SMOKING AND THE REASONS FOR REJECTION OF IT DURING THE GESTATIONAL PERIOD

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Smoking is a complex behavioral act in the origin and development of which involves not only physiological factors, but also a whole range of social and psychological conditions [1]. The greatest relevance is the prevalence of smoking among young people, because this is the basis of the age of smoking initiation and formation of nicotine addiction. The number of regular smoking girls is increasing every year; the largest number of female smokers falls on the reproductive age, including during pregnancy. Smoking cessation during pregnancy depends on the level of education and age of smoking initiation [2]. An important factor in the health of the pregnant woman and the child is her lifestyle for which great importance is an organized struggle with different risk factors, including nicotine addiction. There have been many medical and social researches recently worldwide, which developed and deepened understanding of the harmful effects of active and passive smoking on the course and outcome of pregnancy. It has been found that gestosis, a condition of agalactia in mothers are caused by constant contact with tobacco smoke; smoking during pregnancy causes hypertension and eclampsia, leads to the birth of a baby with low birth weight and premature birth [3].

Smoking during pregnancy is a direct threat to the fetus. The most frequent complication is premature termination of pregnancy. The risk of miscarriage in women who smoke during pregnancy is 30-70% higher than in non-smokers [4].

It is shown that one in four women continues to smoke during pregnancy. The main reasons that do not allow to cope with nicotine addiction are stressful situations, as well as the influence of the nearest environment. Insufficiently explored remains the question, what is the cause, trigger of rejection of tobacco during gestational period, that we need to focus on in the development of preventive interventions in the fight against smoking among pregnant women.

To assess the socio-psychological characteristics of pregnant women with nicotine addiction and to describe the reasons for smoking cessation.

Material and methods. The investigation was carried out in maternity hospitals of the city of Gomel. We interviewed 16 pregnant of optimal reproductive age with gestational age of 38 weeks. Method of data collection - semi-structured interview, lasting at least 30 minutes. At the time of data collection 5 women quit smoking upon the establishment of pregnancy and agreed to participate in qualitative research.

Results and discussion. The obtained data showed that women started smoking in the school years, the main reasons were the following: "Smoking is the attribute of adulthood", "all my friends smoke", "curiosity", etc. A.A. Aleksandrova and V.Y. Alexandrova (1999) provide examples of discussions of each motivation for smoking. For example: "to be the adult" can be deciphered as "I want to seem more adult in the eyes of their peers" (because adults are not impressed by that), “all my friends smoke "- in adolescence it is very important to be in the company that you like; sometimes a person begins to smoke against his will, sometimes it happens because some people simply can not refuse; "curiosity" - there may be a lot hiding behind such motivation, those who try to smoke out of curiosity should understand that one sample leads to another, then a third, and so on, and quite unconsciously the person becomes a real smoker. Thus, initiation to smoking was caused mainly by the socio-psychological aspects.

Despite the availability of data on the relationship between maternal feelings and the ability of smoking cessation in favor of the child, our results showed that pregnancy was not a strong motivation for this. Young pregnant women tried to quit smoking, but due to the influence of social (companies of smokers, relatives, the father of the child) and psychological (anxiety, irritability, stress) factors returned to smoking, "I quarrel with my husband ... I get nervous, and I smoke ... ", " ... I can smoke again, when someone upsets me... ". The research has shown that smoking during pregnancy is associated with low level of education, the status of loneliness and severity of nicotine addiction. Substantial proportion of women are unaware of the consequences of smoking during pregnancy. And only when they are being told about unfavorable prognosis of pregnancy outcome, they begin to think about reducing the intensity of smoking "the ultrasound showed that there is not enough oxygen, so I will smoke less ...". Women want to quit smoking, but they often need expert help, and they do not know where to go for it: "I want to quit, but I need to be controlled ... I do not know where they provide such assistance."

During the analysis of the interview we found three categories of people describing the motivation of smoking cessation during pregnancy. The first category of people quit smoking because of the state of health, they noted the fact of sickness after smoking another cigarette during pregnancy. The second category of people who quit smoking during pregnancy were women who realized the responsibility not only for themselves but also for the future of the child. Such focus of personality allows women to cope with addiction without any problems (severe withdrawal symptoms, relapse). And finally, the third category of people for whom an important role in the fight against smoking has had immediate social environment of a pregnant woman - her husband or relatives.

Conclusion. Thus, qualitative researches for a deep study of the phenomenon of smoking and attitude to this issue among pregnant women could warrant paying attention to the seriousness of the situation with the subsequent development of preventive measures in the planning and during pregnancy. In addition, the biopsychosocial factors (health, awareness and support) should form the basis of smoking cessation during the gestational period, which must be considered in the development of treatment and rehabilitation, and preventive antismoking programs. At the stage of registration of pregnancy in female consultation it is necessary to register the presence of nicotine addiction of women for early detection of psycho-emotional, personal characteristics of pregnant women and provide timely psychoprophylactic and correctional services.

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SIMULATION OF SPECTRAL CHARACTERISTICS OF LIGHT FIELD IN MULTI-LAYERED TOOTH TISSUE

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Non-invasive methods for diagnosing biological tissues are of particular interest because they provide a non-destructive tool for studying tissue conditions under normal and pathological states. One of such method is optical one. One of tissue subjects is a tooth. The application of non-destructive means for investigating teeth is important, for example, from day-to-day practice, if one recalls fears that a patient is often undergone while coming to a dentist. A first step for designing optical diagnosing methods as applied to tooth tissue is the study of light fields created by multiple scattering and absorption processes inside and outside the tissue. It is just the objective of this paper.

Material and methods. The tooth tissue is assumed to be a three-layered medium composed of enamel (top layer), dentin (intermediate layer), and dental pulp (bottom layer). All these layers are highly turbid, so one can represent them as uniform infinite slabs in the direction perpendicular to the light incidence one. We will use this assumption in further simulations. One requires to know or to specify optical and geometrical characteristics of the multi-layered medium to describe light fields inside the tissue and backscattered by it. Unfortunately, there are no so much published data on scattering and absorption coefficients, μ_s and μ_a, and on phase function (or its integral parameters) of tooth tissue as the data concerning soft biotissues. The phase function of each layer is usually represented [1] as the sum of the totally diffuse component (with relative weight f_d) and the Henyey – Greenstein function with relative weight $(1 - f_d)$ and asymmetry parameter g (or the mean cosine of the scattering angle).We can mention several works [1 – 3] devoted to experimental or model estimations of the said optical characteristics at several wavelengths λ.

We used the compilation of data [1 – 3] on μ_s, μ_a, f_d, and g for enamel and dentin to simulate spectral light fields in tooth tissue. For intermediate wavelengths, where published results were absent, the literature data were extrapolated and interpolated. As to the dental pulp, it is the connective tissue. Its main optically essential chromophores are blood, interstitial fluid, collagen bloodless tissue, and some other minor components. Optical properties of pulp were assumed below to be the same as those of soft biotissues. According to various their models, scattering and, especially, absorption properties of the soft tissue depend on blood volume fraction C_V (blood volume per tissue volume). Concentration C_V according to estimations varies from 0.01 to 0.3.

We simulated below the diffuse reflectance (usually measured by an integrating sphere) and depth distributions of fluence rate over three-layered tooth tissue. The calculation procedure to do so was published [4, 5] earlier as applied to skin tissue. This method is based on the known analytical solutions to the radiative transfer equation with accounting for multiple re-reflections between tissue layers and surface. The goals of the simulations are to evaluate, whether blood conditions will be seen in the reflected light, and to estimate the light penetration depth in tooth tissue.

Results and discussion. Figure 1 shows the results of the simulations for spectral diffuse reflectance (Fig. 1*a*) and fluence rate distributions over depth *z* (Fig. 1*b*). Fig. 1*a* gives the calculations for varying enamel thickness d_e and a specific dentin thickness d_d = 4 mm. The similar results obtained for other d_d values show that dentin with $d_d > 2$ mm can be practically regarded as an infinitely thick layer with respect to light reflection. In other words, the diffuse reflectance in the visible to the near infrared is essentially independent of d_d in this case. This is apparently due to rather large optical thickness of dentin that can be treated as a semi-infinite layer with respect to reflection. Besides, diffuse reflection is independent of blood volume content C_V. Would one plot points to the graphs of Fig. 1*a* corresponding to varying values C_V of the above range, the points would practically coincide with the respective curves. This tells us that it is impossible to follow blood conditions by using stationary backscattered light or habitual spectral photometric measurements “by reflection”. The situation is understood to be opposite, while one observes transmitted light. In such a case, this light can promote to monitor various blood parameters. Fig. 1*a* gives also the experimental data[20] on diffuse reflectance (symbols). One can see that the experimental results show the similar behavior as our theoretical simulations. This is surprisingly at the first glance, if one recalls that the base for the calculations is rather a rough optical model.

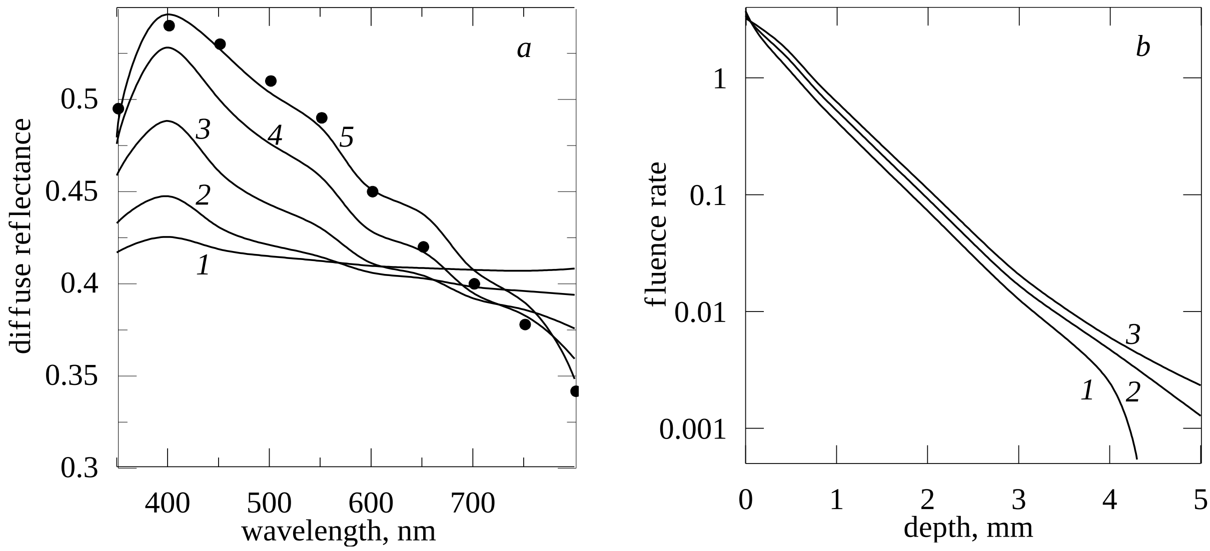

Fig. 1. (*a*) Spectral dependence of tooth diffuse reflectance, calculations (curves 1 – 5) and experiment [2] (symbols), d_e = 0.2 (*1*), 0.4 (*2*), 0.8 (*3*), 1.6 (*4*), and 3.2 mm (*5*), d_d = 4 mm; and (*b*) depth dependence of normalized fluence rate inside tooth tissue at λ = 450 (*1*), 632 (*2*), and 800 nm (*3*), d_e = 0.2 mm, d_d = 4 mm, C_V = 0.15, blood oxygen saturation 0.75

Depth dependences of fluence rate are shown in Fig. 1*b*. Here the ordinate data are dimensionless to be normalized by the incident power density. One can see that fluence rate near the tooth surface up to some fractions of mm is greater than unity. It is due to large backscattered light at the topical tooth region. Light attenuation with *z* increasing can be approximately represented as a weighted sum of several exponential functions with its own exponent for each tooth tissue layer. Note two points with respect to Fig. 1*b*. First, fluence rate in the pulp at the blue – violet wavelengths attenuates quickly with depth, because of high blood absorption there. In the red to near infrared, blood absorption is lower, and the shown dependences do not practically change their slope. Second, one can roughly estimate the light penetration depth z_0 in tooth tissue, which is on the order of 2 mm in the visible to near-infrared. Here z_0 values are assumed to be the depths, where the fluence rate decreases by 10 times as compared with that incident to the tooth surface. It is understood also from the data of Fig. 1*b*, why blood optical characteristics do not show themselves in the diffuse reflectance. The point is that light reaches the pulp being highly attenuated (by 3 to 4 orders of magnitude depending on the dentin thickness) to make a negligible contribution to stationary backscattered fluxes.

Conclusion. The theoretical evaluations based on a simple tooth tissue optical and geometrical model have showed that light fields backscattered by the tissue are defined by the enamel and dentine parameters to be essentially independent of dental pulp ones. This tells us that it is practically impossible to observe pulpal blood conditions by using reflected light. The fact is due to the high optical thicknesses of enamel and dentin layers shadowing light interaction with pulp. The estimations showed also that light penetration depth into a tooth is about 2 mm over visible to near infrared spectral range.

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THE HPV INFECTION MARKERS IN DIFFERENT SKIN TUMORS

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Human papillomavirus (HPV) infection is one of the most widespread in different countries. It is caused by zoonotic pathogens, i.e. transmitted from person to person through sexual contact, through vertical transmission from mother to fetus (transplacentally), by household and autoinoculation (self–infection).

It is known that HPV is a DNA–containing virus. Generally there are about 200 types of HPV, from which 80 types are more studied. They lead to the development of the papillomatosis and other tumors of the skin and mucous membranes, with a chronic recurrence course, widespreading, highly contagious [1-5].

It was found that certain types of HPV can infect a well-defined type of epithelium and cause characteristic changes. It has been shown that HPV is the primary trigger for the development of cervical cancer, benign and malignant skin tumors (such as basal cell carcinoma and squamous cell carcinoma) and mucous membranes (rectum, larynx). Currently a large number of factors are found, including environmental, which are contributing to the malignant transformation of cells infected by a virus: chemical factors, physical (UV radiation and other types of ionizing radiation), disorders of the immune and endocrine systems.

The purpose of the work was to investigate the presence of human papillomavirus-associated markers in various tumors of the skin identified in the biopsy and surgical material in the Health Care Institution "The City Clinical Pathology Bureau" in Minsk in 2013-2014 years.

Material and methods. The histological slides of biopsy and surgical samples of different skin tumors stained with hematoxylin and eosin were studied microscopically to determine the HPV infection markers (koilocytosis and others). The age and gender specificity were taken into account.

The age range of patients was considerable – from 18 to 93 years (the children's material was not investigated). The HPV markers were easier determined in benign tumors that was probably connected with the biological characteristics of the virus – the ability to replicate in a highly differentiated epithelium.

Results and discussion. All tumors were distributed according to the modern classification of the WHO (2006).

The basal cell carcinoma was presented by superficial basal cell carcinoma (2 cases), nodular basal cell carcinoma (1), micronodular basal cell carcinoma (1), infiltrating basal cell carcinoma (1), fibroepithelial basal cell carcinoma (2), basal cell carcinoma with adnexal differentiation (1), basosquamous carcinoma (1). The basal cell carcinomas were composed of small cells and it was difficult to reveal the typical signs of human papillomavirus infection as the koilocytosis, presence of multinucleated cells, intranuclear and intracytoplasmic inclusions. It was easier to detect them in more differentiated cells in border epithelium or in the foci of differentiation to the adnexal or squamous cells.

In unspecialized and verrucous squamous cell carcinomas (4) HPV markers were significantly expressed in two cases in many areas, which probably formed the basis of tumor development. There were visible dysplastic changes of different degrees and the transition to a cancer. In two cases, these changes were not detected. However, this could be due to the fact that the slides presented only cancer growths without transition zones. In some forms of squamous cell cancer manifestations of viral infection were mild – in the acantholytic squamous cell carcinoma (1), spindle-cell squamous cell carcinoma (1) and adenosquamous carcinoma. The pseudovascular squamous cell carcinoma was absent in our observations.

In such lesions as Bowen disease and Bowenoid papulosis the markers of the HPV infection are usually well defined. The same situation was in our observations of two cases of the Bowen disease and one case of the bowenoid papulosis.

In actinic keratosis (2) the pronounced stromal elastosis was a background process. Cellular atypia was expressed in the basal layer. Perhaps this is why the markers of infection have not been determined.

We have not found arsenical keratosis and PUVA keratosis in biopsy and surgical material studied in the City pathology bureau during the last year.

It is well known, that signs of HPV infection are well expressed in verrucas. In our study, the HPV markers were easily detected in all 6 cases of verruca vulgaris, verruca plantaris and verruca plana.

The acanthomas were presented by 1 warty dyskeratoma, 2 lentigos simplex, 7 seborrhoeic keratosis, 1 clear cell acanthoma and 3 keratoacanthomas. The virus-caused changes have been sometimes presented only in individual cells and were questionable, but in others they were well evident.

The adnexal tumours usually had no markers of viral lesions in the glandular component with apocrine and eccrine differentiaton of both benign and malignant types. There were 1 tubular carcinoma, 1 malignant mixed tumour, 1 mucinous carcinoma, 1 digital papillary carcinoma and 1 adenoid cystic carcinoma. Mild symptoms of HPV were sometimes defined in the covering stratified squamous epithelium, which bordered close to the tumor. If this relationship between tumor cells and the surface epithelium was absent, the viral markers were not detected. Unfortunately, we did not found any microcystic adnexal carcinomas, porocarcinomas, spiradenocarcinomas, hidradenocarcinomas, apocrine carcinomas, Paget diseases and extramammary Paget diseases in the last year material.

The same situation was observed in benign tumours with apocrine and eccrine differentiation: 1 hidrocystoma, 1 poroma, 5 hidradenoma, 1 tubular adenoma, 1 tubular papillary adenoma, 2 syringocystadenomas papilliferum, 2 hidradenoma papilliferum, 2 mixed tumour (chondroid syringoma). The stratified squamous epithelium which covered tumors and was associated with them displayed the viral markers of the varying degrees. Sometimes these manifestations were expressed so intensive that resembled the warts. In the deep lesions (1 syringoma, 1 syringofibroadenoma, 2 spiradenoma, 2 cylindroma) the viral markers were not identified.

In tumors with follicular and sebaceous differentiation the viral markers were also frequently detected in the surface epithelium more often, but with different intensity. In our study we investigated 1 proliferating tricholemmal tumour, 3 trichoblastomas, 2 pilomatricomas, 1 tricholemmoma, 1 trichofolliculoma, 1 sebaceous carcinoma, 2 sebaceous adenomas and 2 sebaceomas. Such tumors as pilar sheath acanthoma, tumour of the follicular infundibulum, fibrofolliculoma / trichodiscoma and cystic sebaceous tumour were not included in the analyzed material.

Conclusion. The HPV infection is broadly spread over the country and is associated with the wide range of benign and malignant tumors of the skin.

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PARASITOLOGICAL ASSESSMENT BY HELMINTHIASES OF THE POPULATION IN SOLIGORSK REGION

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Helminthes have multiple pathogenic effects on human health. This problem is rather essential in Belarus due to the geographical position of the country and high percent of the population occupied in the agricultural sector [1].

The purpose is to study ecological and parasitological degree defeat helminthic diseases of townsmen of Soligorsk and Soligorsk district and to analyse dynamics of occurrence of helminthiases.

Material and methods. On the basis of Soligorsk regional center of hygiene and epidemiology the evaluation of the helminthes infection of the population of Soligorsk region (Belarus) in 2004–2013 years was carried out.

The material for the detection of worms and their eggs primarily serve the feces of the patient [2]. For detection of helminthes also can be used duodenal contents, sputum, muscle, urine and in some cases blood. Feces for analysis must be delivered within one day after its release [3].

The most common methods for detection of intestinal helminthes infection are:

- ✓ direct stool examination (used for detection in feces whole helminthes, their fragments to the naked eye or by using a hand magnifier);
- ✓ Kato-Katz technique (used for the diagnosis of ascariasis, trichocephalosis);
- ✓ method of masking tape (based on the use of transparent tape (1.5 - 2 cm) with a sticky layer).

Results and discussion. During the investigated period three species of helminthes were registered: human roundworm (*Ascaris lumbricoides*); pinworm usual (*Entherobius vermicularis*); human whipworm (*Trichocephalus trichiurus*).

The most widespread helminthosis in the Soligorsk region was entherobiosis. The frequency of occurrence of *Entherobius vermicularis* was 85,2% in 2005 and 99,4% in 2013 out of the total number of helminthes.

The results of the study indicated that overall incidence of the helminthoses per 100000 people in Soligorsk region has a steady tendency to reduce (R^2=0,899). In 2005 the rate of the helminthes infection per 100000 people was 710,1; whereas in 2013 it was 266,5. The reduction of infections could be due to the high-quality preventive measures as well as effective specific and non-specific therapy.

Enterobiasis is more common among villagers in comparison with the urban population, because they are more connected with agriculture and disregard the rules of personal hygiene. For urban population: minimum in 2013 – 0,8%, maximum in 2006 – 2,9%. For villagers minimum in 2010 – 1,7%, maximum in 2004 – 7,1%.

The incidence of the *Ascaris lumbricoides* and *Trichocephalus trichiurus* was 14,7% and 0,1% in 2005; 0,6% and 0% in 2013 out of the total number of helminthes correspondingly.

Conclusion. Case rate analysis by helminthic invasions of townsmen Soligorsk and district is carried out. Predominant kinds of helminths are taped and the tendency of depression of helminthic diseases is shown.

Parasitic worms have a diverse pathological effects on the health of the population and cause significant economic damage. The incidence of parasitic infection depends on the quality of preventive measures, specific and nonspecific therapy, as well as the completeness and quality of the coverage survey of the various populations.

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FEATURES OF THE PSYCHOLOGICAL STATUS OF OFADOLESCENTS WITH THYROID CARCINOMA

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As a result of the accident at the Chernobyl nuclear power plant April 26, 1986 release of significant quantities of radioactive substances has occurred into the environment, which led to the radioactive contamination of areas close to the station, areas of Russia (Bryansk, Kaluga, Orel and Tula regions), Ukraine (Kharkiv, Dnipropetrovsk and Donetsk regions), Belarus [1, p. 43-44].

Due to the impact of iodine radionuclides in the early stage of the accident and the lack of time adequate measures to protect the thyroid gland since 1990 Russia, Ukraine and Belarus have started to register an increased incidence of thyroid cancer, especially among teenagers and children [2, p. 12-20].

Material and methods. An important parameter in the safety of life of patients with any type of pathology is the psychological aspect [6, p. 128] The main types of violations of the psychological status of patients with thyroid carcinoma are asthenia, anxiety and depression [3, p. 139-167]. There were an analysis of some indicators of psychological status (anxiety level using the test Sheehan, the level of depression test Beck, Eysenck personality to identify the psycho-emotional state) in 92 adolescents aged 13-17 years with thyroid carcinoma and 92 adolescents aged 13 -17 years in the control group.

Results and discussion. There were low levels of neuroticism in adolescents with thyroid carcinoma, which may indicate a low impulsiveness, sensitivity to information from the outside, it is not excluded the effect of regular psychological counseling and psychological rehabilitation; adolescents main group index of neuroticism is fixed at the mean value. There was an analysis of the percentage (%) of the frequency of occurrence of high levels of anxiety and depression.

This analysis shows the level of anxiety about the different levels of anxiety in both groups: in the main group, more than half of adolescents have symptoms of anxiety (54%) and only 14% were found troubling concerns; in the control group, 82% of adolescents low anxiety level and only 18% show signs of anxiety (10% - mild, 8% - severe).

Analysis of data on the degree of anxiety indicates different levels of depression in both groups: in the main group there are 61% varying degrees of depression (50% mild, 2% moderate and 9% severe depression), and 39% with no depression; in the control group, 84% of teenagers are not registered with depressive symptoms, 16% of teenagers have depression mild, which may be due to the upcoming exams [4, p. 23].

Analysis of the degree of neuroticism shows the differences between emotional stability or instability of the power of the nervous system in adolescents of both groups in the main group 41% of teenagers has an average degree of stability (there is a lack of high tension, anxiety, a great adaptation to external factors), 38% - low level and 21% higher rate of neuroticism (observed stiffness in contact with people, the scattering of attention); in the control group, the majority of respondents (68%) is with low neuroticism, 23% has the average degree of the index, 9% shows a high (8%) and very high (1%) the degree of neuroticism (corresponds to emotional sensitivity, extreme impulsivity, severe mood swings), which may be explained by the upcoming exams. Scale lies shows how sincere were responsible.

Teens in the main group (67%) answer honestly than adolescents in the control group (47%). Insincerity in the responses may indicate some demonstrate the behavior and orientation of the test for social approval [5, p. 167].

Conclusions. Thus, the submission to the following conclusions:

1. In adolescents with thyroid carcinoma anxiety disorders are significantly more frequent than in the control group;

2. Teenagers with thyroid carcinoma were significantly more than the control group, there are levels of depression requiring psychological treatment;

3. Teens with high levels of anxiety and depression, both with thyroid carcinoma and without it, need psychological assistance.

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HUMAN PERSPIRATION EVALUATION BASED ON UTILIZATION OF CAPACITIVE INTERDIGITAL TRANSDUCER AND SWEAT ABSORBING CELLULOSE SAMPLE

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Currently, human perspiration evaluation in health (sweat glands reaction to stress or increase in physical exercise) and disease (hyperhidrosis) [1] is a question of present interest. An alternative approach to this problem is utilization of capacitive method for human skin moisture measurement [2] and absorbing cellulose test sample.

Material and methods. Evaluation methods for interdigital transducer capacitance vs moisture content of sweat absorbing cellulose sample placed upon the transducer include the following stages:

1. Preparation of trial subject skin surface (forehead) under investigation for securing the cellulose sample: skin surface treatment with 70% ethanol in order to remove dirt and cosmetics.
2. Securing the cellulose sample on previously prepared trial subject skin surface using medical adhesive tape.
3. Trial subject performing aerobic exercise for 10 minutes.
4. Removal of soaked cellulose sample from trial subject skin surface and measurement of transducer capacitance vs cellulose sample placed upon it (capacitance of *"capacitive transducer + cellulose sample + sweat"* system).
5. Sweat amount (in *mg*) exuded in given interim evaluation using experimentally obtained data (fig. 1).
6. Relative moisture content (in *percent*) calculation using equation:

$$RH,\% = \frac{m_{moisture}}{m_{dry} + m_{moisture}} \cdot 100\%,$$

where $m_{moisture}$ – moisture (sweat) mass in cellulose sample, mg; $m_{dry} = 10$ – dry cellulose sample mass, mg.

The trial group consisted of 10 people (women aged 18–20) doing aerobics. During capacitance measurements the cellulose sample was placed directly on the transducer under uniform pressure (about 1.5 N) generated by special spring mechanism. The experiment lasted approximately 20 minutes. After each capacitance measurement we washed the transducer with 70% ethanol and dried it for one minute. We used the following materials during the experiments: E7-20 LCR meter for *"capacitive transducer + cellulose sample + sweat"* system capacitance measurement, factory fabricated *640x7000* capacitive interdigital transducer, (11±0.5x11±0.5x0.19) mm cellulose samples.

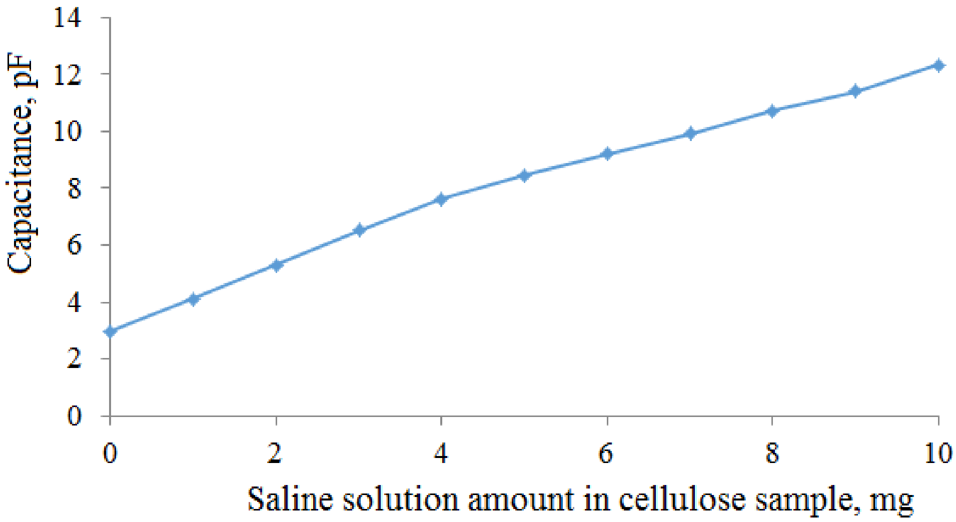

Fig. 1 – *640x7000* interdigital transducer capacitance vs saline solution amount absorbed into cellulose sample

Results and discussion. According to previously outlined methods we conducted the research of 640x7000 transducer capacitance vs moisture content of sweat absorbing cellulose sample placed on the transducer (table 1).

Table 1 – Capacitance (C), exuded sweat amount and relative moisture content (RH) of cellulose sample.

Trial subject #	Capacitance (*C*), pF	Exuded sweat amount, mg	Relative moisture content (*RH*) of ce sample, %
1	5,36	2,0	16,7
2	6,12	2,8	21,9
3	3,47	0,4	3,8
4	3,0	0,05	0,5
5	6,54	3	23,1
6	7,30	3,7	27
7	3,23	0,15	1,5
8	12,04	9,7	49,2
9	5,49	2,1	17,4
10	7,43	3,8	27,5

Conclusion. As a result of conducted experiments we can conclude that it is feasible to use the developed human sweat amount evaluation methods (using 640x7000 capacitive interdigital transducer and sweat absorbing cellulose test sample) in practice (sports and clinical medicine) which in turn allows us to obtain more objective data because of lack of ohmic contact between transducer and human skin.

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BEHAVIOR OF PROANTHOCYANIDINS INDICATOR REACTION ON CHROMATOGRAPHIC PAPER

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When we conducted a qualitative analysis of medicinal plant material, test was to differ in quickness of reacting, rapidity, in possibility of simultaneous analysis of several tests.

Aromatic aldehyde (4- (n,n-dimethylamino) cinnamic aldehyde) was widely used for the quantitative detection of proanthocyanidins) [1,2,3].

We chose the reaction of proanthocyanidins with aldehydes with Schiff bases to determine proanthocyanidins with the help of the test-strips (visual-test detection) as a color reaction.

The aim of the study is to find out the possibility of using chromatography paper as the reacting medium for the interaction of proanthocyanidins with aromatic aldehydes.

Material and methods. Analytes: pharmaceutical substance (catechin), proanthocyanidins of Comarum palustre L., Thuja occidentalis L.

Excipients: ethyl alcohol (volume fraction 96%); reagents of the qualification h.ch.: sulfuric acid were used to control the acidity of the applied solutions.

Reagents for immobilization in chromatography paper. We used 0,1% vanillin solution in 96% ethyl alcohol (m/v).; 2.0% solution of DMAKA in 96% ethyl alcohol (m/v).

Preparation of test-strips: chromatography paper was impregnated by immersion of one of the mentioned solutions.

In the solutions we added a solution of 10% sulfuric acid (test-strip with vanillin) in the ratio 1:1; 6N sulfuric acid solution (test-strip with DMAKA) in a ratio of 1: 1.

Results and discussion. Test strip with vanilla or DMAKA was immersed in the solution of proanthocyanidins for 10 seconds to study the indicator reaction.

Behavior of the color reaction. The test-strip, which contained vanillin or DMAKA in contact with the solutions of medicinal plant material, containing an amount of proanthocyanidins, acquired red coloring with vanilla and blue coloring with DMAKA.

A test-strip with vanillin we heated at the temperature of 100 ° C for 30 seconds to form a colored product of the indicator reaction. The color was maintained for 10 minutes.

A test-strip with DMAKA we kept at room temperature for 30 minutes to form a colored product of the indicator reaction. The color was maintained for 60 minutes.

Conclusions. Aromatic aldehydes (vanillin, DMAKA) which were immobilized to the chromatographic paper, can be used as reagents for the visual-test detection of proanthocyanidins. Sustained analytical effect appears through the formation of Schiff bases.

The application of the proposed test-strips can easily be adapted to determine the proanthocyanidins in other plant objects and also extracts from medicinal plant material (infusions, decoctions, tinctures, extracts).

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ECOLOGICAL, BIOLOGICAL AND GEOGRAPHICAL STUDY OF THE RATIONAL USE OF THE RESOURCE POTENTIAL AND ENVIRONMENTAL PROTECTION

CORRECTIVE INFLUENCE OAK SILKWORM PUPAE EXTRACT ON THE HORMONE-METABOLIC PARAMETERS OF INSULIN RESISTANCE IN THE EXPERIMENT

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Actual problems of biology and medicine is growing in sync with the technical progress and to identify the incidence of insulin resistance in the form of metabolic syndrome, diabetes, obesity. Development of insulin resistance and metabolic syndrome contribute to chronic neuro-psychological and physical stress, the effect of adverse environmental, industrial and other factors that lead to hormonal and metabolic changes designed to increase energy production in order to provide adaptive processes. Because MS is a biological problem that has arisen as a result of a person's life in an industrial society, it is advisable to conduct a search of substances from natural objects selected during evolution for the purpose of long-term adaptation of living organisms to changing conditions, has an antioxidant effect, can prevent the development of insulin resistance at the level of membrane reception of hormonal signal of gene expression and function of transcription factors. The role of such substances can perform components oak silkworm pupae content, which discovered antioxidant, bacteriostatic, immunomodulatory and cytoprotective system that prevents damage to the molecules during 8 months of diapause.

The work purpose: establish corrective influence oak silkworm pupae extract on the hormone-metabolic parameters of insulin resistance in the experiment

Material and methods. Modeling insulin resistance was carried out by the content of rats on high-fat diet by Lieber-De Carli for 3 months. The drug was administered intragastrically by gavage daily for the third month of the playback and insulin resistance in a dose of 7 μg of free aminoacids/100 g body weight. From the oak silkworm pupae was obtained by triple drug extraction and boiling 0.9% sodium chloride solution and standardized content of free amino acids [1]. Methods of research: biochemical, immunofermental, radioimmune, statistical.

Results and discussion. Established that the high-fat diets cause the development of insulin resistance: have increased body weight of rats in the 2-fold, the concentration of glucose by 25.8%, insulin by 87%, the coefficient of Homa at 210%, the concentration of TNF-α by 7.2 times, corticosterone 1,5 times and reduced adiponectin concentration by 1.2 times. It was established that during the development of insulin resistance were activated glycogenolysis, inhibited glycolysis and oxidative branch of the pentose phosphate pathway. Pyruvate dehydrogenase activity was increased 1.8-fold, and the activity of α-ketoglutarate dehydrogenase was reduced by 1.6 times, that signaled a more intensive transformations at the level of isocitrate, the physiological role of which is the regulation of glycolysis by changing the level of citrate and participation in the NADPH-dependent processes (lipid synthesis, neutralization of xenobiotics). With the development of insulin resistance were activated gluconeogenesis and non-oxidative branch of the pentose phosphate reaction path. In the simulation of insulin resistance have been identified biochemical signs of steatogepatosis: hepatic triglyceride content was increased by 3.0 times and the cholesterol content of 3.2 times. It has been established that feeding rats high-fat food for three months resulted in increased levels of malondialdehyde 96% and caused a decrease in the level of reduced glutathione to 77.5%.

The introduction of the drug from the oak silkworm pupae on the background of feeding rats high-fat food had a positive effect: body weight decreased by 33.2%, hyperglycemia – 12%, coefficient of Homa – by 34.6%, the concentration of insulin – 26.9% corticosterone level – 35.7%. Was identified normalizing effect of the drug from oak moth pupae on the activity of glycogen phosphorylase, phosphoglucomutase, fructose-1,6-bisphosphatase, glucose-6-phosphatase, transketolase, hexokinase, phosphofructokinase and other enzymes of carbohydrate metabolism. The preparation of oak silkworm pupae warned development steatogepatosis liver, probably due to the suppression of oxidative stress in rat liver cells.

Conclusion. The result of the research obtained by the preparation of oak silkworm pupae, which is low, close to the homeopathic dilutions, hindered the development of insulin resistance in the experiment [2]. The data gained can be used while creating medical remedies for prophylaxis and treatment of insulin resistance, also for the improvement diagnosis methods of metabolic syndrome and insulin resistance.

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NATURAL CAPITAL AND GREEN ECONOMY

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Globalization touches on many aspects of economic, social and environmental life. On the one hand economic growth has raised living standards and human well-being. On the other hand it is connected with negative features: degradation of natural capital and production of waste and emissions, unequal consumption with too much industrial and agricultural production. Therefore these problems have determined increasing attention and changing prevailing economic paradigm for the green economy as economy concerned with environmental, social and economic sustainability in which restoration and maintenance of natural capital play important role.

The purpose of the report is to describe features of natural capital, its role in sustainable development, to develop the theoretical foundations of green economy as specific socio-economic category that provide efficient approaches and instruments for using and restoration of natural capital.

Material and methods. In research were used methods of abstraction, comparative, retrospective, systems analysis. Conceptual frameworks are theoretical views of different economic schools on the role of natural factors in the economic system, the reports of international organizations such as UN, UNEP and etc.

Results and discussion. The rate of natural capital degradation has been greater than its renewal rate. Processing this capital into manufactured goods is gradually destroying natural resource stocks and ensuring goods and services. Loss of natural capital can also lead to a concomitant decrease in social and human capital.

Natural capital is the basis for economic activity and for sustaining life. It produces a significant portion of the real goods and services of the ecological economic system.

According to [1] natural capital is a stock of yields a flow of valuable goods or services into the future. Authors differentiate two types of natural capital: renewable or active natural capita (it is self-maintaining using solar energy, for example, ecosystems), and nonrenewable or inactive natural capital (fossil fuel, mineral deposits).

There are four functions of natural capital:

– resource function is providing natural resources of goods and services;
– function of providing environmental (ecosystem) services including ensuring the nature of various kinds of regulatory functions,
– services of nature associated with the aesthetic, ethical, moral, cultural, historical aspects,
– ensuring human health and the environment [3].

The natural capital concept is essential in promoting environmental issues to ensure that they will be taken into consideration in economic decision-making processes. It also reflects the limiting role of natural resources and ecosystems in economic development. In current time restoration of natural capital is a key strategy of meeting ecological objectives and enhancing the human well-being.

Green economy has emerged as a prominent approach to addressing the human causes of global environmental and climate change through the transformation of the economy towards cleaner production and consumption processes. A key concept in approaching green economy is recognition that economic social and environmental systems are actually complementary. For those focusing on the environment, green economy is a way to reduce environmental stress. It can offer increased profits and competitiveness and can contribute to ensuring that basic needs are met.

According to UNEP the green economy is one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities [2, p. 16]. Also UNEP has provided some fundamental elements defining core principles of the green economy: investing in natural capital; decarbonizing the economy; creating green jobs.

Green economy purposes are human welfare and reduce environmental risks over the long term. The current global environmental challenges require a major transformation. Green economy seeks to promote financial, business and other economic transactions without depending on or damaging the environment. The main features of its transformation are low carbon growth, resource efficiency, conservation, fundamental changes in investment and technologies, social inclusivity and poverty reduction, apparently offering win-win opportunities to improve the integration of economic development with environmental sustainability.

Green economy actions include reforming the economic incentives framework to promoting sustainable infrastructure development, facilitating investments in natural capital, human capital formation and ensuring a fair and inclusive transition.

Conclusion. Thus the issues of ecological problems have moved to being a central place in economic policy. The concept of green economy is a response at negative effects of economic development on environment. It provides environmental, social and economic sustainability which is based on efficient system using of natural capital.

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USING OF GEOMARKETING IN NATURAL AND RESOURCE POTENTIAL

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Natural and resource potential is among the most important factors of economic development of the region and country in general. The directions and scales of development and placement of productive forces, first of all resource-intensive productions depend on a state and security with natural resources.

The modern period of development of society is characterized by sharp increase in use of natural resources without their real restoration. Prevention of irreversible consequences requires the rational use of natural resources including their assessment and the accounting of a state. These two problems can be solved with attraction of geomarketing.

Geomarketing is the concept uniting in itself a certain complex of tools and methods on collecting, processing, modeling, the analysis and visualization of spatial information for operational and strategic tasks of the companies. Geomarketing arose on a joint of two sciences: marketing and geoinformatics, also became the new direction of the marketing analysis with application of the methods of geoinformatics realized in GIS.

The geomarketing purpose is an increase of efficiency of business on the basis of existential studying of real diverse data.

Material and methods. The geomarketing environment represents set of economic, social, demographic, cultural and other factors, i.e. a combination of forces in a certain territory where the company can have a great influence on realization of the marketing function. We cannot forget that all factors of the geomarketing environment are located within one territorial unit that gives them certain integrity. However the firm is not only influenced by factors of the geomarketing medium, but also influences it itself. Thus the whole geomarketing (geoinformation) system - GIS in which the main link is the company is formed.

So, their classification is necessary for the solution of a problem of an assessment of resources. It is carried out on the basis of use in production of goods and in the non-productive sphere.

In particular, the resources used by the industry can be subdivided into the following groups:

- Energy groups;
- Raw materials for receiving constructional items of production appointment;
- Raw materials for receiving other products of production appointment (for example, lubricant oils);
- Raw materials for production of direct consumption items(water, petroleum and petroleum products).

The non-productive sphere includes resources of a direct consumption, indirect use, and esthetic appointment.

The problem of formation of the resources and their size is solved on the basis of geomarket researches and the subsequent economic estimates. Use of the **geomarketing** investigations allow to accumulate information on resources and to quickly process it at the solution of various class of tasks of rational and effective use of natural resources.

Besides, geomarketing approach can be applied to justifications of the building concepts of large commercial objects and business centers, being guided by the analysis of the market in general around the city and in a zone of direct proximity from object, in particular.

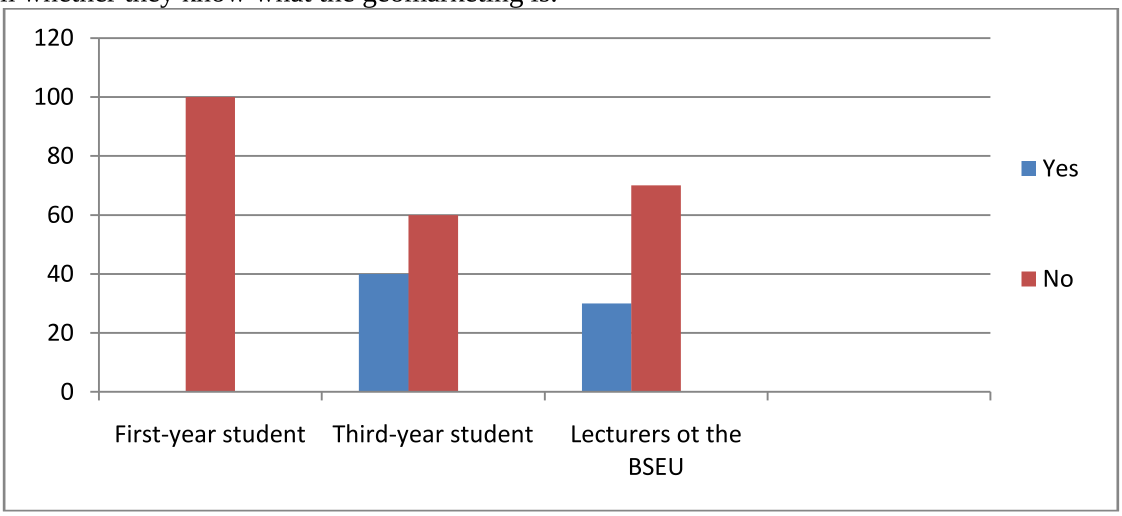
In general, geomarketing is applied to the solution of such major tasks:

1) definition of the most favorable zones for opening of new shops, branches, offices
2) identification of the reasons of reduction of the client traffic leading to falling of volumes of realization
3) forecasting of future trade zone and extent of its territorial coverage
4) an exception of negative influence of shops within one network at each other, in connection with a mutual overshoot of their trade zones
5) ensuring maximum efficiency of the outdoor advertizing placed by the companies

Results and discussion. Perhaps, geomarketing is the only fullest and really effective remedy of any spatial analysis of the business structures distributed in a certain territory (networks, various outlets, branches and so forth) and the factors influencing their work (from population density and passenger traffics in the subway to the indirect simulated indicators of accommodation zones of the rich population and so forth).

Unfortunately, in spite of the huge importance of geomarketing, it is not developed in Belarus.

We conducted survey of students of the 1st and 3rd courses, and also teachers of BSEU, asking them whether they know what the geomarketing is.



As showed poll very few people know about existence of such concept as geomarketing, is one more reason for which geomarketing can't find application in Belarus.

Conclusion. The main thing in geomarketing - synergetic effect which consists in possibility of the solution of such marketing tasks which separately can't solve neither GIS, nor marketing information systems and technologies.

The prefix "гео" in geomarketing reflects not so much the principle of a binding of objects of geomarketing to points of a terrestrial surface and to cards, how many ability to integrate all types of data into the uniform information environment and complex processing of various data in uniform system that in other information or marketing technologies it is impossible.

As the technology of information processing geomarketing gives the additional chance of visual information processing due to complex application of methods of business graphics and thematic electronic cartography.

As the technology of data storage, geomarketing demands the new principle of a data structure in the form of attributes and the positioned data, in the form of the connected computer graphics and tables. This technology allows organizing in a new way information search and the solution of a number of tasks.

Visualization of information gives the chance more quickly to form the decision-making given for support and the analysis of a situation.

Geomarketing allows solving a number of ecological, economic, politological problems which can't be solved by any other methods with the same efficiency.

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INFLUENCE OF MITOFEN ON HISTOLOGICAL PARAMETERS OF THYROID BROILER CHICKENS VACCINATED WITH INFECTIOUS BURSAL DISEASE

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Maintenance of homeostasis in adverse environmental conditions carried out by single mechanism which represented by interaction of the neuroendocrine and immune system. Despite of the huge number of studies on the endocrine glands, especially the thyroid gland, in various extreme conditions, their research in modeling situations in which it would have used damaging factors that have not lost their relevance. This is due to the fact that the thyroid gland mediates development non specific reactions to stressful influences, which may caused by the effect of vaccine antigens [1]. Study of the morphofunctional state of the thyroid gland has significant value for revealing the nature of responses of the body. The purpose of our research is studying the effect of the antioxidant drug mitofen on histological parameters of thyroid broiler chickens immunized with infectious bursal disease (IBD).

Material and methods. Research were conducted on 36 chicks were divided into 3 groups, 12 birds each. Birds of the first group was vaccinated with infectious bursal disease vaccine and supplemented with mitofen. This drug is used to chickens in the period from 8 to 42 days of life. At 15 and 22 days of age the chicks in this group were orally immunized with IBD virus vaccine strain of "Vinterfild 2512". Bird second group in 15 and 22 days of age were immunized against IBD virus vaccine. Mitofen not apply. Intact bird 3rd group served as a control. The birds of all the groups were monitored and recorded clinical observation every day.

Samples of thyroids for histological examination were collected on the 7th day after the first, 7th and 14th days after the second vaccination. Material is compacted by pouring in paraffin by the standard technique. Histological sections were stained with hematoxylin and Brachet. In histological preparations were determined: the diameter of follicles, the number in the field of view of the microscope, the ratio of follicles (large, medium, small), the height of the cell diameter of their nuclei.

Results and discussion. In the study of the thyroid gland in the control group of chickens established that 22 days of age the body is characterized by some features stromal and parenchymal structures: the thickness of the connective tissue capsule is 40-42 microns, the fibers are arranged parallel to it, the nuclei of fibrocytes clearly structured. From capsules depart intraorgan layer. Parenchyma of organ characterized by dominated of medium size follicles,thyrocytes forming their cubical wall, their nuclei are round, located in the center of the cell. Thyroglobulin resorption appears as vacuoles, mainly in the border areas of endocrine cells. Small follicles are located mainly on the peripheral portion of the body, groups of 10-12 pieces. Everywhere throughout the parenchyma arranged in circular formations interfollicular epithelial diameter 69,30 ± 0,74 um.

In the thyroid gland 29-day-old intact birds found some increase in the diameter of the follicles. Small follicles singly located in the central part of the body, and the peripheral portions they form clusters of 4-5 follicles. Thyroglobulin resorption active.

In the body of the 36-day-old chicks in the control group the thickness of the connective tissue capsule some increases - 45-47 microns, fibers located outside snug against each other. In the deeper layers, it is found some loosening of fibrous structures. The ratio of follicles of various diameters are not significantly altered. Slightly increased height secretion cells and their nuclei.

In the body of the 22-day-old chicks second group influence morphological vaccine antigen expressed by a higher average diameter of follicles and offset percentage towards large. Their wall formed cells flat shape with a flattened nucleus. Small follicles located in small groups of 5-6 pieces. The average diameter of the follicle was 108,40 ± 0,63 um, pinocytic vesicles of colloid are exclusively on the peripheral areas and absent in the central part.

At day 29 the birds in the thyroid parenchyma noted jumps, crustaceans increase in the mean diameter of the follicles as a percentage of the number of large structures has increased, and the fine reduced. Latest located in small groups (3-4 pieces) between follicles average diameter or singly.

In the body of the 36-day-old chicks 2nd group notes regarding the normalization of thyroid function. This is evidenced by the percentage of follicles with different diameters. Indicator average diameter follicles approaching physiological norm, true to type for this age group. However, the number of small follicles enough high, indicating that some function tension of organ.

In the study of animal organs first group found that in the body of a 22-bird daily average diameter of the follicle is 112,00 ± 0,90 um. Percentage ratio shifted toward the mean diameter of the structures, as well as many small follicles, has large groups of 15-17 pieces between the follicles and interfollicular midsize islets diameter 86,40 ± 0,34 um.

In the body of 29-day notes a slight increase in large follicles and small sharp decline. Group of small follicles everywhere are located throughout the parenchyma of the organ. Each group include 10-15 very small structures - 23,40 ± 0,80 um. In stromal components organ marked increase in microvascular density. In the study of the body 36-day-old chicks first group established significant increase in the number of stromal components - the thickness of the capsule is 98,8 ± 0,76 mm with loosely arranged fibers, between which lie the fat accumulation. Large rare follicles located around the periphery of organ. Percentages smaller follicles increases significantly. They are usually located on the periphery 5-6 pieces per group. There is a growing body of vascularization in both stromal and parenchymal cells.

Conclusion. Immunization of chickens against IBD causes significant restructuring of ocular components of the thyroid gland, as an increase in the mean diameter of the follicles and offset percentage towards large, atrophy thyrocytes with the advent of flat cells overflow follicles homogeneous, not vacuolated colloid. Mitofen used in conjunction with the vaccine reduces the severity of dystrophic and alterative processes in thyrocytes contributes to an earlier recovery parenchyma of the gland.

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LAND SNAILS (MOLLUSCA, GASTROPODA) OF GREY ALDER FORESTS OF BELORUSSIAN LAKELAND

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Grey alder forests are a valuable part of the present plant coverage of Belorussian Lakeland. Although the total square of grey alder forests counts for only 5% [1] of all forest area of the region, this tree species is one of the main components of secondary forests. Different types of grey alder forests (and secondary forests on a whole) formed during the succession after the deforestation of area caused by human activity and natural factors [2]. The land snail composition of such type of forest depends on the type of primary forest, plant association, soil composition, and surrounding biotopes.

The aim of investigation is to detect the land snail composition of different types of grey alder forests.

Material and methods. The material was collected during 2010-2014 years. Total 11 areas of grey alder forests were studied and 1414 specimens of land snails were processed. Land snails are collected by hand and by sewing the litter. In each biotope were took at least three samples. The square of sample is 0,5m^2. The determination of Succineidae and slugs was confirmed by anatomical dissection. The description of the studied forest areas. 1. Incano – Alnetum urticoso-aegopodiosum (Vitebsk reg, vill. Eremino env.); 2. Incano – Alnetum equisetoso-oxasidosum (Vitebsk reg, Ruba vill. env., bank of W.Dvina river); 3. Incano – Alnetum aegopodioso-dryopteridosum (Rossony reg, Mejno vill. env.); 4. Incano – Alnetum galeobdolonoso-aegopodiosum (Rossony reg, Mejno vill. env.); 5. Incano – Alnetum galeobdolonoso- oxasidosum (Beshenkovichi reg, Djagilevo vill. env., bank of W.Dvina river); 6. Incano – Alnetum urticoso-aegopodiosum (border of Liosno and Vitebsk reg, bank of Vimnianka river); 7. Incano – Alnetum coryloso- oxasidosum (Vitebsk reg, Lutchesa railway station env.); 8. Incano – Alnetum rubuso-oxasidosum (Rossony reg, Golnitsa vill. env.); 9. Incano – Alnetum pleurosiosium (Gorodok reg, Proletarsk vill. env.); 10. Incano – Alnetum rubuso-filipendulosum ((Gorodok reg, Konovalovo vill. env.); 11. Alnetum rubuso-aegopodiosum (Miadel reg, Miadel env.)

Results and discussion. During the investigation, within grey alder forests of Belorussian Lakeland, 43 species of land snails were found. This is less them in broad-lived forests (58 species) but exceeds the number of species in aspen forests (41 species). The richest specific composition have biotopes №1 (27 species), №6 (27 species) and №4 (22 species). Then go biotope №3 (17 species) and №8 (15 species). Biotopes №5 and №9 have 13 species each. Least of all species are found in biotope №2, №7, №10 (10 species in each) and №11 (9 species). Only *Cochlicopa lubrica* (Müller, 1774) is detected in all biotopes. Other widespread through studying biotopes species are *Vertigo pusilla* Müller, 1774, *Fruticicola fruticum* (Müller, 1774) (found within 10 biotopes), *Perforatella bidentata* (Gmelin, 1791) and *Punctum pygmaeum* (Draparnaud, 1801). The richest in the quantity of species is Incano – Alnetum aegopodiosum type of grey alder forest (38 species), then goes Incano – Alnetum oxasidosum type (25 species), Incano – Alnetum dryopteridosum (17 species), Incano – Alnetum pleurosiosum (13 species) and Incano – Alnetum filipendulosum (10 species).

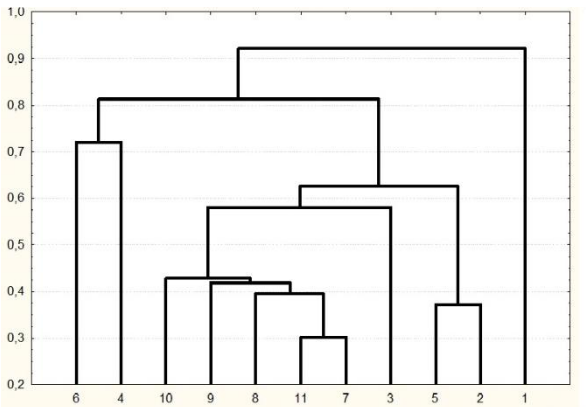

Fig. Cladogramm of similarity of land snail community from different types of grey alder forest (see text for definition).

As the result of cluster analysis the cladogramm of biotope similarity was constructed (Fig.). The closest similarity is high lightened between the land snail communities from biotopes №7-11. Newer the less these biotopes belong to different types all of them have only 9-15 species. This group is close to group of land snail communities №2 and №5 from coastal biotopes. The community of land snails of of Incano – Alnetum dryopteridosum type is close to aforecited communities. The richest communities №1, №4 and №6 form separated groups.

Conclusion. The communities of land snails grey alder forests of Belorussian Lakeland consist of 43 species. The most of species are found in Incano – Alnetum aegopodiosum type of grey alder forest (38 species), least of all – in Incano – Alnetum filipendulosum type (10 species).

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BIOTOPE DISTRIBUTION OF MESOSTIGMATA MITES IN THE URBAN ENVIRONMENT

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Soil fauna is an integral part of both natural and urban ecosystems, which claims special attention for its life support. Soil invertebrates are rather sensitive to mechanical and physicochemical soil disorders, and thus they are one of dynamic and most disturbed components of the urban ecosystem [1, p. 106].

The objective of this research is to study biotope distribution of mesostigmata mites in soils of green zones in the city of Vitebsk.

Material and methods. This research is based on large samplings of soil mesostigmata mites performed in 2009-2010. To characterize mites biotope distribution five biotopes were marked out: 1 - Mazurino Park (motley grass pine forest), 2 - Mazurino Park (deciduous aggregation), 3 - M.F. Shmyryov Park of Partizan Glory; 4 — Yuryeva Gorka woodland park; 5 - Frunze Park.

Findings and their discussion. Following a study of faunal mesostigmata aggregates it was discovered that *P. (P.) lapponicus* is an eudominant in biotope 1 and 4, and dominates in biotope 2 and 5. *V nemorensis* is among eudominants in biotope 1 and 2, and dominates in biotope 5. *P. (P.) wasmanni* is and eudominant in biotope 3 and 4, and is not observed among dominants. *Parasitidae gen. sp.* is and eudominant in biotope 1, and dominates in biotope 2, 4 and 5. *P. (P.) misellus* and *T. ovalis* are once observed among eudominants (in biotope 1 and 5 respectively) and dominate once in biotope 2 and 4, respectively. *R. mandibularis* and *Uropodidae gen. sp.* are eudominants in two biotopes (biotope 3 and 5 respectively), and are not observed among dominants. Finally, 9 species are never observed as eudominants, but they are among dominants as follows: *D. modesta* **-** in biotope 2, 4 and 5; *H. (G.) aculeifer* **-** in biotope 3 and 4; *P. sarekensis* and *Trachyuropoda sp.* **-** in biotope 2; *P. (P.) crassipes* **-** in biotope 3; *Pach. brachyperitrematus* - in biotope 1**;** *P. (C.) fimetorum, V. cervus, V. exigua* **-** in biotope 4.

To determine similarity measure of the biotopes under the research by fauna and abundance Jaccard (K_f) and Naumov (K_n) coefficients were calculated.

Maximal value of faunal similarity is observed in biotope 3 and 5 (33,3%). Acarofauna of biotope 1 with biotope 3 (12,5%), 5 (14,3%) and 4(19,4%) is characterized by minimal similarity.

Coefficient of similarity by abundance indicates that maximal similarity is peculiar to mites' aggregates in biotope 1 and 2 (29,7%), next is acarocomplex 2 and 4 (24,4%); lesser similarity is observed in biotope 2 and 5 (22,0%).

Minimal values of similarity by abundance are notable for biotope 3 and 1 (6,1%), biotope 2 (8,0%), biotope 5 (10,2%).

According to similarity value under Weinstein's coefficient mites' aggregates in motley grass pine forest and deciduous area of Mazurino Park are most similar (biotope 1 and 2, Kw – 8,1).

Probably, it can be explained by immediate proximity of the foregoing biotopes to each other. Acarocomplexes in deciduous area of Mazurino Park and M.F. Smyryov Park (biotopes 2 and 3, Kw – 1,7), as well as acarocomplexes in Frunze Park and in motley grass pine area of Mazurino Park (biotope 5 and 1, Kw – 2,0), are the least similar. Probably, this is due to the fact that Mazurino Park is located in the outskirts of the city, and soils of this Park are little similar with soils of parks located in the center of the city of Vitebsk.

Conclusion. Maximal species diversity of soil mesostigmata mites is observed in biotope 2 (deciduous area of Mazurino Park) (H – 3,07 ± 0,072) with community evenness value - 0,94. Soils colonization density by mites in biotope 2 is also maximal (1500 specimens per sq.m.).

Minimal species diversity and minimal mites’ density is observed in soils of biotope 5 (Frunze Park) – 2,19 ± 0,149, 720 specimens per sq.m.. Mesostigmata community evenness is also the least - 0,79. Such low values of mites’ abundance in this broad-leaved biotope can be explained by the fact that Frunze Park is a popular recreation area among city dwellers, and thus it is constantly being trampled down. Besides, annual disposal of dead leaves deprives soil mites (mostly saprophages) of its essential niche.

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SOME ASPECTS OF IMPROVEMENT OF THE LEGAL PROTECTION OF FAUNA IN THE REPUBLIC OF BELARUS

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According to the Law of the Republic of Belarus "On wildlife" (hereinafter the Law), the wildlife protection includes the protection of wildlife and their habitats.

Protection of wildlife is an activity (including reproduction, earliest check (including resettlement), introduction, reintroduction, introduction, breeding and protection of wild animals), aimed at preserving the spatial, species and population integrity of wildlife, abundance, resource potential and productivity, preventing their destruction or other harmful effects on them.

The habitat protection wildlife covers activities aimed at conservation, habitat restoration wildlife in order to ensure natural reproduction and sustainable use of wildlife.

Protection of wildlife and / or habitats is carried out by the authorized state bodies in the field of protection and use of fauna, other state bodies (organizations), officials of the state forest protection within their jurisdiction, the users wildlife, as well as legal entities and individual entrepreneurs carrying out economic and other activities not associated with wildlife use, but with harmful effects on wildlife and / or their habitat or potentially dangerous to them.[1]

Material and methods. In order to protect wildlife Ministry of natural resources and environmental protection of the Republic of Belarus, local Executive and administrative bodies within their competence may impose restrictions or prohibitions. These can be:

-execution of certain types of wildlife use;

- implementation of certain activities associated with wildlife use;

- the use of wild animals: a separate species; in some areas; in certain period of time; using separate tools seizures wild animals; methods of use of objects of fauna.[3. p 218]

Rare, threatened, endangered on the territory of the Republic of Belarus species of wild animals included in the Red book of the Republic of Belarus. In order to protect wild animals belonging to the species included into the Red book of the Republic of Belarus, Ministry of natural resources and environmental protection of the Republic of Belarus organizes the work on the identification of the habitats of these animals and accounting of these places. Local Councils of deputies on presentation of the corresponding territorial body of the Ministry of natural resources and environmental protection of the Republic of Belarus, agreed with the National Academy of Sciences of Belarus, transmit the identified habitats of wild animals belonging to the species included into the Red book of the Republic of Belarus, under the protection of land users and (or) water bodies. So in Belovezhskaya Pushcha, one of the most important tourist attractions and the most visited national Park in our country, there are 59 species of mammals and more than 220 species of birds, many of which are rare, for example, black stork, crane, eagle , bison,deer, wild boar, lynx, otter, pine marten and other inhabitants of the forest - they are all listed in the Red Book of the Republic of Belarus.[4. p 112]

Results and discussion. The legislation of the Republic of Belarus on wildlife is based on the Constitution of the Republic of Belarus, the present Law and other normative legal acts of the Republic of Belarus, containing norms regulating relations in the sphere of use of objects of fauna. However, despite the fact that today there is a fairly extensive legislation in this area, it has many collisions and gaps need to be addressed.

In accordance with article 1 of the Law wildlife - protected component of the natural environment, renewable natural resource that represents the set of all wild animals, constantly living on the territory of the Republic of Belarus or temporarily living there, including wild animals in captivity.

However, it should be noted that wild animals in captivity, may be subject to separate environmental relations, in particular, for their protection, reproduction, possession, creation of ecological collections. While not applicable to them a number of provisions of the law on the animal world, for example in the field of environmental protection and rational use of wildlife and other

In the current legislation of the Republic of Belarus establishes a different order of protection and use of animal species depending on their role in the ecological system. In particular, it tells about the events on the regulation of the number of certain species of wild animals in order to protect public health, prevention of animal diseases, prevention of material damage to legal and physical persons, the maintenance of species diversity, etc.. While on a specially authorized state bodies in the field of protection and use of wildlife, as well as legal and physical persons that carry out agriculture, forestry, hunting and fisheries, is responsible for monitoring quantity and limitations of animal disease vectors, dangerous to humans. In addition, the legislation separately regulates the procedure for issuing permits for hunting animals of some species to reduce their numbers, as well as remuneration for their destruction (e.g., wolves)

Conclusion. In conclusion, we note that the adoption of the Law of the Republic of Belarus "About animal world" meets the needs of the legal regulation of protection and use of all components of the natural environment and the environment in General. This Law stipulates the need for the development of a number of normative legal acts aimed at the implementation of its provisions, some of which has already been adopted. At the same time, the formation of a high quality, coherent system of law on the animal world is possible only if the elimination of contradictions in the Law.

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THE PECULIARITIES OF TOXOCARA CANIS EGGS DEVELOPMENT IN DIFFERENT HUMIDITY CONDITIONS

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Going through one of the stages of toxocara eggs development in the environment determines that the species belongs to the ecological group of helminthes – geohelminthes. Helminths eggs contained in canine fecal enter the environment (provided the optimal combination of factors get the invasive development stage) and contribute to the contamination and distribution of helminthiases among other animals and people. One of the factors that determines the development character of toxocara eggs is humidity. Investigations in the specified direction have been carried out [1, 2, 3], but the available data are very fragmented and ambiguous. This was the basis for the research.

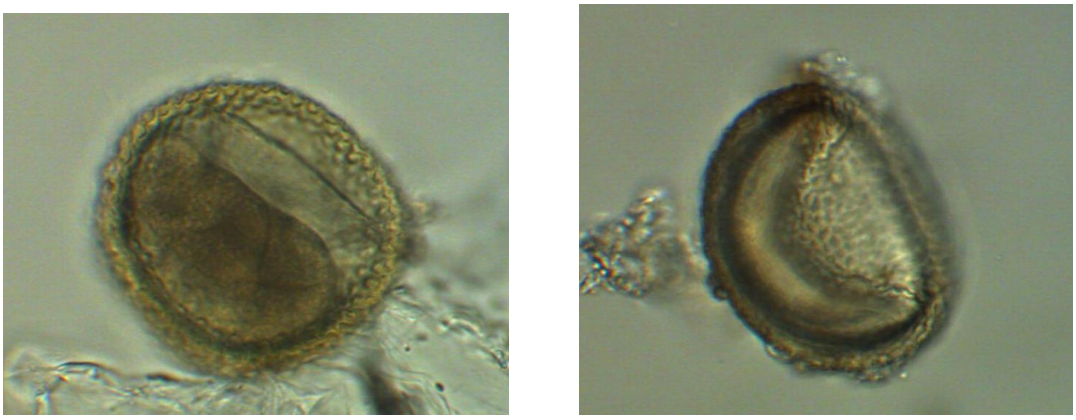
The purpose of the research is to establish the peculiarities of *Toxocara canis* eggs development in the conditions of various relative air humidity.

Materials and methods. Toxocara's eggs were put in fabric pouches (4×5 cm) in amount about 30 000 in each, then they were put in the exsiccator and in thermostat (24,0-26,0°C). Constant relative air humidity was maintained through silica gel and beaker with water. The experience was conducted thrice. 900 eggs (3×(3×100)) have been viewed periodically with the microscope OLIMPUS BX41 (200x… 600x). Viability of uninvasive eggs has been determined by coloring [3], uninvasive – movement of larvae inside eggs. A minimum relative air humidity was considered the humidity at which helminthes eggs passed the full development not less than 50,0%.

Results being discussed. According to the results of the research the minimum relative air humidity for the development of toxocara eggs in the temperature conditions of 24,0-26,0°C is in the range of 55,0-59,0%, when the full development of the eggs occurred in 19 days. By this time 66,60±0,30% of the eggs have reached the larva stage of development at 33,40±0,30% - dead.

The further influence of humidity led to the increase of the amount of dead eggs to 56,55±0,36% in 28 days after the beginning of the experiment. Higher humidity caused acceleration in the development of toxocara eggs, the amount of dead eggs decreased. In conditions of relative air humidity in the range of 69,0-75,0% the full development of the eggs occurs within 10 days, 87,82±0,25% of eggs reached the invasive stage. According to the results the optimal relative air humidity is above 82,0%, when the full development of eggs occurs within 8 days, 95,57±0,35% of eggs is viable. In 28 days 95,02±0,38% of eggs retained viability. Provided the relative air humidity was less than 55,0% the development of the eggs stopped at the stage of 8 blastomeres and in 7 days of observations 100% of eggs were dead.

In 2 days in conditions of low humidity (38,0–44,0%) 94,24±0,22% of the eggs retained viability, in 5 days this number was reduced to 76,21±0,47%, in 7 days – 100% of the eggs dead (there were irreversible morphological changes in the shells of eggs (picture 1.a)). Similar results were obtained in conditions of 49,0-55,0% relative air humidity.



a) b)

Picture 1. – Irreversible deformation of *T. canis* eggs in conditions of low relative air humidity (less than 55,0%): a – uninvasive egg; b – invasive egg, 600x

Invasive toxocara eggs have proven to be more resistant to low relative air humidity than uninvasive (table 1).

Table 1. – Survival of invasive toxocara eggs at 38,0–44,0% relative air humidity and temperature 24,0-26,0°C, %

	Time of study, days			
	5	7	9	11
Viable eggs	90,39±0,25	78,67±0,27	53,02±0,32	–
Dead eggs	9,61±0,25	21,33±0,27	46,98±0,32	100,00

In 9 days more than 50,0% of invasive eggs survived while 100% of uninvasive eggs were dead by this time. The full death (100%) of invasive eggs was observed in 11 days (there were irreversible morphological changes in the shells of eggs (picture 1b)).

Conclusion. Thus, the optimal relative air humidity according to the results of our research should be considered 82% and more, when the full development of toxocara eggs was completed in 8 days, 95,02±0,38% eggs were dead. The reduction of air humidity below optimal caused slower development of toxocara eggs, the amount of dead eggs increased. Invasive eggs were more resistant to low relative air humidity in comparison to the uninvasive ones.

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THE COLEOPTERA (ARTROPODA, INSECTA) COMMUNITIES OF BASEMENT AND CELLAR OF THE EAST BELARUSIAN LAKELAND

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Coleopterous insects live almost everywhere. Many of Coleoptera inhabit the upper layers of the soil, but their larvae and pupae live in the soil all their life. Imago is usually for a short time come to the surface. Many Coleoptera live on plants. Lots of Coleoptera insects can live in basements and cellars. Many beetles are pests that destroy or spoil stored in cellars foods. Some species of Coleoptera living in cellars and basements can be useful. They are natural enemies to slugs and snails, including ground beetles and other insect. Some are neutral, for example, Typhaea stercorea who eats mold. Thus, the beetles that inhabit in basements and cellars could have a material impact on the timing storage of stocks, both positively and negatively. In addition, some species of Coleoptera can be indicators of the ecological status of the basements and cellars (the presence of mold, slugs and other). Despite the significant need to explore Coleoptera of cellars and basements, in the Republic of Belarus was held a few of research on these organisms, and in the Dubrovno district them was not at all, so this research is relevant in nowadays.

The aim of investigation - to identify the species composition of Coleoptera living in basements and cellars in the east of Belarusian Poozerie.

Material and methods. The material was collected with the use of traps Barber containing 9% acetic acid solution. Data were collected between September and December of 2013. Glass jars of 0.5 liters were used as traps. Investigations were carried out in the territory of Dubrovno district. Three biotopes have been investigated: a basement in a residential apartment building with a dirt floor and concrete walls (biotope number 1), in the cellar is not a building with a dirt floor and wooden walls (biotope number 2) and a cellar in a building c dirt floors and wooden walls, fortified stone masonry (biotope number 3). For comparison, data for the cellar in the village Dobrye Gory (biotope number 4), Beshenkovichi district, and date of three cellars in the village Ivanovo, Vitebsk district (biotopes № 5-7) were drawn.

Results and discussion. Checking of the traps in the cellar that located in the uninhabited house has shown that potential species of cellars are synanthropic insects and directly depend on cohabitation with a man, because no one of Coleoptera have been registered in this cellar. In this study, 32 traps Barber have been checked, 239 specimens of nine families of Coleoptera of beetles have been collected and identified: Histeridae, Carabidae, Staphylinidae, Cryptophagidae, Ptinidae, Geotrupidae, Mycetophagidae, Latridiidae and Cholevidae.

On the basis of available material differences of Coleoptera complexes from basements and cellars were clearly observed, while significant differences between the various types of cellars were not identified.

Biotope number one was the most favorable for the existence of the species of the family Ptinidae. Biotope number two is characterized by the smallest measure of catchability, there were caught only two representatives of the family Carabidae and two individuals from the family Geotrupidae. In biotope number three dominates family Cryptophagidae, their presence indicates the processes of decay and growth of mold in the cellar. Biotope number four as biotope number one, was the most favorable for family Ptinidae, on this basis, we can say that the biotope number one and biotope number four are similar to their ecological status. Biotopes number five and number six are also very similar. The most favorable conditions for living in these biotopes have developed for beetles from the family Staphilinidae, in these biotopes are also found many beetles from the family Ptinidae.

Conclusion. During the study, 239 specimens of Coleoptera of nine families were collected and identified: Histeridae, Carabidae, Staphylinidae, Cryptophagidae, Ptinidae, Geotrupidae, Mycetophagidae, Latridiidae, Cholevidae. These studies clearly demonstrate the difference between the complexes of Coleoptera from cellars and basements. Species composition of Coleoptera is not constant and depends on the periodic disinfection in basements. At the same time, significant differences between the various types of cellars was not identified.

STILLBIRTHS. COMPARATIVE ANALYSIS AND CAUSES OF STILLBIRTH IN THE GRODNO REGION

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The urgency: stillbirth rate in relation to the total number of births reflects the level of country development and shows the development the healthcare system. On this dependence also affect:

- General health status of the population (especially the health of mothers, because the cause of fetus death are often infectious disease, toxemia of pregnancy, heart disease, lung, kidney and other internal organs of the mother);
- The system of medical consultations;
- Organization of obstetric aid;
- Bad habits of the population, and using of hard drugs (due to a significant risk of stillbirth);
- state of the environment.

Aim of the research: to compare the number of stillbirths and the causes of their deaths since 2009 to 09.2014.

Materials and methods. A statistical analysis of the autopsy reports of the children's department “Grodno regional mortem Bureau” and the information that was obtained in regional statistic department for the period from 01.01.2009 till 09.01.2014 year.

Results and discussion. During the first 9 months of 2014 in Grodno region was born 9968 children. This is 219 less than in the same period of 2013 (01.01.2013-01.09.2013 was born 10187). After analyzing of the birthrate in this region since 2009, we got the following numbers: 2009 -12463, 12215 2010-, 2011- 12562, 13208 2102-, 2013- 13614, 01.01.2014-01.09.2014 - 10187. After analyzing of the information of Child Pathology Department and data from regional statistic department of stillbirth was found that in 2009, recorded 38 cases of fetal death (stillbirth rate (SR) per 1,000 live births was 3.0), in 2010 - 23 (1.9), 2011 - 28 (2.2) 2012 - 36 (2.7), 2013 - 36 (2.6) 9 months of 2014 - 26 (2.6). It was found that the main causes from 2009-present is intrauterine asphyxia, which averaged 74% over the years, with some growth in 2013 to 83% and a decrease in the first 9 months of this year, to 69%. The second leading cause of stillbirth steadily occupies congenital malformations. So from 2009 to 2012, they were accounted for about 10% with a decrease in 2013 to 6%. During the first 9 months of 2014, they were increased to 15% (the main reason for the growth in our opinion was the latest after 22 week identification of defects). Practically constant were revealed the death due to acute blood loss in the fetus, which for years has 1 or 2 occasions and ranges from 3% to 8%. Stillbirths from haemolytic disease were recorded only 2 occasions in 2012 and 2013. Intrauterine pneumonia was note 1 case in 2011.

By level of stillbirth and infant mortality in 2013 Belarus ranked 18th (List is based on data CIA World Factbook). Infant mortality and stillbirth coefficient in Belarus for 2013 was 3.7 (world average was49.4). In 2006 Belarus ranked 54 in the ranking position and coefficient of 9.0.

Conclusion. During 6 years our republic rose by 36 positions in the level of stillbirth and infant mortality and is now in the 18th place.

We made the conclusion after analysis of total information: the most common cause of stillbirth from 2009 to present is fetal asphyxia (average 74%), due to the pathology of the placenta.

EFFECTS OF VARIOUS FACTORS ON THE NUMBER OF SACCHAROMYCES CEREVISIAE WHEN CULTURED

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Yeast - group of unicellular fungi, lost micelle structure in connection with the transition to life in liquid and semi-liquid, rich in organic matter substrates. Yeast cells according to their chemical composition strongly differs from the culture medium ingredients, in which they multiply. Therefore, the yeast cell, getting into a medium, should primarily provide a mechanism through which it could continuously recreate intracellular compounds from simple molecules [1]. *The purpose of the work* to determine the influence of various factors on the number of yeast cells during their cultivation.

Material and methods. Object of research – Saccharomyces cerevisiae in a dry and compressed form. The number of cells in culture were counted using a hemocytometer (Goryaev camera) [2]. For the cultivation of the yeast Saccharomyces cerevisiae used culturing method on solid medium. Impact factors: saccharose, antibiotic, oak silkworm pupae extract (OSPE). In the petri dish placed 5 ml of nutrient agar medium RM and additional influencing factors individually and simultaneously - antibiotics (cefazolin, C = 100 ug / ml), 100 ul OSPE (1: 100), 1 ml of 2% sucrose. After solidification of the culture medium on it sown with 1 ml of dry or compressed yeast living in a dilution of 1: 100. Petridishes are placed in an incubator for 24 hours at 32 ^{0}C over night culture of yeast is washed from the culture medium 10 ml of 0.9% solution of NaCl. Model to study the effects OSPE, sucrose and antibiotics on growth and development of yeast: group 1 –1ml dry yeast (1: 100) + 1 ml of saccharose (2%); group 2 – 1ml dry yeast (1:100) + 1 ml saccharose (2%) + antibiotic (100 ug /l); group 3 – 1ml dry yeast (1:100) + antibiotic (100 ug / l); group 4 – 1ml dry yeast (1:100) + antibiotic (100 ug /l) + 1 ml saccharose (2%) + 100 ul OSPE (1:10); group 5 – 1 ml of dried yeast (1:100) + 1 ml saccharose (2%) + 100 ul OSPE (1:10); group 6 – 1ml dry yeast (1:100) + 100 ul OSPE (1:10); group 7 – 1 ml live Pressed yeast (1:100) + 1 ml saccharose (2%); group 8 – 1 ml of live compressed yeast (1:100) + 1 ml saccharose (2%) + antibiotic (100 ug /l); group 9 – 1 ml of live compressed yeast (1:100) + antibiotic (100 ug /l); group 10 – 1 ml of live compressed yeast (1:100) + antibiotic (100 ug /l) + 1 ml saccharose (2%) + 100 ul OSPE (1:10); group 11 – 1 ml of live compressed yeast (1:100) + 1 ml saccharose (2%) + 100 ul OSPE (1:10); group 12 – 1 ml of live compressed yeast (1:100) + 100 ul OSPE (1:10). Mathematical treatment of the results was performed by parametric and nonparametric statistics using the statistical software package Microsoft Excel 2003, STATISTICA 6.0.

Results and discussion. Culturing of cells was carried out under identical conditions in 3 sequences, the results presented in Table 1.

Table 1. – Effect of various factors on the number of yeast cells during their cultivation *(M±m)*

Group	Type and breeding yeast	
	1ml dry yeast (1: 100)	1ml dry yeast (1: 100)
Control	$2{,}2\cdot10^7\pm0{,}07\cdot10^7$	$13{,}8\cdot10^7\pm1{,}48\cdot10^7$
1 ml saccharose (2%)	$3{,}5\cdot10^7\pm0{,}13\cdot10^{7(1)}$	$25{,}2\cdot10^7\pm0{,}8\cdot10^{7(1)}$
antibiotic (100 ug / l)	$2{,}7\cdot10^7\pm0{,}12\cdot10^7$	$11{,}9\cdot10^7\pm0{,}3\cdot10^7$
100 ul OSPE (1:10).	$3{,}7\cdot10^7\pm0{,}19\cdot10^{7(1)}$	$20{,}3\cdot10^7\pm1{,}25\cdot10^{7(1)}$
1 ml saccharose (2%) + antibiotic (100 ug /l)	$4{,}32\cdot10^7\pm0{,}8\cdot10^{7(1-3)}$	$32{,}5\cdot10^7\pm1{,}04\cdot10^{7(1-3)}$
1 ml saccharose (2%) + 100 ul OSPE (1:10)	$6{,}9\cdot10^7\pm0{,}1\cdot10^{7(1,2,4)}$	$18{,}8\cdot10^7\pm1{,}14\cdot10^{7(1,4)}$
antibiotic (100 ug /l) + 1 ml saccharose (2%) + 100 ul OSPE (1:10)	$8{,}8\cdot10^7\pm0{,}28\cdot10^{7(1-4)}$	$21{,}3\cdot10^7\pm1{,}52\cdot10^{7(1,3)}$

Note – ^{1}P <0.05 compared to control; ^{2}P <0.05 compared with the group of agar + saccharose; ^{3}P <0.05 compared with the group of agar + antibiotic; ^{4}P <0.05 compared with the group of agar + OSPE.

As can be seen from Table 1 saccharose acted as an activator, reproduction and growth of the yeast cells, since the baker's yeast Saccharomyces cerevisiae are Saccharomyces, easily assimilated sugars. Antibiotic when introduced into the culture medium and culturing had no statistically significant effect on the yeast cells. Adding to the culture medium OSPE promoted proliferation of yeast cells and consequently increase their numbers. The most statistically significant changes in cell number compared with the control group by adding OSPE and (or) the additional factors when adding saccharose number of yeast cells increased by 59.1% dry yeast and 91% for the live compressed yeast; saccharose + antibiotic - 96.4% and na135.5% respectively; OSPE - by 68.2% and 47.1%, respectively; OSPE + saccharose –by 213.6% and 36.2%, respectively; OSPE + antibiotic + saccharose – 300% and 54.3% respectively.

Conclusion. Thus, the sucrose acts as an additional source of supply of yeast cells EKDSH - activator of the growth and development of yeast cells in a quiescent state, disinfects antibiotic medium without affecting cell number. The joint presence of three factors favorable effect on the growth and development of the yeast cells, as evidenced by the increase in their number.

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GROUND BEETLES (COLEOPTERA, CARABIDAE) OF GORODOK

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Beetles are the most numerous order of insects. Carabidae are one of the largest families of Coleoptera. The number of species of the world fauna according to various estimates ranges from 25,000 to 50,000. Many species of Carabidae reach high numbers and play an important role in the natural and anthropogenic ecosystems. These species are important in ecological studies as convenient indicators of the environment change and the amount of contaminants introduced by man. Most of Carabidae - predators and many of them are useful for t human and can prey on pests of agriculture and forestry. However, this family itself has pests of crops. The fauna of Carabidae within Belarusian Lakeland is well studied, but in some areas the investigations were not held. The territory of Gorodok is one of them.

The aim of investigation – to detect the species structure of Carabidae of Gorodok.

Material and methods. The material was collected using a soil traps (or Barber traps) with 9% acetic acid solution. The line of 10 traps was placed at each site at a distance of 2-2.5 meters apart. Investigations were made from 09.15.13 to 03.11.13. Total 99 specimens of 35 species of Carabidae were collected. The study was held in 7biotopes. Biotope №1 is presented by field. In grassy layer dominate cereals presented by *Phleum pretense* and *Festuca pratensis.* Biotope №2 is located in the cottage area. Vegetation is represented by *Rúbus idáeus* and *Grossularia reclinata.* Biotope №3 is located among high-rise buildings. The predominant vegetation is *Ligustrum vulgare* and *Syringa vulgaris.* Biotope №4 is located on the territory of food factory. Vegetation is represented by various grasses. Biotope №5 is presented by the hill slope near the river. In grassy layer dominate *Phleum pretense* and *Calamagrostis epigeios.* Biotope №6 is located on the bank of the river Gorozhanka. Vegetation is represented by *Arctium láppa, Sálix cáprea, Carex nigra.* B biotope №7 is located in the park. The rates of Shannon-Weaver index the information diversity and Simpson index of dominance concentrations were used to measure the degree of biodiversity difference between biotopes.

Results and discussion. During the investigation 99 specimens of 35 species of Carabidae were found. The 13 species were found in the field, 12 species in the private sector, 7 species were found on the territory of high-rise buildings and hillside, 12 species were found near the food factory, 2 species were collected on the bank of the river. Carabid beetles were not registered in the park because of the strong trampling of territory and destruction of traps. Shannon-Weaver index and Simpson index have average rates.

index	biotope					
	1	2	3	4	5	6
C	0,301	0,125	0,156	0,12	0,143	0,5
H	1,8	2,262	1,906	2,338	1,946	0,693

Table. Shannon-Weaver index and Simpson index rate

After the analysis of life forms 8 groups were identified, the most numerous are stratobionts burrowing the litter and soil, surface-litter stratobionts and litter stratobionts, smaller percentage goes to walking epigeobionts, litter-crack stratobionts.

By biotopical preference the following groups of species were identified: eurytopic, field, forest-marsh, forest-meadow, meadow-field, meadow-forest, forest, meadow, marsh, coastal- forest, coastal, synanthropic- forest.

The analysis of geographic distribution of found species of ground beetles gave 9 types: Euro-Siberian, European, Western Palearctic, West-Central Palearctic, transpalearctic, transpalearctic subboreal, Euro-Caucasian, Holarctic and circumpolar boreal. West-Central Palearctic and Transpalearctic are the dominant types distribution for all of the studied biotopes. However, in view of the geographical location of the studying area, are sufficiently numerous and Euro-Siberian and circumpolar boreal forms.

Conditions of humidity and temperature in the small town causes the dominance of mesophilic species, in habitats close to the watercourse increases the percentage of hygrophilous species of Carabids. Thus, numerous mesophilic Carabids can be explained by the prevalence of moderate temperatures in the studied habitats.

Conclusion. As a result of research conducted in the Gorodok, 35 species of Carabidae belonging to 8 life forms were found. West-Central Palearctic and Transpalearctic are the dominant types of geographical distribution for all the studied biotopes. Conditions of humidity and temperature in the small town causes the dominance of mesophilic species.

PROPHYLACTICALLY EFFICIENCY TOCOPHEROL IN GASTROENTERITIS PIGS

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Among the pigs contained in a pig-breeding complexes, widespread inflammatory disease of the stomach and intestines - gastroenteritis. They are diagnosed in pigs of all groups, but most often detected in young animals – suckling piglets and piglets after weaning [1, 2]. This applies to both infectious gastroenteritis (infectious and parasitic) and noninfectious gastroenteritis. Gastroenteritis in piglets often occurs during suckling content (14-21 days). They have a relationship with changes in the body associated with the development of the 2nd age of immunodeficiency and in the first days after weaning from sows. After weaning of piglets from sows they arise 3rd immunodeficiency [3, 4].

Given listed, as well as drawing on the literature data, the aim of our research was to study the prophylactically efficiency of tocopherol during gastroenteritis of pigs through the systems "sow - litter" and "pig-feed."

Material and methods. Work carried out on pig-breeding complex and at the department of internal non-contagious animal diseases EE "Vitebsk State Academy of Veterinary Medicine."

Since September 2013 on the complex held preventive measures to age of immune deficiency and gastroenteritis of pigs. For this part in the animal feed were introduced premixes, containing vitamin E in an amount greater than the standard value (Table 1).

Table 1 - The content of vitamin E in the feed, mg/kg

Mixed fodder	Group of swine, which used mixed fodder	Standard content	Actual content
SC-1	pregnant sows	70	95
SC-10	lactating sows	70	100
SC-11	suckling piglets	40	120

Results and discussion. Efficacy was evaluated change morbidity and preservation of suckling piglets and piglets post weaning.

Studies have shown that digestive diseases rank first among non-contagious disease of pigs on the farm. Among them, the most common gastroenteritis of pigs occupying the structure of non-communicable diseases 40-42%.

With the aim of prevention of gastroenteritis in pigs developed a new premix. This premix content of vitamin E for pregnant sows exceeds the standard value by 35,7%, for lactating sows - by 42,9%, and for piglets - 3 times. This change was accompanied by a vitamin feeding and change the overall picture of disease (Table 2).

Table 2 - Morbidity and mortality in piglets gastroenterite

Period of research	Morbidity,%		Mortality,%	
	suckling piglets	weaners	suckling piglets	weaners
before introducing the premix	24	13	7	6
after premix introduction	20	10	5	3

As can be seen from Table 2, after the introduction of the new premix morbidity and mortality of suckling piglets and weaned piglets decreased (incidence of 4% and 3% respectively, and the mortality rate - 2% and 3%, respectively).

This demonstrates the prophylactically efficiency using vitamin E during gastroenteritis of pigs.

Conclusion. The results showed widespread gastroenteritis among young pigs. Conducting preventive measures for gastroenteritis among piglets using a premix with a high content of vitamin E can reduce the number of patients and their death, which indicates that the effectiveness of this scheme. This was facilitated by a hepatoprotective effect of tocopherol and stimulation of the body's metabolism of sows.

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MYRMECOPHILOUS BEETLES (INSECTA: COLEOPTERA) OF NATURAL FORESTS IN THE NESTS OF THE ANT *FORMICA RUFA* IN BELARUS LAKELAND

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The myrmecophiles − relations, which are extremely diversified, the ants are, as a rule, passive or indifferent, and the other insects foist themselves upon the ants and assume the role of satellites, parasites or commensals [1]). This makes it possible myrmecophiles to avoid interspecific competition within one colony of ants. In 1894 Wasmann enumerated 1,246 species [2]. Of the insects 993 are Coleoptera (283 Staphylinidae, 117 Pselaphidae, 90 Clavigeridae, 169 Paussidae, 43 Thorictidae, 128 Histeridae, etc.). Over a hundred years all over the world are studying myrmecophiles, especially myrmecophilous beetles, but in Belarus Lakeland myrmecophilous beetles are still understudied [3, 4].

The purpose of this investigation is to identify the myrmecophilous beetles species composition of natural forests in the nests of ant *Formica rufa* L., in Belarus Lakeland.

Material and methods. The study was conducted on the territory of Polotsk and Ushachi districts in 2012-2014. Beetles were collected in the nests building red wood ant *F. rufa*. The studied nests were selected randomly. 10 nests situated within 4 types forest (pine forest, fir forest, birch forest, oak forest). Plastic pitfall traps covered with a glass cloth net (mesh = 2x2 mm) were used. The glass cloth net keeps ants and most part of nest material out of the trap. The myrmecophilous beetle species are small and they drop through the net into pitfall traps [5]. Sporadically, ant nests debris sieved through a column of soil sieves. Latin names of beetles species are listed according the publication «Catalogue of Palaearctic Coleoptera» [6]. Cluster analysis was used to compare the similarity myrmecophilous beetles species composition in 4 types forest. Clustering was carried out by a single linkage using an index Czekanowski-Sörensen.

Findings and their discussion. The study identified 19 species of myrmecophilous beetles (273 specimens). In pine forest found 11 species of myrmecophilous beetles (see table), in fir forest – 13 species, in birch forest – 9 species and in oak forest found 8 species of myrmecophilous beetles. Only in pine forest were found: *Pella humeralis* (Trans-eurasian species), *Atheta flavipes* (Trans-eurasian species), *Spavius glaber* (Trans-eurasian species), in fir forest – *Trimium brevicorne* (Holarctic species), in oak forest – *Sepedophilus testaceus* (Holarctic species). In four types forest detected only one common species: *Corticaria longicollis* (West-palaearctic species).

Table

Species composition and abundance (%) myrmecophilous beetles of some natural forests in Belarus Lakeland

Myrmecophilous beetles	Types forest			
	*Pine forest	**Fir forest	***Birch forest	****Oak forest
Scydmaenus hellwigii Herbst, 1792	0	1,43	2,94	10
Leptacinus formicetorum Märkel, 1841	2,33	5,71	1,96	0
Gyrohypnus atratus Heer, 1839	0	1,43	0	20
Sepedophilus marshami Stephens, 1832	2,33	1,43	0,98	0
Sepedophilus testaceus Fabricius, 1792	0	0	0	10
Bessopora haemorrhoa Mannerheim, 1830	0	0	0	10
Thiasophila angulata Erichson, 1837	0	4,29	2,94	0
Pella humeralis Gravenhorst, 1802	2,33	0	0	0
Atheta talpa Heer, 1841	0	1,43	5,88	0
Atheta flavipes Gravenhorst, 1806	9,30	0	0	10
Lyprocorrhe anceps Erichson, 1837	6,98	11,43	0	20
Trimium brevicorne Reichenbach, 1816	0	1,43	0	0
Potosia metallica metallica Herbst, 1782	2,33	1,43	0	0
Monotoma angusticollis Gyllenhal, 1827	2,33	4,29	0	0
Monotoma conicicollis Chevrolat, 1837	0	0	0,98	10
Spavius glaber Gyllenhal, 1808	2,33	0	0	0
Corticaria longicollis Zetterstedt, 1838	27,91	58,57	16,67	10
Palorus depressus Fabricius, 1790	13,95	4,29	1,96	0
Myrmechixenus subterraneus Chevrolat, 1835	27,91	2,86	65,67	0

Note: *Pine forest, Polotsk distr., 7 km SE from Polotsk tawn;
** Fir forest, Polotsk distr, 3 km SW from vill. Dretun; Ushachi distr, 16 km N from Sorochino vill.;
***Birch forest, Polotsk distr., 15 km N from Polotsk tawn; Polotsk distr., 1 km SW from Dretun vill.;
**** Oak forest, Polotsk distr., 20 km SE from Polotsk tawn; 18 km SE from Polotsk tawn.

As a result of clustering allocated 2 clusters (see figure).

The first cluster included myrmecophilous beetles species composition in fir forest, birch forest and in pine forest; the third – in oak forest. The greatest similarity (73%) myrmecophilous beetles species composition observed in fir forest and birch forest, close to them pine forests (67%). In the dendrogram myrmecophilous beetles species composition in oak forest is very different from myrmecophilous beetles species composition in another types forest.

Conclusions. During the study period in four types forest found 19 species of myrmecophilous beetles. The greatest diversity of species observed in fir forest − 13 species, least of all – 8, − in oak forests. The comparison myrmecophilous beetles species compositions in four types forests showed that myrmecophilous beetles species composition in oak forests is very different from myrmecophilous beetles species composition in another types forest.

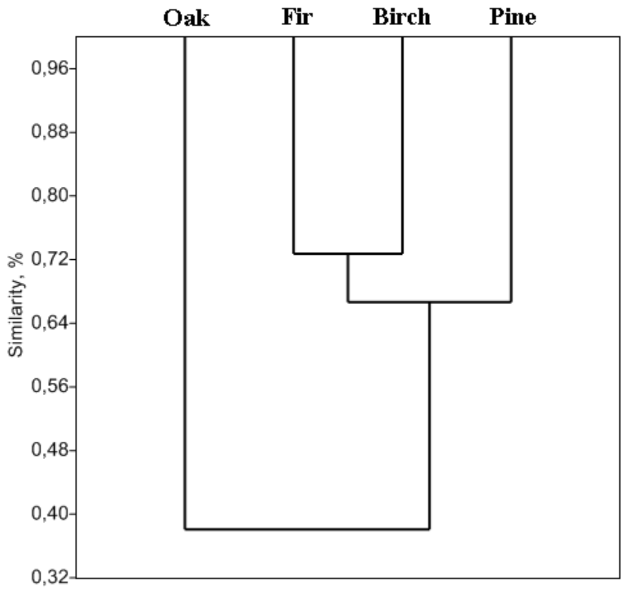

Figure − Dendrogram of similarity myrmecophilous beetles species composition in four types forest

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COMPOSTING OF THE PLANT WASTE FROM THE URBAN GREEN AREAS

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In the cities of the Republic of Belarus large amounts of vegetative waste, leaf litter, grass cuttings, branches from trimming trees and so on, are annually produced. According to the data submitted annually by Belarusian research center "Ecology", in Minsk only from legal persons annually forms and then goes to the burial on municipal solid waste landfills about 8 thousand tones of vegetative waste. Naturally, the actual formation of vegetative waste is much higher than given, because the large amount of them fall into the category “street and yard sweepings”, “industrial and domestic waste”, “lifecycle waste” and so on.

According to the European Environment Agency (EEA), it is possible to speak about a significant amount of vegetative waste generation in municipal waste composition of the European countries. According to the EEA percentage of vegetable waste varies from 2.68% in Norway to 19-22% in Denmark and the Netherlands. [1] And also already exists and successfully operates a system of municipal waste management in European cities [2].

According to established practice litterfall is buried in landfills without prior treatment, thereby significantly reducing the time of landfill exploitation and increasing emissions of methane from the landfill, both during operation and when closing and recultivation of landfill [3]. Municipal solid waste landfill must comply with a number of environmental protection requirements in accordance with the laws of the Republic of Belarus [4]. One important exception is getting waste to landfills without prior recycling.

One of the most effective ways to prepare vegetative waste for using as insulating layers and recultivation of closed landfills acts composting [5]. However, at the present time, municipal services don't use core technologies of composting (aerobic or anaerobic) of vegetative park waste, or other green spaces that contribute to effective decontamination and mineralization of these wastes.

Therefore, the purpose of our study was to assess the volume of formation of vegetative waste from green areas of cities, as well as to assess the possibility of using this type of material (leaves and grass) as the material for composting.

Material and methods. The methodology of the study was to carry out composting of green waste in 3 different variants, in the cities with the greatest degree of landscaping in the Minsk region. Composting foundations were organized in the parks of Osipovichy, Zhodino. We have previously evaluated in our researches the quantity of litter formation in this cities. The litter formation in Zhodino:

- City park – 79,92 tonnes;
- Park named after 50th anniversary of BelAZ – 28,9 tonnes;
- Dendrological park – 37,1 tonnes.

The litter formation in Osipovichy:

- City park – 145,64 tonnes;
- Park named after 50th anniversary of the October Revolution – 28,9 tonnes;
- Square by st.Abrosimova – 37,1 tonnes.

As you can see, there is a large amount of litter produced every year in the parks and streets in these cities. And the way of its fast recycling and using need to be find.

Results and discussion. Grass was chosen as a compostable material due to research start in early summer.

3 different varieties were developed - grass, grass and sweeped staff from the streets (which includes trash, yard dust, last year's leaves), also grass and branches, as a vegetative waste compost type.

Investigations were taken for over 3 months. During which shoveling and watering of compost were performed. Also the measurements of temperature were collected.

Two weeks after the beginning of collecting, the compost temperature started to rise.

In a month the temperature reached its maximum (35°C), and then in two weeks it dropped to 23°C and stayed at this level. In general, the temperature of the compost was low due to the compost volume ($V = 0,5\ m^3$).

Authority commission from municipal communal services has been created, for fixating the composting results. This commission assessed the state of compost.

The initial weight has significantly decreased in volume down to around 30% in the short period. Whereas the usual period for investigating of composting process is one, one-half years.

However, in the end the mass of compost has not been completely recycled. The one that was made of leaves almost didn't decompose. It was noted the big amount of humidity. The one that was made from grass and branches decomposed more than the 1st one, due to better aeration. Most option consisted of street estimates. It can be connected with the fact that the consistence of the street staff from the streets includes the recycled components from the last year, such as last year's leaves and grass.

Chemical analysis were made to determine the possibility of using the compost material to be composted, because as the component was taken from urban areas that may be contaminated with emissions from transport and industry.

Analyses were performed by the branch of "Central Laboratory, Republican Unitary Enterprise Scientific and Production Geology Center".

Conclusions. The litter formation in Zhodino and Osipovichy has been estimated;

The process of composting was conducted to determine the possibility of litter using for landfill recultivation. Subsequently were conducted chemical analyzes.

The chemical analyzes showed high concentration of mobile phosphorus, potassium and total nitrogen.

Concentration of heavy metals did not exceed MPC (maximum permissible concentration). The obtained results meet the requirements for organic compost.

Low concentrations of contaminants show, that the obtain compost can be used not only for using as recultivation layers, but also as a fertilizer.

The leaves from the most polluted city areas, the parts of parks that are close to roads, can be used for recultivation layers in the landfill areas. This will reduce the economic costs of disposal management.

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EVALUATION OF PIPELINE MATERIALS PRESSURELESS WATER SUPPLY NETWORK

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The question of choice of material for laying pipes for gravity sewerage network does not lose its relevance for many years. In the pursuit of price reduction products in the course are various advances in science and technology. Given the current poor state of the national economy is a constant race for the lower cost of construction projects. Accordingly, the main and often the only criterion for selection of pipe materials is the cost. Given the fact that most plastic pipes are no domestic standards - they are subject to technical examination.

In this paper we analyzed the qualitative characteristics of the materials of pipes, causing their scope.

Material and methods. Pipes used for gravity sewerage networks can be divided into two groups: rigid and flexible. The criteria for inclusion of the pipe to one group or another is the ability to deform the pipe cross-sectional (become oval) under load. This ability is due the nature and origin of the material molding. Since rigid materials are rigid structure due, primarily, by the presence of binder. For rigid pipe should be classified reinforced concrete, concrete, ceramic, cast iron, asbestos cement pipes. By flexible - all kinds of plastic pipes, including fiberglass. Indicators of quality materials that define the use of the pipe in gravity sewerage networks, for each of these groups will be great.

The most significant physical and mechanical characteristics of sewer pipes are: durability, resistance to the abrasive effects due to the presence in the wastewater solids, water resistance and mechanical strength of the walls.

Results and discussion. Abrasion and corrosion significantly limit the use of concrete / concrete pipe networks gravity drainage systems. To expand their application should use concrete road marks, waterproof and Hydraulic, perform corrosion protection. The best option for such protection is to protect the inside of the pipes with polymeric materials. Corrosion is absolutely not typical ceramic pipes, which leads to the possibility of their use in a wide gravity sewerage networks. They are resistant to all types of gas, biological, chemical corrosion. Pipes, glazed, well behave in contact with acids and alkalis.

The wear resistance of polymer and fiberglass pipe has high values. Depending on the tube material wear can be operating during the period from 0.1 to 0.5 mm. The phenomenon is not peculiar to general corrosion plastic pipe and composite pipe of thermosetting plastics. For such materials to properly use the concept of "aging". According to modern research [2] most pipes from polymeric or composite materials have a durability of from 50 to 100 years. A characteristic feature of the plastic pipe is that the long term strength of the pipe depends on the voltage. Normally, when analyzing the durability of the pipe using a graph of the strength of the pipe from the impact load duration. The position of the curve in the graph fracture, its inclination and size of the gap depends on the material of plastic tubes.

Conclusion. Thus, in terms of the actual state in the design, construction and operation of networks gravity drainage systems can draw the following conclusions:

1) You must be an existing forces in Belarus, scientific and technical basis of ongoing research to implement the characteristics of polymer and composite pipes, both materials and products. Such studies will help to develop concrete recommendations on the application of pipes of different materials are not giving priority only manufacturer's recommendations. The reason for this may be operating in the country for a long time (since 2003) Resolution of the Council of Ministers of the wide application of polymeric materials in construction;

2) It is necessary to add to the existing regulations on the design and construction of external networks of polymeric materials admissible values of transverse deformation of plastic pipes that are inevitable during the construction and operation of the system due to the mechanics of the "pipe-soil";

3) For use in networks of economic and fecal sewage concrete and reinforced concrete pipe manufacturer's recommended to carry out the protection of internal surfaces of pipes with polymeric materials.

4) certification bodies and technical examination of building materials and products must be used in the test polymer and composite pipes range of quality indicators, statutory, for which they are issued in the country of origin.

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THE BASIC CHANGES OF THE FUNCTIONAL CONDITION OF RESPIRATORY SYSTEM AT THE COUNTRYSIDE POPULATION

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Definition of a functional condition of respiratory system, is of great importance at the decision of questions of treatment, the forecast, disease of respiratory system and a work capacity estimation.

Modern functional methods are necessary for an estimation of separate syndromes of infringement of function of external breath (FWD). They allow to define such characteristics of respiratory function, as bronchial conductivity, suhariyanto, elastic properties, diffusion ability and respiratory muscular function [1].

Methods of research of function of lungs are widely applied at various stages of rendering assistance by the patient with a pathology of respiratory organs, since an out-patient-polyclinic link and закачивая branches of resuscitation and intensive therapy. The given methods occupy a special place by working out and carrying out of a complex of rehabilitation actions from patients with a respiratory pathology [2].

Material and methods. Spirometric, descriptive, rather-comparative, biostatistics, pneumotachometry, ekologo-epidemiological analysis.

Research was spent among the respondents living in the item of Svatki. In experimental group conducted the spirometric researches including studying of function of external breath. The functional condition of respiratory system was defined at 203 women and 358 men at the age from 18 till 70 years.

Results and discussion. VC (Vital Capacity) at the surveyed has made 3,04±0,05 l (norm - 3,66). In surveyed group of value of the maximum volume of air which can be inhaled after the maximum exhalation did not overstep the bounds of the normal. Average value VC at living in countryside deviates on 14% (83,25±1,04%) norm (97,25%). Decrease VC practically can underlie all diseases of lungs, and between its normal amount and full working capacity of lungs by no means it is impossible to put an equal-sign. Moderate decrease in size VC, basically, at the expense of reduction ERV, found out by us, is observed at bronchial obstruction. Decrease VC is frequent is caused insufficient расправлением lungs in the absence of primary pulmonary disease.

The analysis of a condition of system of external breath has allowed to reveal features of its functional condition at Svatki living in the item depending on a floor. So, V (MV) (Minute

Ventilation) at men and women it is increased in comparison with normal values. However the analysis of values of V (MV) depending on a floor has shown that at men the given indicator statistically authentically above norm, than at women. At the women living in countryside, V (MV) has made 192,9±5,75% (has exceeded an indicator of norm of 183,98% on 9%), and at men - 221,12±6,05% (has exceeded an indicator of norm of 176,74% on 44,4%).

It is revealed that F (Frequency) at women increases by 9% and makes 19,49±0,35 1/mines in comparison with norm (17,94 1/mines). The analysis of reserve possibilities of system of external breath has not revealed sexual differences at adaptation of an organism to dust conditions. So, indicators of reserve volume of a breath (IRV) (Inspiratory Reserve Volume) in both groups have decreased in 1,05-1,02 times. The reserve volume of a breath at representatives of both floors has decreased and has made at women 1,53±0,05 l, and at men 1,76±0,05 l. Indicators of reserve volume of an exhalation at women (0,49±0,03) and men (0,93±0,04) were below normal values in 2,9-1,7 times.

At respondents without revealed infringements FWD increase F (Frequency) at 9% (19,43±0,39 1/mines) and V (MV) (Minute Ventilation) on 29% (210,21±8,35%), decrease ERV in 2 times (0,91±0,05, increase in an index of Tiffno (IT=FEV1/VC) at 2,12% (82,82±0,66%), MEF_{25} (Maximal Expiratory Flow) on 0,29% (81,29±1,41%), MEF_{50} (Maximal Expiratory Flow) on 8% (84,5±1,66%), MEF_{75} (Maximal Expiratory Flow) on 6,3% (78,81±2,49 has been fixed %). It is possible to say that at respondents of the given group volume and high-speed indicators practically do not change as changes of average values of the above-stated indicators did not exceed 10% [3].

At surveyed with the diagnosed obstructive infringements decrease ERV (Expiratory Reserve Volume) in 1,7 times (0,87±0,06), VC on 13,6% (83,64±2,08%), FVC (Forced Vital Capacity) on 6,2% (86,12±2,09%), FEV1 (Forced Expiratory Volume in 1 sec) on 30,8% (55,5±1,88%), relation FEV1/FVC on 24,9% (53,28±1,34%) and an index of Tiffno (IT) on 28,1% (52,6±1,36%). In this group decrease in high-speed indicators of the forced exhalation is established: PEF (Peak Expiratory Flow) on 39,8% (43,79±1,79%), MEF_{25} on 48,3% (32,75±1,55%), MEF_{50} on 47,9% (28,59±1,38%), MEF_{75} on 42,6% (29,86±1,61%) and FEF_{25-75} (Forced Expiratory Flow) on 46,1% (30,32±1,32%). Indicators $MEF_{25,50,75}$ and FEF_{25-75} specify in insufficiency of 2 degrees.

At the population with diagnosed рестриктивными infringements increase F (Frequency) by 13,2% (20,25±1,16 1/mines), V (MV) on 2,4% (183,56±11,92%), and an index of Tiffno on 6,4% (87,06±1,69%), reserve volumes of a breath in 1,4 times (1,2±0,08) and an exhalation in 2,4 times (0,62±0,1), VC on 37,4% (59,81±2,46%), FVC (Forced Vital Capacity) on 26% (66,38±2,78%), FEV1 on 19,3% (67,03±2,72 decrease %). In a group of persons with restrictive changes of the device of ventilation high-speed indicators of the forced exhalation decrease: PEF on 24,7% (58,94±2,52%), MEF_{25} on 21,6% (59,41±3,15%), MEF_{50} on 10,1% (66,43±3,36%), MEF_{75} on 22,5% (49,97±3,86%) and FEF_{25-75} on 11,8% (64,56±2,78%). Indicators FVC, $MEF_{25,75}$ and FEF_{25-75} correspond to 1 degree of insufficiency.

At persons of the basic group with the revealed mixed infringements of ventilating ability of lungs increase F (Frequency) at 7,7% (19,26±0,57 1/mines), decrease in reserve volume of a breath (1,25±0,05) in 1,4 time and an exhalation (0,43±0,04) in 3,5 times, VC on 37,9% (59,36±1,55%), FVC on 31,1% (61,26±1,61%), FEV1 on 36,3% (49,97±1,56%), relations FEV1/FVC on 11,2% (66,95±1,04%) and an index of Tiffno on 14,2% (66,48±1,58 is observed %). The Most expressed tendency to decrease in high-speed indicators of the forced exhalation at level of the central departments of a bronchial tree, bronchial tubes of average and small calibres is defined among respondents with obstructive-restriktivnymi infringements FWD: PEF on 39,4% (44,17±1,98%), MEF_{25} on 44,3% (36,68±1,78%), MEF_{50} on 44,7% (31,79±1,47%), MEF_{75} on 43,5% (28,96±1,3%) and FEF_{25-75} on 43,1% (33,27±1,5%). Values FVC, FEV1 correspond to 1 degree, and VC, ERV, $MEF_{25,50,75}$ and FEF_{25-75} - 2 degrees of respiratory insufficiency.

As a result of the spent researches we experimentally have considered influence on a functional condition of respiratory system of the population of the ecological factors operating in rural settlement, on an example of the item of Svatki. Values of basic indicators FWD at agricultural population slightly fall outside the limits normal or correspond to norm.

Conclusion. As a whole, the situation in countryside is much better for respiratory organs, than in settlements of city type. Impurity of cities can become at due propaganda the returning reason in rural settlements.

As a result of the spent researches we experimentally have considered influence on a functional condition of respiratory system of the population of the ecological factors operating in rural settlement, on an example of the item of Svatki. Values of basic indicators FWD at agricultural population slightly fall outside the limits normal or correspond to norm.

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THE MODEL FOR THE STUDY OF VARIOUS ANTHROPOGENIC IMPACTS ON SOIL

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In the face of increased anthropogenic load on the biosphere, soil, being an element of the natural system and being in a dynamic equilibrium with all other components exposed degradation processes. Flows of substances entering the soil as a result of human activities, are included in the natural cycle, disrupting the normal functioning of soil habitats and the entire soil system. Among various biological criteria for evaluating human impact on soil and most operational perspective are biochemical indicators that give information about the dynamics of the most important enzymatic processes in the soil: the synthesis and decomposition of organic matter, nitrification and other processes [1]. The work purpose: modeling study stages of human influence on soil condition.

Material and methods. Object of research – soil. Studies were carried out 3 stages of work. In the first phase were selected soil at selected locations in the city of Vitebsk with different anthropogenic load. In the second stage, we classified the sampled soil. In the third stage of work were defined biochemical indicators for further research and evaluation of soil extract its structural and functional state.

Results and discussion. In the first phase of the soil were selected in the following places of Vitebsk. In each of these zones was taken on 3 samples every 5 meters. 1st place: Factory "Vityaz" (Vitebsk, st. Petrus Brovki). 2nd place: near the shopping center (Vitebsk, st. Tereshkova 81). 3rd place: Park Frunze (Vitebsk, Frunze av). 4th place: Near the carriageway (Vitebsk, Frunze av). 5th place: Seaside Resort Dvina (Vitebsk, st. Herzen) 6th place: Near Railway (Vitebsk, st. Cosmonauts).

In the second phase were determined at various soil types classification. Each place corresponds to a particular type of soil: 1 place – dernovopodzolistaya, loamy, slabogumusnaya on medium loam; 2nd place –dernovopodzolistaya, sandy loam, loamy, on medium loam; 3rd place – dernovopodzolistaya, medium, slabogumusnaya, on the sands; 4th place – dernovopodzolistaya, sandy loam, medium, slabogumusnaya, on the sands; 5th place – disconnected sand; 6th place – dernovopodzolistaya, sandy loam, with a medium, sour, on the sands. Classification of places depending on where the collection of soil and adjacent buildings and roads: 1st place – soil near the enterprise; 2nd place – soil from a busy place with a large flow of people and technology, as well as the accumulation of exhaust gases; 3rd place – the soil is taken away from the road in the valley; 4th place – near a roadway, soil taken near the highway exhaust emissions; 5th place – the coastal zone of the river, the soil taken near the water, in a busy place; 6th place – near the railway ground is taken at the place where there is excessive transport of metal, a large amount of exhaust gases. The third stage of the investigated concentration of mobile forms of heavy metals and the enzymatic activity of soils in various collection locations in order to establish the dependence of growth on plants of these soils enzyme activity and content of heavy metals.

Conclusion. System-ecological analysis of soil condition of Vitebsk with different anthropogenic load enables the display effects on the soil of various kinds of anthropogenic factors using indicators of soil enzyme activity and the effect of heavy metals on soil. On the enzymatic activity of the soil as an indicator of ecological and functional state of the soil affects the content of heavy metals, the concentration of which depends on the degree of human impact on this soil.

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THE HPV INFECTION MARKERS IN DIFFERENT SKIN TUMORS

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Human papillomavirus (HPV) infection is one of the most widespread in different countries. It is caused by zoonotic pathogens, i.e. transmitted from person to person through sexual contact, through vertical transmission from mother to fetus (transplacentally), by household and autoinoculation (self–infection).

It is known that HPV is a DNA–containing virus. Generally there are about 200 types of HPV, from which 80 types are more studied. They lead to the development of the papillomatosis and other tumors of the skin and mucous membranes, with a chronic recurrence course, widespreading, highly contagious [1-5].

It was found that certain types of HPV can infect a well-defined type of epithelium and cause characteristic changes. It has been shown that HPV is the primary trigger for the development of cervical cancer, benign and malignant skin tumors (such as basal cell carcinoma and squamous cell carcinoma) and mucous membranes (rectum, larynx). Currently a large number of factors are found, including environmental, which are contributing to the malignant transformation of cells infected by a virus: chemical factors, physical (UV radiation and other types of ionizing radiation), disorders of the immune and endocrine systems.

The purpose of the work was to investigate the presence of human papillomavirus-associated markers in various tumors of the skin identified in the biopsy and surgical material in the Health Care Institution "The City Clinical Pathology Bureau" in Minsk in 2013-2014 years.

Material and methods. The histological slides of biopsy and surgical samples of different skin tumors stained with hematoxylin and eosin were studied microscopically to determine the HPV infection markers (koilocytosis and others). The age and gender specificity were taken into account. The age range of patients was considerable – from 18 to 93 years (the children's material was not investigated). The HPV markers were easier determined in benign tumors that was probably connected with the biological characteristics of the virus – the ability to replicate in a highly differentiated epithelium.

Results and discussion. All tumors were distributed according to the modern classification of the WHO (2006).

The basal cell carcinoma was presented by superficial basal cell carcinoma (2 cases), nodular basal cell carcinoma (1), micronodular basal cell carcinoma (1), infiltrating basal cell carcinoma (1), fibroepithelial basal cell carcinoma (2), basal cell carcinoma with adnexal differentiation (1), basosquamous carcinoma (1). The basal cell carcinomas were composed of small cells and it was difficult to reveal the typical signs of human papillomavirus infection as the koilocytosis, presence of multinucleated cells, intranuclear and intracytoplasmic inclusions. It was easier to detect them in more differentiated cells in border epithelium or in the foci of differentiation to the adnexal or squamous cells.

In unspecialized and verrucous squamous cell carcinomas (4) HPV markers were significantly expressed in two cases in many areas, which probably formed the basis of tumor development. There were visible dysplastic changes of different degrees and the transition to a cancer. In two cases, these changes were not detected. However, this could be due to the fact that the slides presented only cancer growths without transition zones. In some forms of squamous cell cancer manifestations of viral infection were mild – in the acantholytic squamous cell carcinoma (1), spindle-cell squamous cell carcinoma (1) and adenosquamous carcinoma. The pseudovascular squamous cell carcinoma was absent in our observations.

In such lesions as Bowen disease and Bowenoid papulosis the markers of the HPV infection are usually well defined. The same situation was in our observations of two cases of the Bowen disease and one case of the bowenoid papulosis.

In actinic keratosis (2) the pronounced stromal elastosis was a background process. Cellular atypia was expressed in the basal layer. Perhaps this is why the markers of infection have not been determined.

We have not found arsenical keratosis and PUVA keratosis in biopsy and surgical material studied in the City pathology bureau during the last year.

It is well known, that signs of HPV infection are well expressed in verrucas. In our study, the HPV markers were easily detected in all 6 cases of verruca vulgaris, verruca plantaris and verruca plana.

The acanthomas were presented by 1 warty dyskeratoma, 2 lentigos simplex, 7 seborrhoeic keratosis, 1 clear cell acanthoma and 3 keratoacanthomas. The virus-caused changes have been sometimes presented only in individual cells and were questionable, but in others they were well evident.

The adnexal tumours usually had no markers of viral lesions in the glandular component with apocrine and eccrine differentiaton of both benign and malignant types. There were 1 tubular carcinoma, 1 malignant mixed tumour, 1 mucinous carcinoma, 1 digital papillary carcinoma and 1 adenoid cystic carcinoma. Mild symptoms of HPV were sometimes defined in the covering stratified squamous epithelium, which bordered close to the tumor. If this relationship between tumor cells and the surface epithelium was absent, the viral markers were not detected. Unfortunately, we did not found any microcystic adnexal carcinomas, porocarcinomas, spiradenocarcinomas, hidradenocarcinomas, apocrine carcinomas, Paget diseases and extramammary Paget diseases in the last year material.

The same situation was observed in benign tumours with apocrine and eccrine differentiation: 1 hidrocystoma, 1 poroma, 5 hidradenoma, 1 tubular adenoma, 1 tubular papillary adenoma, 2 syringocystadenomas papilliferum, 2 hidradenoma papilliferum, 2 mixed tumour (chondroid syringoma). The stratified squamous epithelium which covered tumors and was associated with them displayed the viral markers of the varying degrees. Sometimes these manifestations were expressed so intensive that resembled the warts. In the deep lesions (1 syringoma, 1 syringofibroadenoma, 2 spiradenoma, 2 cylindroma) the viral markers were not identified.

In tumors with follicular and sebaceous differentiation the viral markers were also frequently detected in the surface epithelium more often, but with different intensity. In our study we investigated 1 proliferating tricholemmal tumour, 3 trichoblastomas, 2 pilomatricomas, 1 tricholemmoma, 1 trichofolliculoma, 1 sebaceous carcinoma, 2 sebaceous adenomas and 2 sebaceomas. Such tumors as pilar sheath acanthoma, tumour of the follicular infundibulum, fibrofolliculoma / trichodiscoma and cystic sebaceous tumour were not included in the analyzed material.

Conclusion. The HPV infection is broadly spread over the country and is associated with the wide range of benign and malignant tumors of the skin.

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DATABASE OF VASCULAR PLANTS (EQUSETOPHYTA AND LYCOPODIOPHYTA)OF BELORUSSIAN LAKELAND OF VSU NAMED AFTER P.M. MASHEROV HERBARIUM

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The herbarium of the botanical department of VSU as a scientific collection was started by Martynenko V.P. in 1972. In the end of 1970s and the beginning of 1980s in the topics of rare plant species studying were held in Belarus. Suborova S.F. also studied rare and disappearing plant species. During all the years the members of the botanical circle and lecturers have been active collectors of samples for the herbarium [1].

Today the herbarium of the botanical department of VSU named after P.M. Masherov numbers more than 6 thousand herbarium samples. It consists of scientific and educational parts (the second part also includes moss and lichen species).

The high scientific value of the botanical department herbarium was confirmed by its inclusion into the government list of the botanical collections as the result of the Ministry of nature resources and environment protection board (02.03.2010 № 20-P; the botanical collection certificate № 51).

Nowadays, the development of computer technology gives an opportunity to use reliable databases, which enable to sum up the data of collected plants and to interchange data with other institutions.

In 1998-1999 the project "The botanical collections of Belarus" (IPS BCB) was started. This project was supported by the ministry of nature resources and environment protection and held by the Central botanic garden of National Academy of Sciences of Belarus. The database and the site of the project were worked out for the realization of National strategy for conservation and stable usage of botanic diversity, which was made for conservation and enrichment of the country genetic resources. This project contains the descriptions of different types of collections (including the collections of living plants in botanic gardens), the information about the history of formation, systematic composition, founders, and present curators of the collections.

Data which were used in the creation of the information resource can be either original or previously published. The original information can be collected by a questionnaire poll or can be directly included into the resource. Such information should have the date of the creation. The previously published information should have a link to the primary source.

In IPS BCB the forms for on-line registration of a collection and the creation of a sample list are suggested. The data are checked by a moderator and are put in the database with internet access. While fulfilling on-line form prepared lists of plants and classification of plants other data are used. It is recommended to use international nomenclature and taxonomic site (IPNI) and Plant List during fulfilling the poll lists [2, 3].

The information, stored in the botanical information resources can be a valuable instrument and object of study. Modern management of scientific and educational function of botanical network based on the collections, can be effective only with a parallel development of the collection registration systems and integrated informational-analytic systems (IAS). Such systems are supported by taxonomic resources, image database and geoinformation systems.

Earlier the herbarium of VSU was partly systematized with the help of Microsoft Office Access database, but only one family (Rosaceae) was processed. This fact gives a way for further work. The accurate analysis of all collections of vascular plants of VSU named after P.M. Masherov herbarium gives the possibility to take the information of flora changing, the biotopical preference of plant species.

The aim of the study – to systematize the vascular plants in herbarium of VSU named after P.M. Masherov and to create the information of Equsetophyta and Lycopodiophyta with Microsoft Office Access database.

Material and methods. The objects of study were the herbarium samples of the botanical department and the samples, collected by the author. The work starts from the main window of database « the herbarium of Vitebsk State University named after P.M. Masherov». This window contains the information about taxonomic composition (forms, species, genera, families); the number of samples of each taxonomic category; the list of all samples; the list of the labels sorted by families; the place of collection, the date of collection; the composition dynamic. The database includes the information from the herbarium labels. First go data about the collectors (surname and initials) and the persons who determined the species . Each herbarium sample is given its number. The area for species name contains the list of all Belarussian flora. The necessary species should be chosen from the list if the sought-for species is absent it should be added to the list. The region of the collection should be chosen from the list of the regions. The area "the place of the collection" is fulfilled by the information from the label and so on with other areas. The database also includes the area "note" where all additional information can be put.

Results and discussion. The author analyzed and added in the database the information of of Equsetophyta and Lycopodiophyta, stored in the herbarium of VSU named after P.M. Masherov by 01.09.2014. The herbarium includes 7 species of Equisetaceae family (tab. 1), 2 species of Huperziaceae family, 5 species of Lycopodiaceae family and 1 species of Isoetaceae family (tab. 2).

Table 1 – Equsetophyta of VSU herbarium

Species	**Number of samples**
Equisetum hyemale L.	15
Equisetum variegatum Schleich. Ex F. Weber et D. Mohr	5
Equisetum palustre L.	13
Equisetum fluviatile L.	13
Equisetum pratense L.	13
Equisetum sylvaticum L.	22
Equisetum arvense L.	14

Table 2 – Lycopodiophyta of VSU herbarium

Species	Number of samples
Huperzia selago (L.) Bernh. Ex Schrank et Mard.	23
Lycopodium annotinum L.	7
Lycopodium clavatum L.	22
Diphasiastrum tristachyum (Pursh) Holub	1
Diphasiastrum x zeilleri (Rouy) Holub	3
Diphasiastrum complanatum (L.)	8
Lycopodiella inundata L.	1
Isoetes lacustris L.	5

Conclusion. The herbarium of VSU named after P.M. Masherov by 01.01.2014, includes 7 species of Equsetophyta (87,5 % of all Belorussian Equsetophyta species) and 8 species of Lycopodiophyta (100 % of all Belorussian Lycopodiophyta species). Total 95 samples of Equsetophyta and 71 samples of Lycopodiophyta are stored in the herbarium.

It is necessary to replenish the database after each expedition season and to add the information of other vascular plant groups from the VSU herbarium.

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EFFECTS OF VARIOUS FACTORS ON THE PROTEIN CONTENT OF SACCHAROMYCES CEREVISIAE WHEN CULTURED

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Yeasts play an important role in natural ecosystems. In yeast food chains serve as an important link in the diet of invertebrates, carried destruction processes of plant residues. In the past decade a variety of biotechnological processes in which yeast is used, has increased dramatically, and is promising to use the yeast cells as an object of research and development in various patents [1]. *The purpose of the work* to determine the influence of various factors on the amount of protein in yeast cells during their cultivation.

Material and methods. Object of research – Saccharomyces cerevisiae in a dry and compressed form. For the cultivation of the yeast Saccharomyces cerevisiae used culturing method on solid medium. Impact factors: saccharose, antibiotic, oak silkworm pupae extract (OSPE). In the petri dish placed 5 ml of nutrient agar medium RM and additional influencing factors individually and simultaneously - antibiotics (cefazolin, C = 100 ug / ml), 100 ul OSPE (1: 100), 1 ml of 2% sucrose. After solidification of the culture medium on it sown with 1 ml of dry or compressed yeast living in a dilution of 1: 100. Petridishes are placed in an incubator for 24 hours at 32 ^{0}C over night culture of yeast is washed from the culture medium 10 ml of 0.9% solution of NaCl. Subsequently, yeast were pelleted by centrifugation and the amount of protein determined by the Lowry method [2].

Model to study the effects OSPE, sucrose and antibiotics on growth and development of yeast: group 1 –1ml dry yeast (1: 100) + 1 ml of saccharose (2%); group 2 – 1ml dry yeast (1:100) + 1 ml saccharose (2%) + antibiotic (100 ug /l); group 3 – 1ml dry yeast (1:100) + antibiotic (100 ug / l); group 4 – 1ml dry yeast (1:100) + antibiotic (100 ug /l) + 1 ml saccharose (2%) + 100 ul OSPE (1:10); group 5 – 1 ml of dried yeast (1:100) + 1 ml saccharose (2%) + 100 ul OSPE (1:10); group 6 – 1ml dry yeast (1:100) + 100 ul OSPE (1:10); group 7 – 1 ml live Pressed yeast (1:100) + 1 ml saccharose (2%); group 8 – 1 ml of live compressed yeast (1:100) + 1 ml saccharose (2%) + antibiotic (100 ug /l); group 9 – 1 ml of live compressed yeast (1:100) + antibiotic (100 ug /l); group 10 – 1 ml of live compressed yeast (1:100) + antibiotic (100 ug /l) + 1 ml saccharose (2%) + 100 ul OSPE (1:10); group 11 – 1 ml of live compressed yeast (1:100) + 1 ml saccharose (2%) + 100 ul OSPE (1:10); group 12 – 1 ml of live compressed yeast (1:100) + 100 ul OSPE (1:10).

Mathematical treatment of the results was performed by parametric and nonparametric statistics using the statistical software package Microsoft Excel 2003, STATISTICA 6.0.

Results and discussion. Statistically significant quantitative increase in cells confirm the importance of the protein concentration in the studied groups of baker's yeast (Table 1).

Table 1. – Protein content (mg /l) in the yeast cells by culturing them and using sucrose antibiotic OSPE (M ± m)

Group	Type and breeding yeast	
	1ml dry yeast (1: 100)	1 ml of live compressed yeast (1: 100)
Control	189,2±8,63	256,3±8,63
1 ml saccharose (2%)	291±6,23^{1}	458±8,32^{1}
antibiotic (100 ug / l)	236±5,63	244±4,33
100 ul OSPE (1:10).	311±4,15^{1}	480±4,44^{1}
1 ml saccharose (2%) + antibiotic (100 ug /l)	405±7,43$^{1-3}$	543±6,54$^{1-3}$
1 ml saccharose (2%) + 100 ul OSPE (1:10)	466±9,13^{1,2,4}	465±6,11^{1}
antibiotic (100 ug /l) + 1 ml saccharose (2%) + 100 ul OSPE (1:10)	504±10,6$^{1-4}$	587±11,2$^{1-4}$

Note – ^{1}P <0.05 compared to control; ^{2}P <0.05 compared with the group of agar + saccharose; ^{3}P <0.05 compared with the group of agar + antibiotic; ^{4}P <0.05 compared with the group of agar + OSPE.

The increase in total protein content (Table 1) adding to the broth OSPE and additional factors (antibiotic, saccharose): saccharose – 53.8% increase in dry yeast at 78.7% to live yeast; saccharose + antibiotic – to 114.1% and na111,8%, respectively; OSPE – by 64.4% and 87.3%, respectively; OSPE + saccharose – by 146.3% and 81.4%, respectively; OSPE + saccharose + antibiotic – at 166.4% and 129.3%, respectively; antibiotic – an increase of 24.7% for the dry yeast and decreased by 4.8% for the live yeast.

Consider the change in the protein content of the following groups: 1) containing antibiotics: Antibiotics - 100%; antibiotic + saccharose – increased by 71.6% for the dry yeast and 122.5% for the live yeast; antibiotic + sucrose + OSPE – at 113.6% and 140.6%, respectively; 2) containing saccharose: saccharose – 100%; saccharose + antibiotic is the number of cells increased by 39.2% and 18.6%, respectively; saccharose + OSPE – by 60.1% and 1.5%, respectively; saccharose + antibiotic + OSPE – by 73.2% and 28.2%, respectively; 3) containing OSPE: OSPE – 100%; OSPE + saccharose – the number of yeast cells increased to 49.8% for the dry yeast and decreased by 3.1% for the live yeast; OSPE + saccharose + antibiotic – increased by 62.1% and 22.3% respectively.

Conclusion. Thus, the use of saccharose and extract oak silkworm pupae individually and collectively increases the concentration of protein in the cells of baker's yeast. The joint presence of three factors contribute to increase the protein level providing optimum productivity increase culturing yeast cells.

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PATHOMORPHOGENESIS OF UROLITHIASIS AT HENS

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In the conditions of poultry farming of disease of nephroses have a wide circulation. They cause the significant economic injury bound to raised sick rate and a lethality, falloff of meat and egg efficiency. Inflammatory and dystrophic processes in nephroses of hens can educe at influence of many factors: errors in feeding, viruses, bacteria, etc.

Most often met pathology of nephroses at henss is the urolithiasis which is characterised by deposit of urates of calcium in urinary to system of birds. Thus, as practice shows, a basis for the presumable diagnosis on production often are results only pathoanatomical dissection of corpses gorged and forcedly killed hens. In most cases histological research of nephroses is not made [1].

Considering the aforesaid and that fact, that the question on pathomorphologic diagnosis of an urolithiasis at hens in the literature is not shined, it and has formed the establishment for studying of an offered theme of work.

The purpose of the our work – studying pathomorphogenesis an urolithiasis at hens.

Material and methods. As a stuff for research the pathological stuff (nephroses) culled on poultry factories of an egg direction served. According to anamnestic data in economy sick rate and epizooty of hens of different age groups have raised. Clinically at the ill hens noted backlog in growth and development, apathy, the general anaemia. At dissection of the gorged hens of advanced age deposits of urate salts in ureters, on a liver, heart and on a surface of a warm shirt is more often became perceptible. Nephroses have been sharply enlarged, supported limens of natural borders. Colour of an organ is variated and had a mottled appearance. On a slit of nephroses became perceptible growths.

In economy, the gorged hens whence has entered, made prophylactic immunization against Marek disease and Njukasle disease, infectious bronchitis and IBD. Chickens have been received from parents, vaccination by an alive vaccine against an infectious anaemia (CIA).

At dissection of corpses considered character and gravity of pathomorphologic changes. Organ scraps fixed in 70% ethanol. The fixed stuff subjected to inspissation by paraffin embedding under the practical standard [2]. The deaquation and waxing of scraps of organs made by means of the automatic machine for histological processing of tissues «MICROM STP 120» (Germany) of phylum "Karusel". For embedment of scraps and preparation of paraffinic blocks used automatic station «MICROM EC 350». Microscopic sections of scraps of the organs which have been filled in in paraffin wax, prepared on microtome «MICROM HM 340 E». For studying of the general structural changes sections imbued a hematoxylin-eosine [3]. Deparaffirovanisation and staining hystopreparations made with utilisation of automatic station «MICROM HMS 70».

Results and disccussion. At research of the delivered assays of nephroses of a repair joung growth similar changes are taped: the organ has been enlarged in the dimension, colour motley – grey-white plots alternated with foxy colour plots. At hens-laying hens of a nephros have been sharply enlarged in the dimension, an elastic consistence, from a surface and on a slit.

At histological research of nephroses of birds at the age of 35 days the hyperemia of capillars, a serous dropsy of a parenchyma and a stroma, a protein nephrosis, by places – a necrosis and a lysis of an epithelium of canaliculuses is positioned.

At hens 28 and 36-day age besides a congestive hyperemia and a serous dropsy also observed an acinose and vacuolar dystrophia of an epithelium of canaliculuses.

Thus at birds of 96-day age besides the above-stated changes the atrophy and a sclerosis of vascular glomuluses were taped also.

To 126-day age at hens more serious processes in nephroses educed, namely: basphilic deposits of crystals of urate salts of calcium in a lumen of urinific canaliculuses and a stroma of vascular glomuluses, overflow of the collective tubules protein oxifil in mass with an atrophy of a lining epithelium, a focal necrosis of urinific canaliculuses and the collective tubules. The expressed intersticial nephritis – a proliferation of fibroblasts, with a sharp thickening of connective tissue septums between canaliculuses and balls became perceptible.

At the same time at hens 150 and 156-day age we position focal deposits of crystals of urates of calcium in canaliculuses, the collective tubules and a pelvis; the expressed protein nephrosis, places – a necrosis of canaliculuses and connective tissue growth between canaliculuses, in a stroma of vascular glomuluses with an atrophy of the last.

Conclusion. The serious us serious and long pathomorphologic changes (deposits of urate salts in a lumen of urinific canaliculuses and a stroma of vascular glomuluses, an atrophy and a necrosis of an epithelium of urinific canaliculuses and the collective tubules, an atrophy and a sclerosis of the vascular glomuluses, the expressed intersticial nephritis) in nephroses at a repair joung growth and hens-laying hens are characteristic for an urolithiasis (urolithiasis). Comparison of anamnestic data, results of inspection and histological research of nephroses allows us to draw breeding that macroscopical structural changes of thise organ (augmentation in the dimension, a mottled kind, a slit) are caused by development of an intersticial nephritis.

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ACTUAL PROBLEMS OF VETERINARY MEDICINE AND ZOOLOGY

HOLIN-HLORID AS ONE FROM TYPES OF ADDITION IN POULTRY FARMING

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A biological role of holin is in the exchange processes of consist, as in the carrier of groups, saving a methionine the same. In presence holin there is a speed-up synthesis of phospfts , that is transported on blood vessels easier, than fats, more active oxidize and quicker abandon a liver, that from prevent her fatty regeneration. Analogical influence of substances near on a structure to holin, for example betain. In fabrics holin is able to pass to the colamine and then in a serine and back.

Besides the acceleration of synthesis of phosphotides holin, being their component element, is needed for a structure and maintenance of structural cages, and also for the normal ripening of cartilaginous matrix of bone. Therefore holin together with a manganese and vitamin of B_5 is needed for notify perozis for birds. Holin is not the catalyst of exchange process, but needed for forming of major structural components fabrics. Holin, uniting with transforms in acetylcholinum, neurohumor of nervous excitement, easily appearing and easily collapsing in fabrics of animals under act of enzyme of acetylcholinum. A holin hlorid assists the best mastering of vitamin and, at his sufficiency it is possible to shorten the norm of vitamin of A on 20-30%.

Under influence of holin there are an increase of synthesis and fixing of hepatin in a liver. And another such physiologically important link exchange of substances, as transmethylations, in the organism of animals flow can only with participation of holin. And last from the known positives properties of holin - negative influence of the chlorogenic acid most contained in sunflower feed and pomace diminishes under his influence. In respect of requirement of agricultural animals and birds in the vitamin of B_4, then in latter days the row of experiment was conducted in our country and abroad and everywhere an input in the mixed fodder of enhanceable amount of holin hlorida gave positive results.

Aim of work. The aim of our researches was a study of holin hlorida, as one of important additions used in the poultry farming.

Material and methods. A holin hlorid is a vitamins substance entering in the complement of phosphotides. It is dry friable grainy powder of fawn color with an easy amic smell, that is used in composition the mixed fodders for agricultural animals and bird as a source of holin (vitamin of B_4) executing in an organism vitally important functions and rendering substantial influence on a health and productivity of sapling/pl and adult population.

One of reasons of growth of necessity of agricultural animals and birds in holin is an increase in the ration of new breeds of animals and cross-country races of bird of high-calorific forage, especially fats, which require the enhanceable norms of vitamin of B_4. The greatest requirement in additional holin a bird tests in an initial period. As far as slowing down of height a necessity diminishes for addition of holin. Hormones substantially strengthen a requirement in holin for the synthesis of phosphotides in the liver of chickens for maintenance of process of formations yolk. A requirement in holin depends also on the level of methionine in a ration, and also from providing a folacin and vitamin of B_{12}.

Results and discussion. Holins insufficiency, as well as other vitamins, can arise up for diverse reasons. So possibility of displays of holins insufficiency sharply increases at the increase of quantity in the rations of cistina and hiaminum, that assist translation of carbohydrates in fat. His not-complete availability reduces the provision of animals vitamin of B_4 from sources (from the vegetable components of accessible holin 60-70 makes and his present antagonists, in particular, chlorous 3-holin. At the sapling/pl of bird the lack of holin causes the decline of height and perozis, that is characterized weakening of ligamentary vehicle and tendons of muscles of extremities, because of what there is free displacement of joints (sliding joint). At perozis a joint is thickened, lower end of anymore-metatarsus bone distorts. It is usually staggered only one leg. Perozis at the sapling/pl of bird can be observed and at presence of holin .but at the lack of such factors of feed, A holin hlorid is a substance with enhanceable by a hygroscopicity,that results in strengthening of chemical reactions resulting in decay vitamins in премиксах. The most negative influence a holing hlorid renders on the vitamins of B_1, B_6, K_3, and C. Holin oxidizes easily, grows at first into an aldehyde-muscarine, and then in acid – betain. At the loss of molecule of water, id est, restored, holin of turn in the neurine, discovered in composition blood, brain in very a few in the constrained state. A free neurine is very toxic.

Conclusion. In natural forage vitamin of B_4 be in related to the lipids to the form. Holin is synthesized in the organism of animals from the amino acid of serine and methionine at sufficient securing by a folacin and vitamins of B_{12}. Therefore at the normal providing of adults of animals they do not have insufficiency of high quality forage in the vitamin of B_4. Therefore preparations of holin must first of all entered in the mixed fodder to the sapling of bird and pigs.

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IMPROVEMENT OF DIAGNOSTICSOF MUELLERIOSIS

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Larvamigration methods currently used for the diagnosis of parasitic diseases, like most other scatoscopy methods are far from perfect. Developed in the early twentieth century (Berman, Vajd, Wetzel) and advanced in the mid-twentieth century (Shilnikov, Scherbovich) methods are based on basic knowledge of the biology of the agent and the primitive to the modern level of scientific development of technical solutions. Attempts Kotelnikova and Khrenova in the 80-s template approaches to flotationin the diagnosis of pulmonary nematodosis weren't crowned with success.

Today any of the larvaescopics of methods not only doesn't provide identification of all larvae which are in the studied test sample, but also constancy of level of productivity since it depends on a set of uncontrollable factors (the size of peas of excrements, their porosity; mobility of larvae; accuracy of the dosing system; efficiency of accumulative system, etc.).

Material and methods. Improving diagnosis of muelleriosis implemented in four phases. In the first phase examined the efficiency of the functional elements of the currently used methods (Berman, Vajd). At the second stage designed the devices deprived of the established shortcomings. At the third stage developed the environments for allocation of larvae providing activation of their mobility.In the fourth stagestudied comparativeefficiencyof our developedandpreviously developedmethodsand devices.

Results and discussion. The main imperfectionsof the methodof Bermanare:

1. The minimumeffective volumeof the dosing element (clampMohr on the rubber tube) is 1.0ml, which exceeds the volume which can be placedon asubject glass.

2. The accumulative element (funnel) has the considerable volume causing a randomness of process of concentration of larvae. The angle of inclination of the walls of the funnel causes sedimentation of larvae in the mend thus delay their concentration in the rubber tube from the clamp.

3. The fixing element (gauze / strainer) using gauze reduces the area of the free surface of the test material and serves as a barrier to the advancement of the larvae in the accumulative concentrating element.

The main imperfectionsof the method of Vajd are:

1. The volume of liquid used to moisten the sample exceeds that for placement on subject glass, which increases the time required for microscopy.

2. At all times during the study most of the sample part is only slightly damp, that causes an exit only the part of larvae.

3. Depending on temperature and humidity of air indoors within 15-60 minutes there is a full drying of the liquid used for test moistening that demands its completion.

The above shortcomings testify to impossibility of standardization of diagnostics of a muelleriosis when using methods of Berman and Vajd.

In elimination of the above shortcomings the wasdeveloped device consisting of a polystyrene pipette and with rubber stopper. Functional elements of accumulation and concentration combined into the pipette. The retaining member is absent or needle fixed in a traffic jam (it strung test material). The dosing element is realized elastic properties of pipette - with its compressive internal volume is reduced and there is an allocation liquid which contains larvae.

For carrying out research in a pipette was placed 5,0 g faeces, close a rubber stopper, placed vertically a stoppered down and by means of a syringe (20,0 ml) through an opening of the narrowed part filled a pipette with tap water with a temperature of 30-35 º C. Was placed in a rack vertically a stopper up. Exposition2 hours. Place subject glass in a rack under a pipette. Squeeze a pipette in the top part index finger and thumb to release on subject glass of three drops of liquid.The resulting material was covered with a cover glass and microscopy. The method of diagnostics of a muelleriosis which is carried out in pipettes at a temperature of 30-35 °C is 1,3 times more effective than Berman's method and by 1,8 times - a method Vajda. The method which contains pipette is simple performed by, allows to receive in the minimum terms (2 hours) the greatest number of invasive beginning.

Second we have developed the device which consists of a conical flask of 100 ml, a rubber adapter, polystyrene pipette, and the fixing element - a plastic mesh. The device allows you to explore a larger volume of sample that can increase diagnostic accuracy, and also to carry out accumulation of the parasite larvae. The Rubber adapter provides convenient dosing of the test material.

To increase the physical activity of larvae Muellerius, and, therefore, reduce the time the study, developed the medium, which is an aqueous solution of chemical reagents.

Conclusion. Larvamigration methods of diagnostics of a muelleriosis by designing of new devices for allocation of larvae of muellerius from faeces on the basis of selection and development of the optimization functional elements, and also use the mediums of increasing physical activity of larvae have been improved.

NEW EFFECTIVE METHODS OF NON-APPARATUS DISINFECTION IN LIVESTOCK PREMISES

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At present animal husbandry of the Republic of Belarus practices industrial raising of farm animals under conditions of mass keeping of livestock in confined areas, which becomes a ground for contamination by a considerable number microscopic agents contained in the air and on the surface of production equipment in animal houses. Such technological features in animal housing has its impact on the level of development of mass respiratory and gastrointestinal diseases of infectious etiology in animals, and this leads to additional economic losses due to expenses for diagnosis and treatment. The most common among these diseases are bronchopneumonia and diseases with a diarrheal syndrome [3].

One of the most important measures aimed at the prevention and destruction of infectious animal diseases is aerosol disinfection (sanitation) of air and equipment in the process of raising animals or birds [1].

Disinfection of air in livestock premises by disinfectant aerosols is currently confined by the water dispersion method, which involves the spraying of atomized disinfectant. This method needs expensive equipment, high energy costs, and also it is time-consuming [2].

More advanced in this relation are the so-called "dry aerosols" produced by burning of solid fuel compositions (smoke cartridges) [4].

Disinfectants the most affordable for wide aerosol application include halogen-containing preparations. Among them effective are disinfectants based on bromine, chlorine and iodine. Preparations of chlorine are not applicable for disinfection of metallic surfaces due to their strong corrosion effect against metals and irritation of the mucous membranes and skin of humans and animals. Disinfectants based on bromine are expensive and are used mainly for water disinfection. Iodine is widely used for disinfection, as a component of biological additives, water treatment, for treatment of animals, as a micro fertilizer. Iodine deficiency leads to diseases of the thyroid gland (e.g., endemic goiter). Therefore, the use of iodine supplements in the form of aerosols is also very important for the prevention of iodine deficiency in animals.

A distinctive feature of disinfectants on the basis of iodine is the lack of resistance of microorganisms, viruses, protozoa at long-term use of disinfectants. A wide range of bactericidal, tuberculocidal, sporicidal and fungicidal action allows iodine to be considered as one of the universal ways of eliminating pathogenic microorganisms.

The purpose of this work is to establish the efficacy of smoke cartridges of various designs for disinfection of livestock production premises.

Material and methods. The research was carried out in the livestock premises of the Republic and based on analysis of the works of specialists in the field of aerosol disinfection. Practical method of research was the use of smoke cartridges «MK-IODINE» and «DIXON» for dry aerosol disinfection indoors avoiding the draft, to ensure the presence of nanoparticles in the air of an object [5].

Results and discussion. The preparation «MK-IODINE» is a tablet weighing 150 g, consisting of a mixture of potassium iodide and other flammable components. A smoke cartridge «DIXAM» presents a powdery substance comprising the iodine bromide complex as well as other components that are enclosed in plastic capsule. The content of the capsule can be easily ignited by an ordinary match. When burned pyrotechnic composition produces a smoke of brownish-violet color, consisting of vapors of iodine, spreading across the housing. Disinfection by a dry method was conducted indoors avoiding drafts, to ensure the presence of nanoparticles in the air of an object.

During sublimation of these cartridges an adjustable gas environment is formed, containing disinfective substances in the form of vapor. Thus, the formed nanoparticles fill the entire volume of the room, and all places difficult for common atomized spray.

The using of smoke cartridges «MK-IODINE» is achieved by reducing the total amount of microorganisms in the air for about 30-50 % of the initial content of microorganisms in indoor air. The efficacy of the bactericidal action of smoke cartridges was determined by the content of the total number of microorganisms in the air before and after disinfection on the surface of premises. It should be noted, that due to its bactericidal properties a smoke cartridge «DIXAM» slightly inferior to the preparation «MK-IODINE». Additionally, at storage this preparation allows spontaneous evaporation of iodine vapor, which leads to loss of bactericidal activity of the smoke cartridge.

Positive aspects when using these cartridges are: a significant decrease in the content of sanitary-indicative microorganisms (Escherichia coli and Staphylococcus) and microscopic fungi on production surfaces in livestock premises.

Formed by sublimation nanoparticles are detrimental to pathogens due to the presence of negative electric charge. Dry vapors of iodine-containing disinfectant possess a deep penetrating ability, which is very important for porous structures, where the infectious agent can be stored for long and even accumulated.

Conclusion. In conclusion it should be noted that such method of disinfection, in spite of some positive aspects, has not found its wide spread on farms of the Republic till now. This is due to the fact that most of the livestock enterprises use traditional methods of sanitation using disinfectants in the form of solutions. Use of smoke cartridges allows to extend the scope of their application, which is important. So, for example, cartridges containing iodine and fir oil can also be used for control of infectious diseases of plants and for treatment of vegetables storehouses**.**

A cyclic disinfection by smoke cartridges promotes thorough disinfection of premises.

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VALUE OF MINERAL SUBSTANCES IN EXCHANGE PROCESSES FOR ANIMALS

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On the basis of study of local forage riches, chemical composition of forage, them to calorie content and biological full value, and also researches of physiological and biochemical processes in the organism of animals are set to the necessity of all types of animals in nutritives.

The power side of metabolism is studied and set calorie content forage, what feeding allows to ration on power of value (to calorie content) of forage. Investigational basis of amino acid, vitamin and mineral feed of animals and going is found near a management by metabolism in the organism of animals. The study of amino acid composition of proteins allowed to balance rations on amino acid composition of forage. The recipes of substitutes are developed

Presently the once-personal chemicals are intensively used in a stock-raising. For maintenance and upgrading of forage different preservatives, unalbuminous nitrogenated additions, vitamins, antioxidants, are used, and also other biologically active substances[1].

Mineral elements do not appear in an organism, and, in this connection, animals must get them with forage and forage additions.

Organism a microelement necessary for to the vital functions of organism enters, but in considerably large concentrations, that it can be related to the features of biogeochemical provinces or with by a result of unreasonable activity of man.

Violation of balance of microelements is possible as a result not receivabless or insufficient receipt, that also can be related to the features of biogeochemical provinces or with a production.

The basic role of mineral substances in an organism consists in adjusting of equilibrium, permeability of membranes, maintenance on permanent

The aim of our researches is an exposure of intercommunications between maintenance of mineral substances in forage and them by influence on exchange processes what be going on in the organism of animals.

Material and methods. During researches there is a analysed presence of mineral substances; mineral composition of the forage used in feeding of animals is studied; maintenance of some is studied macro- and microelements in blood.

Results and discussion. By the main source of entering organism of animal major mineral substances of are feed. A defect or surplus of mineral elements and vitamins in forage inflicts a considerable damage to the stock-raising, answer reduces immunoreactions, fecundity, effective use of nourishing substances, productivity, causes diseases and case, worsens quality of milk, meat, eggs, wool, hides of fur beasts, leather raw material.

Feeding with subzero maintenance of microelements stipulates a deficit the cattle of forage these In blood there is the phosphorus related to organic by connections (hemocytes), in a serum mainly there are inorganic phosphates. The table of contents of inorganic phosphorus in the to the serum of blood depends on a kind, age and physiological state of organism.

The lowered maintenance of phosphorus in a serum takes place at a rachitis, surplus of calcium in a ration, at violation of suction of phosphates in bowels.

Determination of inorganic phosphorus is in blood, besides the diagnosticating row of diseases, a Ca:Pcorrelation allows to control. For healthy animals in a norm it must be 1,6: 2. Change of this correlation talks about violation of Ca:P exchange.

Conclusion. As a result of undertaken studies intercommunication was educed between maintenance of mineral substances in a stern is an animal. The requirement of animals in microelements is conditioned not only by organic and mineral composition of the fed forage, but by such factors, as intensity of height, level of the productivity, physiological state (pregnancy, lactation).

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CONDITION, PROSPECTIVES, VETERINARY PROBLEMS IN SHEEP-BREEDING AND WAYS OF THEIR SOLUTION IN BELARUS

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Sheep-breeding in the Republic of Belarus has always been though traditional, however, it is more auxiliary branch of cattle breeding, held on an extensive basis. The greatest number of sheep was kept in 1939-1940 – 2.5 million animals. In postwar years the number of sheep on farms of the public sector amounted to 400-700 thousand, in private households it was 120 – 130 thousand animals. In order to increase the performance of farmed breeds – prekos, romanovskaya**,** the Latvian dark-headed, for the intensification of sheep production and improvement of products quality, specialization of sheep breeding was undertaken in the 80-ies. More than 120 specialized farms were created, which kept 3000 sheep at average [2].

The purpose of this work is to study the condition and prospectives of development of sheep-breeding in the Republic of Belarus.

Material and methods. The methodological basis of the investigation are works of Belarusian and foreign scientists on the sheep-breeding. Following methods were used: analysis, systematization, generalization.

Results and discussion. However, the technologies proposed at that time, aiming to increase the overall sheep production, did not adequately assume climatic and biogeochemical characteristics of the region, conditions of industrial housing and feeding of sheep as well as veterinary service. In the 90-ies of the last century these problems worsened, as it was impossible to obtain pure products in the southern regions because of the catastrophe at the Chernobyl nuclear power plant. Pronounced seasonal dependence, in wool production, difficulties in realization of wool, pelts and animals, the disparity of prices for the products of sheep origin were obstacles. Economic and technological problems generated massive spreading of infectious, invasive, non-infectious diseases in sheep, that in the whole practically led to a severe decrease at sheep-breeding industry. The number of sheep rapidly declined , and dropped from 204 700 in 1996 to 48 000 in 2013. At that time agricultural organizations of the Republic totaled only 6 000 heads [1, p.65].

To eliminate all this negative phenomena and to meet the requirements of the population for wool, mutton and skin, there raised a necessity for the development of the Republic Program for the Development of Sheep-breeding [3]. A stage by stage recovery of the branch is assumed. Before 2015 a pure bred stock base will have been formed in order to provide breeding farms with replacing herds. The second stage will become the development of commodity production with the number of sheep reaching 100-150 thousand heads.

Conclusion. Directions for governmental support of the sector, which assumes the supply of young stock, sheep breeding and veterinary service though improved scientific research in the area of target sheep diseases.

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PATHOMORPHOGENESIS OF UROLITHIASIS AT HENS

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In the conditions of poultry farming of disease of nephroses have a wide circulation. They cause the significant economic injury bound to raised sick rate and a lethality, falloff of meat and egg efficiency. Inflammatory and dystrophic processes in nephroses of hens can educe at influence of many factors: errors in feeding, viruses, bacteria, etc.

Most often met pathology of nephroses at henss is the urolithiasis which is characterised by deposit of urates of calcium in urinary to system of birds. Thus, as practice shows, a basis for the presumable diagnosis on production often are results only pathoanatomical dissection of corpses gorged and forcedly killed hens. In most cases histological research of nephroses is not made [1].

Considering the aforesaid and that fact, that the question on pathomorphologic diagnosis of an urolithiasis at hens in the literature is not shined, it and has formed the establishment for studying of an offered theme of work.

The purpose of the our work – studying pathomorphogenesis an urolithiasis at hens.

Material and methods. As a stuff for research the pathological stuff (nephroses) culled on poultry factories of an egg direction served. According to anamnestic data in economy sick rate and epizooty of hens of different age groups have raised. Clinically at the ill hens noted backlog in growth and development, apathy, the general anaemia. At dissection of the gorged hens of advanced age deposits of urate salts in ureters, on a liver, heart and on a surface of a warm shirt is more often became perceptible. Nephroses have been sharply enlarged, supported limens of natural borders. Colour of an organ is variated and had a mottled appearance. On a slit of nephroses became perceptible growths.

In economy, the gorged hens whence has entered, made prophylactic immunization against Marek disease and Njukasle disease, infectious bronchitis and IBD. Chickens have been received from parents, vaccination by an alive vaccine against an infectious anaemia (CIA).

At dissection of corpses considered character and gravity of pathomorphologic changes. Organ scraps fixed in 70% ethanol. The fixed stuff subjected to inspissation by paraffin embedding under the practical standard [2]. The deaquation and waxing of scraps of organs made by means of the automatic machine for histological processing of tissues «MICROM STP 120» (Germany) of phylum "Karusel". For embedment of scraps and preparation of paraffinic blocks used automatic station «MICROM EC 350». Microscopic sections of scraps of the organs which have been filled in in paraffin wax, prepared on microtome «MICROM HM 340 E». For studying of the general structural changes sections imbued a hematoxylin-eosine [3]. Deparaffirovanisation and staining hystopreparations made with utilisation of automatic station «MICROM HMS 70».

Results and disccussion. At research of the delivered assays of nephroses of a repair joung growth similar changes are taped: the organ has been enlarged in the dimension, colour motley – grey-white plots alternated with foxy colour plots. At hens-laying hens of a nephros have been sharply enlarged in the dimension, an elastic consistence, from a surface and on a slit.

At histological research of nephroses of birds at the age of 35 days the hyperemia of capillars, a serous dropsy of a parenchyma and a stroma, a protein nephrosis, by places – a necrosis and a lysis of an epithelium of canaliculuses is positioned.

At hens 28 and 36-day age besides a congestive hyperemia and a serous dropsy also observed an acinose and vacuolar dystrophia of an epithelium of canaliculuses.

Thus at birds of 96-day age besides the above-stated changes the atrophy and a sclerosis of vascular glomuluses were taped also.

To 126-day age at hens more serious processes in nephroses educed, namely: basphilic deposits of crystals of urate salts of calcium in a lumen of urinific canaliculuses and a stroma of vascular glomuluses, overflow of the collective tubules protein oxifil in mass with an atrophy of a lining epithelium, a focal necrosis of urinific canaliculuses and the collective tubules. The expressed intersticial nephritis – a proliferation of fibroblasts, with a sharp thickening of connective tissue septums between canaliculuses and balls became perceptible.

At the same time at hens 150 and 156-day age we position focal deposits of crystals of urates of calcium in canaliculuses, the collective tubules and a pelvis; the expressed protein nephrosis, places – a necrosis of canaliculuses and connective tissue growth between canaliculuses, in a stroma of vascular glomuluses with an atrophy of the last.

Conclusion. The serious us serious and long pathomorphologic changes (deposits of urate salts in a lumen of urinific canaliculuses and a stroma of vascular glomuluses, an atrophy and a necrosis of an epithelium of urinific canaliculuses and the collective tubules, an atrophy and a sclerosis of the vascular glomuluses, the expressed intersticial nephritis) in nephroses at a repair joung growth and hens-laying hens are characteristic for an urolithiasis (urolithiasis). Comparison of anamnestic data, results of inspection and histological research of nephroses allows us to draw breeding that macroscopical structural changes of thise organ (augmentation in the dimension, a mottled kind, a slit) are caused by development of an intersticial nephritis.

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HISTORICAL DYNAMICS AND SPIRITUAL CULTURE OF THE SOCIETY: REGIONAL AND GLOBAL CONTEXTS

SANITARY-PREVENTIVE WORK OF THE RED CROSS SOCIETY OF BSSR IN THE FIRST DECADE AFTER THE GREAT PATRIOTIC WAR TERMINATION

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In the decision of questions of the state building, including public health care of the USSR, public organisations took active part. Society of the Red Cross (SRC) BSSR throughout a long time was one of the most massive public organisations and had the big human resource that allowed to have various lines of activity. Throughout 1943-1950 a qualitative professional training in corresponding directions changed, propaganda activity and the help to public health services bodies extended. The purpose of our work consists in showing works of SRC BSSR on struggle against infectious diseases, in improvement of a sanitary condition of settlements during the period from the beginning of republic liberation and the next decade.

Material and methods. As a source for research materials from funds of National archive of Republic of Belarus, and also the edition of Executive committee Union of Societies of Red Cross and Red Crescent (USRC and RC) about activity of the RC organisation. Methods of the analysis and synthesis, comparison and generalisation which have helped to define and reveal characteristic features of each direction have been used.

Results and discussion. Especially the difficult situation has developed after liberation the territory of the republic from fascist aggressors. Cities and villages were destroyed, there was no necessary material and financial base for restoration of qualitative medical and sanitary service. In the republican territory, there were mass infectious diseases. In some, ten times disease of malaria, tuberculosis, syphilis, and itching had increased. Here the invaluable help of anti-epidemic services after clearing has rendered RC though at first in sanitary-preventive and anti-epidemic work difficulties in connection with absence of the accurate structure, an insufficient permanent-medical network was marked. However efforts of the Society have accelerated possibility of returning of people to normal living conditions.

Initially the Executive committee USRC and RC had organized 30 groups, 8 from which l worked in BSSR [1, p. 119]. Their powers included actions for revealing and hospitalization of patients, sanitary processing of the population and things, carrying out of inoculations. With a view of liquidation of medicosanitary consequences of occupation in BSSR since 1945, 15 groups worked already [2, p. 19].

In spite of the fact that a part of areas BSSR were in 1944 in a zone of the military operations which population settled out from a front line, work of organisations of RK on strengthening of sanitary defence was spent intensively. There was created sanitary squads and sanitary posts which rendered the effective help to public health services bodies at an air attack of the opponent and on liquidation of epidemic diseases [2, p. 3]. Sanitary-epidemiological units were created according to decision of CPC in the USSR from April, 1st, 1944. Initially Executive committee USRC and RC had organised 30 groups, 8 from which l worked in BSSR [1, p. 119]. Their powers included actions for revealing and hospitalisation of patients, sanitary processing of the population and things, carrying out of inoculations. As a rule, groups from 16 persons led by the doctor were supplied with medicines, disinfection means, had sanitary-and-hygienic laboratory and could develop on a place small hospitals of 15 cots. After the arrival in the area groups together with suited baths, laundries, spent preventive inoculations, disinfected clothes, assisted those who suffered from explosions of mines [1, p. 119].

In 1944 sanitary-epidemiological units served the most amazed areas and republic areas, counteracting a parasitic typhus, an itch and children's infectious diseases. Lectures and conversations were for this purpose conducted, in rural and city district walls, a condition of court yard were surveyed [2, p. 21]. As a result of their activity there was a sharp improvement of an epidemic condition disease decrease by a parasitic typhus at 10-15 time for example, has been registered [2, p. 22, 23]. Then the problem set for the Society was to adapt the work for peace time conditions.

After the end of the war, groups were switched to service of points through which took place, the population which was returning home after a German captivity, began to be engaged in preventive maintenance of tuberculosis and malaria, trachoma [3, p. 120]. Struggle against cancer diseases was amplified. So, in 1946 at Central Committee SRC BSSR the anticarcinogenic commission was created [2, pp. 8, 9]. Preparation from among the most active members of the Society shaped an active prevention and maintenance of illnesses and had great value. In the republic, committees on cancer preventive maintenance, struggle against tuberculosis were created. We will notice that themes on preventive maintenance and struggle against oncological diseases have been included also in programs of preparation of nurses, sanitary squadders and RSD (ready to sanitary defense) [3, p. 148]. It testified to the serious approach of the Society to counteraction of diseases during the post-war period.

A number of actions have been developed by authorities. So, according to the decision of SM BSSR from December, 25th, 1947 About actions for liquidation of the epidemic centres of disease by a parasitic typhus in the Belarus Soviet Socialist Republic, the organisations were offered to be created together with public health services bodies from active workers of a brigade and to inspect a sanitary condition of public places. It was necessary to carry out household detours, to involve in it sanitary action, and from district committees performance of decisions with granting of figures was required. Carrying out similar decisions in 1949 in BSSR 85 thousand active workers took part in sanitary inspections. It has been examined that 236 thousand objects that revealed defects have been eliminated in 103,8 thousand cases [1, p. 148]. We will notice the public organisations were dependent on the state decisions, their activity passed in frameworks Nationwide campaigns. However examples when with public health services structures there was no coordination in work that testified to the undeveloped scheme of joint activity and presence of a formalism at activity RC are known.

The conclusion. For strengthening of health of the population special actions were carried out. Together with workers of public health services SRC combated with infectious and non-infections, participated in actions for the prevention of disease and decrease in death rate of the population. Originally for restoration of normal sanitary conditions in republic work sanitary-epidemiological units in the released territories was important. By 1950 of organisation SRC began to give more attention to giving of multipurpose character to preparation of a sanitary active, number increase sanitary posts and sanitary squads, preparation profilized actives.

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LANGUAGE AS A SYSTEM OF SIGNS AND MEANS OF COMMUNICATION

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A language is a system of signs (vocal sounds or written symbols) that encodes information. Estimates of the number of languages in the world vary between 5,000 and 7,000. Depending on philosophical perspectives regarding the definition of language and meaning, when used as a general concept, "language" may refer to the cognitive ability to learn and use systems of complex communication, or to describe the set of rules that makes up these systems, or the set of utterances that can be produced from those rules.

Language - an indispensable means of communication between people. Communication is the process by which information is transmitted from a sender to a receiver in an attempt to create shared understanding. Communication between humans occurs via both spoken and written forms of language [1].

Human language has the properties of productivity, recursivity, and displacement, and relies entirely on social convention and learning. Its complex structure affords a much wider range of expressions than any known system of animal communication.

The purpose of the study is to examine the language as a system of signs and means of communication.

The urgency of the research. The problem of language is very important in our time. Languages, understood as the particular set of speech norms of a particular community, are also a part of the larger culture of the community that speak them. Humans use language as a way of signalling identity with one cultural group and difference from others. The organic definition of language sees language primarily as the mental faculty that allows humans to undertake linguistic behavior to learn languages and produce and understand utterances. The structuralist view of language sees language as a formal system of signs governed by grammatical rules of combination to communicate meaning. The functional theory of language sees language as a system of communication that enables humans to cooperate [2].

Material and methods. We used empirical like conducting experiments or examining large corpora of text or speech, the most important general logical and theoretical research methods: abstraction and generalization, analysis and synthesis, the unity of the logical and historical, etc.

Results and discussion. Languages, understood as the particular set of speech norms of a particular community, are also a part of the larger culture of the community that speaks them. Languages do not differ only in pronunciation, vocabulary, or grammar, but also through having different "cultures of speaking". Humans use language as a way of signalling identity with one cultural group and difference from others. Even among speakers of one language, several different ways of using the language exist, and each is used to signal affiliation with particular subgroups within a larger culture. Linguists and anthropologists, particularly sociolinguists, ethnolinguists, and linguistic anthropologists have specialized in studying how ways of speaking vary between speech communities.

Communication is the activity of conveying information through the exchange of ideas, feelings, intentions, attitudes, expectations, perceptions or commands, as by speech, non-verbal gestures, writings, behavior and possibly by other means such as electromagnetic, chemical or physical phenomena and smell. It is the meaningful exchange of information between two or more participants [3].

Communication requires a sender, a message, a medium and a recipient, although the receiver does not have to be present or aware of the sender's intent to communicate at the time of communication; thus communication can occur across vast distances in time and space. Communication requires that the communicating parties share an area of communicative commonality. The communication process is complete once the receiver understands the sender's message.

Effective verbal or spoken communication is dependent on a number of factors and cannot be fully isolated from other important interpersonal skills. Human spoken and pictorial languages can be described as a system of symbols and the grammars (rules) by which the symbols are manipulated. The word "language" also refers to common properties of languages. Language learning normally occurs most intensively during human childhood. Most of the thousands of human languages use patterns of sound. Languages seem to share certain properties although many of these include exceptions. There is no defined line between a language and a dialect. Constructed languages such as Esperanto, programming languages, and various mathematical formalisms are not necessarily restricted to the properties shared by human languages. Communication is the flow or exchange of information from one person to another or a group of people.

Conclusion. Human language is distinct and unique because there are specific features that distinguish human language from any other form of communication. It is unique from such forms as animal communication because it has linguistic rules that are followed in order to speak, it uses meaningful symbols, and we are continuously creating new ideas. There are some aspects of human language that are features of true language, meaning humans are the only ones with this ability, and is one of the key properties separating human language from animal language. For example, displacement and productivity are part of "true language", but although they are abilities found only in humans, not all languages have them.

All of us are social beings and are ready for communicating right from birth. The Language and Communication needs for explores the role of words, grammatical constructions and texts, and their influence on people’s ideas, social relations, actions and exchanges of information.

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HENRY VIII' S COURT AND LATER-CHIVALROUS COURTLY CULTURE

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Actual continuity: chivalrous court culture represents universal code of the behavioural aspects, mentally-cultural settings, examples of the morally-ethical canons.

Concern of this is the investigation of the Royal Household's representation and within the Courtly culture.

Methodological basis of this research was produced by the methods of new cultural history, using hender history's methods and prosopography. Correspondence of Henry VIII and his wifes either creations of the king and court poets T. Wyatt, J. Skelton are sources for this work.

Results and discussion: There was formed special political and cultural situation during the reigning of the Tudors. New dynasty needed having new mythology of reign [5, p. 1], that can legitimize their rights to the throne, that were really disputable without special complex of behavioural aspects and culture-symbolical merits. New kings wanted to present image of the ideal monarchs in comparison with the previous rulers. That is why the vision of the Richard III like the bloody Crouchback guilting in the death of the infant nephews (Edward IVs sons). On the contrary, this point of view is being presented now false, because it is not objective [5, p.2]. To create so necessary charisma of the Tudors' power new mythology of reign was produced with ideal images of monarchs [6, p. 120]. Both Henry VII and Henry VIII must be presented themselves like the examples of chivalrous rulers.

A lot of sources and researchers showed us very idealizing appearance of the young Henry VIII, his image was like beautiful fair-haired hero, that came from the pages of courtly roman [7, p. 35]. His attitude to his first wife, Catherine of Aragon, was up to ideals of that epoch. He was answered for Catherine's knight, like his Fair lady, creating poetry[l], fighting with her name in the tourneys [7, p. 42] and showing his loyalty. Henry VIII's poem named « Pastime With Good Company» was devoted to Catherine of Aragon: «Pastime with good company I love and shall unto I die; Grudge who list, but none deny, So God be pleased thus live will I» [1].

Henry VIII tried to encapsulate the image of knight like a defender of the faith as evidenced by his work, named «Defense of the Seven Sacraments» [1] (1521), perhaps had written under the charge of Thomas More.

Henry VIII's serving for a Fair lady was changed with the appearance Anne Boleyn in his life, because it was now full of new tone of the later-chivalrous courtly love: serving for Lady-fortress, so unachievable and desired whose winning is the most glorious for her's admirer. We can find here bright examples of knightly practices of the courtship, for example, love correspondence of the king was extremely wide at this period, and a lot of his works were devoted to Anne Boleyn. One of his letters to Anne dating 1527: « Darling, Though I have scant leisure, yet, remembering my promise, I thought it convenient to certify you briefly in what case our affairs stand» [2].

Henry VIII's chivalrous behavior was determined by his feeling towards his wives in different periods of his life. His relationships with the second queen, Jane Seymour, can not be characterized like very passionate, however, there were some gifts [7, p. 142].

His relations with Anne of Cleves can not be characterized like really chivalrous and courtly. Henry VIII was in love with the portrait and description giving by T. Cromwell so as his agents [8, p. 622]. That is why he was acted firstly as gallant knight - he tried to meet his bride with courtly manners and protect from enemies [8, p. 624]. But this passion died as soon as he had found out the discrepancy between bride's invented romantic image.

For a long time Henry VIII had been trying to act like a knight at his second last marriage with Catherine Howard, but his sickly condition got in the way for him [7, p. 225]. She was able to present the image of the real Fair lady to the elderly king, but she was too much romanticized, erected the pedestal, which she did not meet.

Monarch's disappointment in the fair sex was too clearly after that mismarriage. His last alliance with Catherine Parr was less courtly in comparison with other marriages, explaining by matured age both partners, that were unfit for gallant roles. In addition both of them had been searching another values at this marriage. Catherine was well-educated as against Henry VIII. She wrote some talented works [l], was trying to her support royal husband, doing her duties with dignity. Her letter to royal husband, dating July of 1544, was written when the king was fighting against France: « Although the distance of time. Account of days neither is long nor many of your majesty's absence, yet the want of your presence, so much desired and beloved by me, maketh me that I cannot quietly pleasure in anything until I hear from your majesty. The time, therefore, seemeth to me very long, with a great desire to know how your highness hath done since your departing hence, whose prosperity and health I prefer and desire more than mine own». It was more mental marriage than courtly game.

Conclusion. Henry VIII's matrimonial behavior was fitted to the ideals of the later-chivalrous courtly culture, that was stamped in the court's culture, uniting with the king very strong. Escort binding against king very tightly, both of them interrelation each other closely. Works of Thomas Malory and court poets of the XVI century, especially Thomas Wyatt(a lot of his poems are inscribed to Anne Boleyn) and John Skelton, which reflect that epoch very brightly.

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THE OLD-BELIEVERS IN RIGHT-WING MONARCHIST POLITICAL ORGANIZATIONS OF VITEBSK PROVINCE

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Right-wing monarchist political organizations stood out among of a great deal of political organizations – the early 20th century which during 1900 – 1914 had influence on politics in the Empire. There were many old-believers in the Northwest territory who gradually got involved in social and political life. The old-believers became an object of the political propaganda of different political force among which right-wing monarchist political organisations.

This point was considered by Belarusian historians, but mainly they viewed the old-believers' involvement in spiritual life. They studied the old-believers' involvement in social and political life partially. And it is, certainly, enhance the relevance of the article.

Object: to consider the old-believers' involvement in in social and political life in Vitebsk Province and interaction with right-wing monarchist political organizations.

Material and methods. Material: archival data, memoir sources, documents of the organizations, scientific articles. Methods: historical-comparative, historical-systematic, quantitative.

Results and discussion. Being a part of the Russian Empire and multinational region, Northwest territory (Belarus) became an arena of new political form at the beginning of the last century. Vitebsk Province became concentration not only revolutionary and liberal parties, but also right-wing monarchist political supporters.

The old-believers began to sustain right-wing monarchist political organizations in Vitebsk Province quite early, in 1903 they started rapprochement with the monarchists. It was sustained by Rimsky-Korsakov, Aleksandr Aleksandrovich. Being Vitebsk provincial nobility leader, he supported the old-believers and orthodox rapprochement, thinking that old-believers can be reliable ally of right-wings. Being a right-wing monarchist , he claimed that revolutionary agitation comes from the aliens [1]. It has been proved by Vitebsk governor B.B. Gershau-Flotov, who noted " awakening and development of national consciousness among the Russian provincial population on the one hand and on the other – unceasing the Jewish youth revolutionary create such situation in which there is always possibility to expect the emergence of more or less large ethnic riots" [2].

The issue was complicated because Vitebsk became the eastern city of Jewish settlement. According to census in the province there were 53.0% of Belarusians, 17.7% of Letts, 13.3% of Great Russians, 11.7% of Jewish, 3.4% of Poles.

There were 83022 of old-believers in the province. The leader of the old-believers in Vitebsk Province was A. Pimenov. He was a leader of the old-believers in Dvinsk county. He was not a right-wing monarchist political organizations participant, but in his opinion the rapprochement with right-wing monarchist political organisations was an important step.

At the beginning of the revolution most of the old-believers were opponents of it. The rapprochement took place also among the old-believers in Vitebsk Province. For instance, the old-believers group of Dvinsk county in January 22, 1907 requested vitebsk governor to organize Dvinsk Old Believers fraternity [3, p. 148]. By the fact that some of counties had martial war during the revolution among them – Dvinsk.

The old-believers together with right-wing organisations – Party of Peaceful Renovation, Russian Outlying Union – began to form fraternity. A lot of old-believers became right0-wing monarchist political organisations.

The Statute of Dvinsk Old Believers fraternity defended Russian population against sedition. It was registered in the statute of Dvinsk Old Believers fraternity. The main objects of the statute were:

1) Developing of national and civil consciousness, uplifting morality through printing, oral talks, national public reading etc;

2) Improving of economic situation of Old believer population by means of formation medical institutions, juridical and mutual support, charity poor, arrangement of almshouses, cheap canteens, workhouses and dosshouses, shelters and others [3, p. 148].

There was a pogrom issue in the province. P.G. Kurlov told that "assumption of pogrom as Jewish, as estates. I will blame on the head of the police who turned to be inactive for the adoption of preventive measures" [2].

The old-believers of Vitebsk Province were interested in right-wing monarchist political party as a potential ally in the fight against revolutionary-minded aliens, by which Jewish, Letts and Poles were figured out. "Belarusian society" began stirring activity which took as a basis the idea of westrussism. The participants of this activity were; Russians and Belarusians most of them were old-believers. Russian evenings were held on the basis of this community [4, p. 138].

The old-believers didn't limit only cultural and social activity. For example, the old-believers of the province took part in delegation of an old-believer, a leader of Gomel department Party of Peaceful Renovation Davydova Akima Charlampovicha at the All-Russian Congress in Kiev in October 1-7, 1906. It was due to the fact that there was general consolidation of the old-believers, but it did not turn to one party as it happened, for instance, conservative Catholics. The old-believers united in fraternity, which had sociopolitical character. It happened same in Vitebsk Province. The peak of political activity in Vitebsk right-wing monarchist political organisations comes during the first Russian revolution 1905-1907 [4, p. 137]. The old-believers and the right-wing monarchists have close interaction in this period, it is caused by appearing the old believer fraternities in Dvinsk county, Rezhitskom and in Vitebsk. But after the end of revolution 1905-1907 the old-believers' activity decreased in political life in Vitebsk Province and their participation increased in spiritual life.

Conclusion. The old-believers of Vitebsk Province cooperated closely with right-wing monarchist political organisations, had significant influence before and during the first Russian revolution, but later lost their potential and gradually moved to spiritual-educational activity in the Province.

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THE AMBULANCE SERVICE IN BELARUS IN THE BEGINNING OF XX-TH CENTURY: FORMATION PROBLEMS

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Many major opening and shifts in mankind history happened because of awful tragedies and accidents. That way the occurrence of Ambulance Service (AS) was a consequence with a fire of the Viennese opera theatre of 1881 in which result 479 persons were lost. Soon after the tradegy it`s witness, a local surgeon Yaroslav Mundi has begun the creation of the Viennese Voluntary Saving Society which gave start to the Ambulance Service station. In Belarus AShas arisen later, but like Viennese, also on the private beginnings.

The purpose: to study history of creation and development of ambulance service in Belarus on materials of sources.

Materials and methods: we study materials of charters of the first AS societies, statistical materials, contemporary records.

Results of research. By the end of XIX century the territory of Belarus was the part of Russian Empire, the basic loading on population health services was assigned to Zemstwo (elective district council in pre-revolutionary Russia) created in 60-th years of a XIX-th century, and medical aid took away more than 1/3 means of local budgets. The first Ambulance Service station has appeared in its territory in 1897 in Warsaw, after that in the cities of Lodzes, Vilno, Riga, Kiev, Odessa [1].

Hardly after AS station began to open in Kharkov, Petersburg and Moscow. However, in territory of Belarus zemstvo have been created only in 1911, accordingly the AS service was entered later. For the first time the question of AS creation in Minsk was risen by the medical inspector of the Minsk province S.Urvantsev in 1909. On October, 7th, 1910 the charter «About night watches of doctors» has been confirmed. Service of patients was paid, the cost of one call made to 1 rouble. There were horse carriages, a stretcher, medical products and a dressing at each station. First AS crews used basically horse draught, therefore the name "carriage" was fixed to them and [1]. It is important to notice that already in the beginning of belarussian AS there was a structure of a brigade which remains invariable and today: the doctor, the medical assistant, the attendant. The right of calling the AS had the officials only, accidents were served free of charge. The doctors` night watch service had been executed 650 calls only for the period of 1911 [2, p.103].

On May, 20th, 1911 the Minsk Sister of Mercy Society has bought the first AS car in Austria, and on May, 24th, 1911 it has made the first departure.

Employees of the new organised service was united in their own societies. So in 1912 the society of the AS having for an object «has been created to deliver free of charge Ambulance Service in the accidents, able to happen on Vilno city streets, in all public places, at factories, factories, the railways» [2, c.3]. By results of the analysis of work of a society it is necessary to allocate following directions of its activity:

1. The AS stations created in different places of a city was equipped with the medical equipment on which it was planned to organise day and night watches of medical workers. Thus, the round-the-clockness became feature of AS work right after its organisation [3, p. 3].

2. Maintenance of the above-named stations with specialised "waggons" (transports) with a stretcher and other equipment [3, p.4].

The AS society existed on membership dues and donations, board consisted of 12 persons, the management was carried out by the chairman, the secretary, the treasurer, the inspector of stations and managing stations [3, p. 9, 10]. Also in a AS society absolute equality of both males, that underlines its democratic character, also AS society has been proclaimed the professionalism.

AS development in Belarus has been interrupted by the First World War and german occupation of Belarus (1915-1918). Therefore occurrence of AS stations in other regions of Belarus had happened later, already after an establishment of the Soviet power [3].

In Vitebsk the AS service has been based on November, 7th, 1922 under the project of doctor Livshits about the AS organisation. Thus, to the fifth anniversary of October Revolution, at hospital of

Kalinin the AS station has been opened. There were 5 doctors, 3 operators, 3 drivers and 1 hospital attendant in Vitebsk AS station in 1925-1926.

In the Gomel area the service of the first help has appeared on December, 22nd, 1924. In district cities of province for first-aid treatment there were points of night watch of doctors (in Klintsy and Novozybkove, as more industrial cities) [4].

In Mogilyov the AS station has been opened in 1926. The Emergency help was appeared in case of accidents point of AS in city polyclinic № 1 where one medical assistant was on duty. AS had the horse carriage and telecommunication at the order.

Public health care in the Western Belarus which after signing of the Riga Peace treaty in 1921became a part of Poland, was in embryo. In 1930 in east districts where Belorussians lived, on 10 thousand inhabitants it was needed 2 doctors and 8,8 hospital cots, in the Poland these indicators were considerably above. Thus medical aid to the population was too expensive for the majority of the population of the Western Belarus. The AS in Grodno and Brest had started after the World War II ending.

Conclusions. AS development which has begun in the first decade of XX century in Belarus has been directly connected with introduction of local elective council which appeared very slowly. Therefore the initiative proceeded from medical workers who created AS societies. This process has been interrupted by the First World War and german occupation of the Belarus (1915-1918). Therefore the occurrence of AS stations in other regions of Belarus has happened later, already after an establishment of the Soviet Government. AS development in Western Belarus, former part of Poland, actually didn`t happened, until inclusion of these territories in BSSR structure.

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THE SOCIAL PHILOSOPHICAL PROBLEMS OF MODERN SOCIETY

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The rapid development of modern society creates some new problems. Which require philosophical analysis. Modern philosophy is faced with such questions formulated which was previously impossible. And this is due to the relevance of the topic. The aim of our report is to clarify the most pressing issues for the modern social philosophy.

Material and methods. The material of research trends in the development of modern society in a post-industrial world. The study was conducted using the methods of comparative analysis, the unity of the historical and logical, systematic approach.

Results and discussion. At the present time there is a new term: modernity Modernity is a term of art used in the humanities and social sciences to designate both a historical period (the modern era), as well as the ensemble of particular socio-cultural norms, attitudes and practices that arose in post-medieval Europe and have developed since, in various ways and at various times, around the world. While it includes a wide range of interrelated historical processes and cultural phenomena (from fashion to modern warfare), it can also refer to the subjective or existential experience of the conditions they produce, and their ongoing impact on human culture, institutions, and politics.

As an analytical concept and normative ideal, modernity is closely linked to the ethos of philosophical and aesthetic modernism; political and intellectual currents that intersect with the Enlightenment; and subsequent developments as diverse as Marxism, existentialism, modern art and the formal establishment of social science. It also encompasses the social relations associated with the rise of capitalism, and shifts in attitudes associated with secularisation and post-industrial life [1, c.112].

Now in society we can see people are getting more and more selfish day by day. They are not concerned about others problem and worries. Joint families have been converted into nuclear families. Love harmony which was prevailing among the people earlier seems to have disappeared from the society. Lack of respect for elders and for our old traditions among the Children is one of the biggest problem of our society. In the name of modernism they have started to forget their old traditions and culture of the society. In our modern society women are getting more career oriented. This is a very big problem for the society. And it's one of the problems for the study of social philosophy.

Social philosophy considers the above problems of the world community. It examines and analyzes and other topical problems of modern society. However, the actual "social and philosophical challenges" should be distinguished from the interpretation of the social philosophy of any international and global challenges – globalization, violence, terrorism, loss of identity, religious fundamentalism, feminization, etc. Obviously, these problems are a challenge to the world community and all of humanity, not just a philosophy, and even more so only one of its divisions - social philosophy. When it comes to the "challenge", it is always assumed that there is a specific object or entity against whom the "challenge".

A.M. Orekhov says that difference "challenge" from the other problems facing the social philosophy is that if social philosophy will not respond to their own "social and philosophical challenges" that it threatens the fundamental objective crisis, due to which it may cease to exist at all . What, then, can be considered as a fundamental threat to the social philosophy in the modern era of its existence? In total, we have identified four such fundamental threats: 1) reductionism in its various forms, and, above all, kulturologizm, psychology and sociology as three of the most dangerous forms of reductionism; 2) the dogmatism and traditionalism - primarily stemming from the so-called "Russian idea"; 3) in the form of relativism "skepticism" and especially its postmodern variant; 4) anti-scientism and irrationalism in its various versions - including in relation to the problem of justification of social and philosophical truth [2, c.255-264]. The above international and global problems can not possibly have as their object or a social philosophy - as an entity - only social philosophy.

Conclusion. New values for the new century, creating new areas of social philosophy of research and analysis. The accelerated development of science and technology makes to ask questions about the permissible relationship of man and technology. Pressing question about the impact of information technology on social relations. However, all these problems issluduyutsya and other sciences. Actual as a private problem of social philosophy is to prevent sociologism.

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THE INFLUENCE OF THE ZEMSKAYA ECONOMIC SYSTEM ON THE DEVELOPMENT OF VETERINARY EDUCATION IN BELARUS IN THE SECOND HALF OF THE XIX - EARLY XX CENTURY

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Currently the process of reforming the system of veterinary education of the Republic of Belarus is taking place. When determining the need to consider ways of reforming, the existing traditions in training of veterinary staff shouldbe taken into account. In this regard, investigating of formation of the system of veterinary education in historical terms becomes of particular relevance.

The purpose of the research is to determine the features of the influence of zemskaya economic system on the development of veterinary education in Belarus in the second half of the XIX - early XX century.

Material and methods. The research is based on materials of the National Archive of Belarus (e.g. «The Case of Teaching Peasant Boys the Veterinary Art», «Case of Admission and Dismissal of Veterinary Doctors and Veterinary Assistants at the Mogilev Province»), other authentic materials; works of researchers in this field.

The work is implemented with the use of the complex of methods applied in the historical and pedagogical research, including analysis and collation of archives data, review of literature sources, studies and generalization of the advanced pedagogical practice, oral scientific communication.

Results and discussion. The introduction of zemskaya economic system has significantly contributed to the development of veterinary education in Belarus in the second half of the XIX century.

In 1864 the government issued the "Regulations on the Provincial and District Zemstva Institutions" that marked the beginning of territorial self-government. By 1911 local self-government has extended to the Vitebsk, Mogilev and Minsk provinces and functioned until 1917 [2, p. 1].

The development of veterinary medicine inspired the Ministry of Internal Affairs to administer the rules necessary for opening of zemstvo institutions, which also reflected issues concerning veterinary education; as well as "The Temporary Regulations Concerning the Issue by Zemstvo Institutions the Obligatory Statements on Measures of Prevention and Elimination of Epidemic and Infectious Diseases " and the law "On Slaughter of Obviously Sick and Rinderpest Suspected Cattle " in 1879.

Since the above mentioned Law granted local zemstva the right to charge fees to the owners of cattle, it allowed zemstva to concentrate a significant stock of money at their disposal and use these funds to create a stable veterinary service. Monetary means were used for training veterinarians, for development and implementation of effective measures against epizootic diseases; for the development of the network of Zemskie veterinary institutions: hospitals, stations, local sites, veterinary bacteriology stations, where diagnostic tests were provided for various infectious and parasitic diseases of domestic animals as well as the manufacture of veterinary biologicals; also publications of "Information on Veterinary and Sanitary Conditions in Province", "Epizootic bulletins" brochures on Livestock Farming , Veterinary and Animal Science appeared [3, p. 52].

The most important issues relating to animal husbandry, veterinary medicine and veterinary education were discussed at the meetings of the provincial zemstvo societies of veterinarians, as well at All-Russian Congresses of veterinarians.

Zemsky veterinary specialists were engaged in propaganda of scientific knowledge and best practices in the field of animal health, hygiene, sanitation, livestock directly in rural areas [1, p. 2].

For the first time through the network of rural veterinary medicine points and veterinary stations, zemskie veterinarians provided a free of charge veterinary assistance for the livestock belonging to peasants. This was a progressive form of veterinary care, which did not exist in other countries during this historical period.

Conclusion. Zemsky veterinary specialists, working in difficult socio-economic conditions made a significant contribution to the development of animal husbandry, veterinary medicine, veterinary education and education in the country. Zemsky veterinary sites and points were the loci of propaganda of scientific knowledge and advanced practice in the field of disease prevention, zoohygiene and veterinary sanitation. Zemskaya veterinary medicine was the most progressive form of the organization of veterinary service in the second half of the XIX - early XX century.

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«ASSEMBLY OF FINNISH RESOLUTIONS» AS A HISTORICAL SOURCE TO DETERMINE THE DEGREE OF CHANGE OF THE STATUS OF FINLAND IN THE RUSSIAN EMPIRE (1809-1859)

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The Grand Duchy of Finland became part of the Russian Empire after the Russo-Swedish War of 1808-1809. From that moment began, according to Finnish historians, the emergence of Finland as a state and the Finns as a separate nation. The first goal is to trace the developments in the transformation of the constitutional and legal status of Finland within the Russian Empire. Another goal is to find the key points that lead to success or difficulties on the road to becoming an independent state, and the role of Russia in the history of the individual state.

Material and methods. The main material of this study is based on the “Assembly of Finnish Resolutions” which is presented in three volumes published in the biennium 1902-1904 [1, 2, 3.]. A broad methodological framework was applied for this study (quantitative method, classification, deduction, analysis, analogy etc.), which allowed to study the problem in depth and to reach certain results.

Results and discussed. Finland was part of the Russian Empire for more than a century. During this period a huge number of legal acts and legal forces were issued in the form of imperial institutions and local authorities [4, p. 2].

One of the features of legislative acts issued in relation to Finland was the fact that they were published in the Digest of Decisions of the Grand Duchy of Finland. This means they were not included in the Complete Collection of Laws of the Russian Empire, in which regulations on the Grand Duchy of Finland were systematically published only after 1899. Regulations relating to the period of 1809-1859 were published in the “Assembly of Finnish Resolutions,” which was the result of the work of the Commission of systematization of laws of Finland, led by N.D. Sergeevsky.

Thus, it was possible to determine the degree of transformation of the status of Finland as part of the Russian Empire (1808-1855), based on the source that has been specially created for gathering data on Finnish laws and their classification as a whole.

The gathering begins with the decisions taken during the reign of Alexander I. Only during the reign of the emperor, not including additions, 37 statutes were published [1, p.630]. The highest intensity occurred in 1812 and 1819. In 1809 the Rules of principality were approved; concerning the Government Council and the monetary system; the emblem of the Grand Duchy of Finland was approved. In 1806 the decision of its proceedings was introduced; the renaming of the Imperial Government of the Council of the Imperial Finnish Senate, and so on, in addition to the regulations which helped to streamline management and were less significant regulations.

When analyzing the content of the “Assembly Resolutions” during the period of the reign of Alexander I, we can determine that 44% of all bills fall on management, while the sphere of political rights and freedoms only accounts for 4%. There is no clear structure in the transformation of the system.

Thus, it is possible to identify the relatively systematic continuity in the relationship of the Duchy of Finland and the emperor. There was no clear system of the considered issues; many of the problems were very private. Nevertheless, the main trends in the transformation of Finland are most apparent during this period. The initial attachment of the Duchy is the definition of the rights of the Finnish part of Russia (March 15, 1809. Manifesto on the approval of the rights of the Grand Duchy of Finland. August 6, 1809 the establishment of the Government of the Council of the Grand Duchy of Finland). Radical or forced changes have been conducted. Politics were largely neutral.

When Emperor Nicholas I ascended to the throne, he sent all his main forces to strengthen the punitive apparatus of the monarchy and to conserve the political system of autocracy of the state [5, p. 27]. The entire reign of Nicholas I was a time of reaction for Finland, and bureaucracy increased. The Council of the Duchy of Finland never gathered. Finland followed with caution.

Because of this occurrence there was a revival of Russian Empire policies in respect of Finland. A clear increase of in legislative proceedings could be seen. In the year 1826 noticeable jumps in proceedings could already be seen. In just one year many changes were made, all of them more drastic than ever before [2, p.603]. The main directions of these proceedings were customs policies and legal proceedings.

The number of additions immeasurably increased and within five years 39 of them were accepted. The content of the additions was mostly private. Some examples of additions are: the sales of wine and beer, the acceptance of experienced midwives in parishes and the prohibition of providing shelter to vagrants and people without passports.

The third tome covers the period from 1850 to the end of the reign of Nicholas I. Just like previous years, no major changes were made in Finland’s management. Based on the “Assembly of Resolutions” it is evident that this sector accounts for only 12%. The main focus at this time was on economic reforms - 35%, although many of them had a private character. Some more positive tendencies were increased attention to political rights and freedoms in Finland - 14%. [3, p. 683]

The time of Alexander II was a period of rapid progression in all sectors. The focus of the educational sphere increased to 28%, and was now on par with transformations made in the social sphere. Interestingly, the scope of control rose to 24% and the sphere of political rights and freedoms to 25%. There is only a small gap between these two spheres, but the growth of trends in the legal status of Finland kept increasing, and it was noticeable even before the period of major reforms by Alexander II.

Conclusion. So what is the degree of transformation of the status of Finland in the Russian Empire (1809-1859). It is clear that the control system has been largely resolved, and the status of Finland was secured. Emperors did not seek to expand political rights and freedoms of Finland. Its status was often strengthened with conservative positions. Nevertheless, more and more attention was paid to political rights and freedom during this period. All of this shows the importance of this matter for Finland, as the country did not reconcile with the existing situation. During the reign of Alexander II the independence of Finland was already visibly becoming stronger.

This conclusion is based on the "Assembly of Resolutions of Finland, which: shows structures of legislation issued on various activities of the State and the changes of intensity of their adoption in different years. It helps to understand the immediate value of these transformations for a separate Duchy, which strives for independence.

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PUBLIC MOODS IN THE KINGDON OF POLAND IN 1860-1863

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The level of the socioeconomic consequences of the reforms, that were carried out during the 1860s - early 1880s in the Russian Empire, requires for detailed elaboration a number of significant trend, geographically and in the context of content of reforms. One of the significant trends is clarification of the public mood that had been changed over this period, helping us to understand the reason of events. The aim of the proceedings is to determine the trends characteristic of the formation of public opinion in the Kingdom of Poland in the early 1860s.

Material and methods. Study is based on reports of compartment Third Section of His Imperial Majesty's Own Chancellery, the texts of which are kept in the State Archive of the Russian Federation. In 2006, employees of the archive have prepared complete edition of these documents. [1]

The III section's reports about situation in the Empire and abroad were presented to the king from 1827 to 1869, its goal was to assist the monarch in the elucidation of the peculiarities of life of its citizens. They were given a broad picture of alignment of social and political forces that reflect the public reaction to the activities of the government, trace different tendencies in the public opinion. The Third Section's reports allow us to understand the trends of public moods in the period just before the uprising, what forces influenced public course in the Kingdom of Poland, the actions were taken by the Government to deal with the mood of protest.

The article presents the period of 1860-1863, culminating with the uprising on the territories of the Kingdom of Poland in 1863. Purpose and objectives of research could not be accomplished without the use of methods of historical analysis - comparative historical and problematic/chronological.

Results and discussion. First of all, it is worth noting that in the early 1860s the situation in Europe was quite restless. The most intense excitement of minds was in Hungary, Montenegro, Poland, the Danubian principalities. Proof of this, is the fact of delivery in these areas military ordnance, concentration a significant number of Hungarian and Polish immigrants in Iasi. The command of the legions was ready to take on Ludwig Miroslavski. European politicians saw in the events of 1860 attributes of merger Italian, Hungarian and Polish issues, noting the character's intentions as a revolutionary and democratic. [1; p.504]

The total number of Polish immigrants that lived abroad after 1832 and 1848 was approximately 1,500 people, the greatest influence had representatives of the uprising of 1830-1831.

Most of them lived in France, and in (approximately 300 in London and 600-700 in France). Almost all the British emigrants belonged to the Democratic Party: Zabitski (editor of "Polish democracy"), and Miroslavski Vysotski, Zhulchevski, Verzhinski, Klachko and Vrontnovski. In France, the most influential among the emigration were Polish aristocrats princes Czartoryski, Zamoyski, Leduhovski, Rybinski, Barzikovski who enjoyed the favor of Prince Napoleon. The Head of the Democratic Party in Paris were Miroslavski and Vysotski.

Opinion of emigration can be seen in the Czartoryski speech delivered in Paris November 29, 1860, and dedicated to the 30th anniversary of the uprising. He noted that "the oppressors of Poland were weakened and blinded ... Among the Poles, on the contrary, is happy progress and consciousness of past mistakes, protects from resuming the add ..." [1; p.507]. In the spirit of this speech were sent "instructions" in the Kingdom of Poland: do nothing for the changing fate of the peasants, as in the present situation the peasants would appeal against the rebellious nobles. Thus nobles should inspire the peasants that they have lost the king granted privileges.

As shown the reports of the Third Section, Poles in the Polish Kingdom sympathized with the events in Italy, Hungary, but expecting a favorable change in the situation. However, it should be noted the fact that there was an activity "for development of domestic popular forces" for example, was an appeal to attend church more often, to abstain from alcohol, to improve agriculture. In 1859 was created the "Agricultural Society", the organization of which had a significant scale. Such formations were in Poznan and Galicia, too. After some months the “Agricultural Society” began to claim a special political role, due to that fact the government had to limit its activity by closing its provincial assemblies, retained only one - in Warsaw.

The emigre press penetrated in Poland, for example, " Wiadomości Polskie " which urged not to take hostile action against the government, not to hurt the common cause. It supported the patriotism of the Poles. But the magazine democratic direction " Przegląd Rzeczy Polskich " encouraged mainly Polish youth to revolt.

There had been sorts of attempts to provoke demonstrations and riots. In October 1860 in Warsaw, was arrested several juveniles real high school students and art school, which included the names Filippovich, Trombchinski, Klechinski and others, for organizing the riots. Instructions were sent to them from Paris transit through Poznan. These riots were calls not to take part in the celebration dedicated to the arrival of the Three Emperors in Warsaw. Namiestnik of the Kingdom of Poland Mikhail Gorchakov argued that there was a pernicious student organization expanded its influence in all areas of the former Polish territory. Its purpose, according to the namiestnik, was "pointing to right-thinking people fear." He also saw the main danger in rapprochement process between revolutionary and lower class [1; p.517].

The political situation in the Kingdom of Poland in 1861 seemed quite depressing, according to the Russian authorities. A lot of protests and demonstrations, the government's fight against the revolutionary mood, even against the clergy, which wielded secret influence, encouraging the people to rebellion. The authority, in fact, lost all means to resolve the situation peacefully, because they couldn’t count neither the nobles nor officials, nor the clergy. All this led to the imposing martial law of October 2, 1861, which resulted in subjection of the rebels.

In the Third Section’s reports noted that the Poles perceive the "silence" of the government as a sign of weakness [1; p.542]. A very important fact is that farmers remained loyal to the government and were not influenced by the nobility. The others classes of Polish society were imbued with idea of restoration of independence. The report states, that the emigration had put his hand to that ideas, for example, there were calls for a struggle for independence in the emigre press. However, it should be noted that there wasn’t found any confirmation of the presence of a conspiratorial organization on the territory of the Kingdom of Poland

Reports in 1862 contained interesting information about the state of public sentiments. The Russian government was trying to reduce tensions in the Kingdom of Poland by reforms, but there continued terracts, religious and political demonstrations, there were organizations of recruitment in rebel army. There was also evidence to establish a "revolutionary areopagus", which was called "Warsaw Central People's Committee." In the report it was evaluated as "organizing vast conspiracy" [1; p.580]. The number of participants was approximately 7,000 people. It consisted of artisans, factory workers, the urban population. All they were required by oath at the first sign bear arms against the Russian government and the Russian troops. Curious emperor mark on the original document: "Everyone knew and did nothing" [1; p.580]. The most problematic province, according to the report, were Warsaw, Radom, Lublin, Plock governates. It is also worth noting that the clergy, landless nobles, "Warsaw Central People's Committee" aligned oneself. Political independence showed independent landlords. Kingdom of Poland in a report called "painful political body that is torn by the action of the revolutionary poison" [1; p.580].

In the first months of 1863, the government, despite the growing unrest in the Kingdom of Poland, showed certain passivity. Only after the attempt on Feodor Berg, who took office governor in the Kingdom of Poland, began militant actions.

However, describing the situation in the Kingdom of Poland the report's authors noted that the uprising was supported emigration and diplomats of European countries, that's why it was not possible to suppress quickly. Nevertheless, were said that if at the beginning of the uprising, it could count on the support from the outside, then later in the same year, the situation had changed, that there is no significant "amassments" revolutionary elements, only small gang[1; p.627].

Noteworthy fact that in reports was a comparison of the uprising, with the uprising of 1830-1831. But for authors of the report uprising of 1861 year called for a clerical-democratic, and thirty years ago - the military and the gentry. There was immorality population enthusiastic by revolutionary fanaticism. But rural population, according to the compilers of the report, was "living force of the Polish people," which should begin its revival [1; p.627].

Conclusion. Unfortunately, there are no reports for 1864, but even without them, it is obvious that the political mood in Polish society kept their inconsistency. On the one hand, the support of the Russian authorities from the rural population, and on the other, its complete absence from the rest of the population. The continued efforts of emigration, the revolutionary elements could not unite all Poles. In the end, the uprising was crushed.

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METHODOLOGY RESEARCHES HISTORY OF MILITARY MEDICINE

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Relevance of the theme is determined by a significant intensification of work on the study and development problems of the history of military medicine. The value of research in this area at the present stage of scientific development is due to fundamental qualitative changes in the means of warfare, caused a significant restructuring of the organizational structure of the army, forms and ways of warfare which may lead to a new pathology wartime and fundamental changes in attitudes to health maintenance organizations troops. Therefore there is a need for careful consideration of past experience knowledge that equips the history of military medicine. It provides rich material for theoretical generalizations and practical implications of disclosure regularities and trends in the development of the principles of medical support, and ways to predict the future direction of military medical science.

The aim of research is attempt to analyze some of the issues of methodology, which show how to approach the study of the connections and relations in the history of military medicine, as they understand, evaluate, and so on.

Material and methods. Methodology of the history of military medicine is composed of three inseparable and, at the same time, independent parts: general, special and concrete [2, p.24]. Common part is the philosophical foundation. The special part of the fundamental provisions of medical science is including: the history of military medicine, military science, as well as various military-medical disciplines that are used to explain, events and facts, relating to the history of military medicine. Third part, specific, mainly comprises special methods and techniques, use of which is due to the specificity of the subject research [1, p.115].

Results and discussion. Philosophical methods serve as means of entry into essence of military historical and medical events, contribute more clear focus on what the researcher should first pay attention to the direction in which to use the entire arsenal of knowledge to uncover laws of development of processes and phenomena in the history of military medicine. Thus, exploring the state of the medical service and the efficiency of medical support in a specific military campaign or war, it is necessary to proceed from the determining influence of the complex objective factors leading place among which owns the character of the political system society, the level of economic development, science and technology [2, p. 24]. At the same time accounted the degree of direct influence on the organization of health services and medical support principles of development of military affairs - to improve the means of warfare, the development of military theory and practice.

To scientific methods of research can be referred historical and logical [2, p.24]. The essence of the historical method is to objectively evaluate the occurrence of a phenomenon in the history and dynamics of its development. So the study of systems of medical evacuation support for the troops necessary to consistently treat stage of their development in the direction from the previous to the next. This approach assumes that compulsory registration of public and social factors, health status, and military medicine for which was developed and used in practice this or that system of treatment and evacuation of the wounded and sick.

Logical method assumes use of several techniques: analysis and synthesis, comparison and analogy, abstraction and generalization, etc. The scope and nature of their use are determined by the specific goals and objectives of the study. One of the basic logical techniques should be considered as a comparison. Its essence is to identify similarities and differences between events and phenomena by comparing them. This method should be used not only to establish the above characteristics, but also as a method or evidence substantiate the conclusion [2, p.25].

The considered methods are closely related to the method of abstraction - mental focusing on one or another signs of the object selected in the analysis. It should emphasize the nature of the unity of the historical and logical methods, compliance with which is mandatory for both the research process and to present its results.

Extremely high today role of the experimental method. Methods such research may be different: conducting research command post and special tactical military medical exercise, a synthesis of operational, logistical or military medical exercise on maps [1, p.134].

For today are promising mathematical methods. Without affecting the traditional methods used by the military medical statistics, mention should be made of the possibilities of constructing mathematical models capable serve as a adequate basis for solving certain problems in the history of military medicine. Mathematical modeling will allow to successfully solve a number of issues related to the assessment of value for money collection and removal of the wounded from the battlefield, surgical forces to ensure skilled care, various types of vehicles involved for the evacuation of the wounded and sick of the battles and operations [2, p.25].

Conclusion. In summary, the following main specific methods of research applied in study of the history of military medicine:

– Historical method – generalization of experience of organizing medical support in the past war by learning and critical analysis of the literature, archival documents and personal combat experience;

– Experimental method – the study of the organizational and tactical questions of medical support and methods of application of forces and assets of the medical service in artificial conditions (models), as close to the real situation of medical services;

– Mathematical methods that are used along with other methods, and accompany them wherever necessary to obtain quantitative estimates of the activity of the medical service.

Thus, it should be emphasized that these methods of learning are necessary methodological basis for the study of military historical and medical facts and events at all stages of the study. However, success in this effort will largely depend on the rational combination of these methods and the principle of their interrelation.

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REFORMING THE INTERNATIONAI MONETARY SYSTEM IN THE WAKE OF THE GLOBAL CRISIS

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Today’s world economy is still suffering the world financial crisis. The world economy has just been through a severe recession marked by financial turmoil, large-scale destruction of wealth, and declines in industrial production and global trade. Workers are paying the heaviest cost for a crisis far beyond their control. The impact of the crisis will go further than job and income losses, causing the incidence of informal work and working poverty to rise. Young people, migrant and women workers are the most vulnerable to the current downturn and are all faced with considerable difficulties in integrating in today’s labour market. This trend stands to be exacerbated by the global crisis and if viable solutions are not found, personal development and future employment prospects are threatened for millions of young people.

Material and methods. Developing countries could be encouraged to diversify their economic base, spreading their reliance on more than a few export sources. For example, it makes sense for small and landlocked countries to stimulate knowledge – intensive sectors, which have fared better during the current crisis, away from reliance on manu-facturing and concentrated commodity exports which face stiffer competition, extreme volatility and large transport cost challenges. Taken together, these measures would provide a new global compact for crisis – resilient growth, providing a better response to today's global economic meltdown and putting developing countries in a stronger position to address unknown challenges in the future. The current global crisis has created an opportunity to change the current global economic and political order. Need to address global imbalances by creating a new global currency, should be widely accepted at international level.

Governments throughout the world are still trying to develop anti-crisis programs. Anti-crisis program is a complex set of necessary measures which provides a significant decrease of negative consequences from realized financial risks during an economic recession [1]. The anti-crisis program can be performed at different levels: national level, local level and global level.

The main tasks of the anti-crisis program are the following: financial crisis prediction, adequate and correct preparation to the crisis, providing the protection from negative financial crisis factors, direct support of the banking activity during financial crisis period, substantial reducing of negative consequences caused by financial crisis, using different factors and consequences of financial crisis for banking system development, liquidity support.

For too long the debate over the universal method of creating anti-crisis program has been held by bankers and Finance Ministry officials. But still there is no universal method of creating anti-crisis program. Some progress has been made towards the goal of effective banking regulation and some fundamental factors of banking system stability have been defined: development of risk management systems in banks, methods of system risk estimation, development of macroprudential supervision system, derivative system regulation.

Results and discussion. A spectrum of mechanisms in risk management is available to identify potential risks, to estimate these risks and to develop necessary measures to prevent the realization of bad scenario or to decrease the negative impact of realized financial risks. The existing risk management system doesn’t cover the connection between volatility and liquidity on the market. Drawbacks of Value-at-Risk tool necessitate using wider range of scenario modeling risk indicators during the system risk estimation. Also, it is very important to point out that banks are aimed at the protection of their own personal interests only, but not at the protection of the whole financial sector in general.

As national economies are becoming more closely integrated with each other, more and more big financial institutions are appearing at the global level. Bankruptcy of any big financial institution will cause large negative consequences and severe damage to the national economies. That’s why the governments will have to provide financial support to these big financial institutions which may cause following a policy of high risk by these big financial institutions.

In this situation in order to prevent such a risky behavior of big financial institutions the governments should control their financial activity. The governments put forward a range of measures designed to establish better regulation of international financial institutions during the period of financial crisis. But today this regulation is very weak to prevent global recession and to cope with any deep financial crisis. The governments should develop an entire macroprudential policy instead of existing partial macroprudential regulations.

Traditionally, central banks set macroprudential regulations (required reserves, liquidity, deposits and actives diversity, capital adequacy, protection from insiders etc.) and control them at the level of financial institutions. The role of macroprudential regulation and supervision in developed countries is not quite significant: it is the leverage control of a specific bank that is the only regulation which exists today. Besides fiscal policy and monetary policy the governments should develop macroprudential policy of financial stability in order to stabilize banking systems.

Conclusion. In conclusion, we note that the main regulators which are necessary for improving banking systems stability are the following: mortgage regulator, currency regulator, reserve regulator, short-term foreign investment regulator, liquidity regulator, capitalization regulator, retail banking service regulator, external (foreign) debt regulator.

However, some concerns can be noted that are likely to face bankers and financial institutions. Derivative regulation system should have two main distinctions from the existing traditional system: firstly, the system of applied standards and rules should be dynamic and diversified according to the group of financial institutions; secondly, specific rates of applied standards should be flexible and floating and depend on the situation in the financial sphere and in economy in general. Moreover, this control system should touch upon not only the banks, but all the financial institutions, as challenges confronting the banks include concerns about risk management in a weak economy.

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THE ACTIVITY OF BELARUSIAN VOLUNTARY SOCIETY ON PRESERVATION OF HISTORIC MONUMENTS AND CULTURE AND ON PERPETUATION THE MEMORY OF EVENTS AND HEROES OF THE GREAT PATRIOTIC WAR

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The seventh session of the Supreme Soviet of the Byelorussian SSR (Soviet Socialist Republic) adopted the Law "On the commemoration of the victory and perpetuation the memory of the soldiers of the Red Army and the partisans who died fighting against the Nazi invaders during the Great Patriotic War of the Soviet Union," which in turn was the beginning of work on perpetuation the memory of the events and heroes of the Second World War. All city and district Party committees, together with the Soviet authorities made decisions on the design and improvement of the mass graves, the perpetuation of the memory of the Soviet Army and partisans. The community organization that actively became involved in such matters, was Belarusian Voluntary Society for the Protection of Monuments of History and Culture (BVSPMHaC). The aim of the work: To give the characterization of the work of BVSPMHaC on perpetuation the memory of the events and heroes of the Great Patriotic War.

Material and methods. The article is based on the archive documents of the Belarusian Voluntary Society for the Protection of Monuments of History and Culture (NARB, f. 492, op. 2) fund. This article is based on documents archive fund of the Belarusian Voluntary Society for the Protection of Monuments of History and Culture (NARB, f. 492, op. 2) and the data issued by the Republican Council of BVSPMHaC. We used general scientific, historical-genetic, historical-comparative methods.

Results and discussion. Established in accordance with the CC (Central Committee) BCP (Belarusian Communist Party) and the Council of Ministers of the Belarussian SSR resolution, in December, 1966, the Society (on the1-st of January, 1985) consisted of 2.29 million members united in 12,404 primary organizations [5, p. 22]. It assisted state agencies in the preservation of historical heritage in the future perpetuation memorable and significant events, names of war heroes. Various forms of public involvement in the identification, study, accounting, maintenance and use of monuments were applied: browsings and contests, monthly and weekly works on beautification of monuments, funding for replacement, reconstructions, repair and beautification of monuments and places of military glory of the Soviet people. It should be noted that especially widely and actively this work was conducted on the eve of significant and memorable dates. During the period from 1965 to 1972 more than six thousand monuments obelisks, memorial plaques and other memorials were established in the republic, [4, p. 8]. In 1974, on the eve of the 30th anniversary of liberation BSSR from Nazi invaders, with the participation of the local council of the society there were 3906 burial places regularized in the country, over 400 monuments were repaired and 20 new monuments were built on the graves of Soviet soldiers and partisans [1, p . 34]. In 1975, with equity participation of the Society 230 monuments dedicated to the heroic actions and deeds of Soviet soldiers, partisans and the underground were built[5, p. 22]. Great work to further perpetuatinon of the memory of soldiers, partisans and the underground fighters carried out in preparation for the 40th anniversary of the liberation of BSSR from Nazi invaders and the 40th anniversary of the Victory in the Great Patriotic War.

Since 1983 the annual National Public review of improvement of Sites and Monuments of military and labor glory of the Soviet people have being taken place. As a result of these reviews from 1983 to 1985 435 memorials and obelisks were constructed, reconstructed and replaced, 156 memorial plaques were found [5, p. 23]. For these purposes they spent 373.2 thousand rubles from the Belarusian Voluntary Society Historic preservation [5, pp. 23-24]. Activists of the Society held multilateral efforts to identify unknown burial places of the dead soldiers and partisans during World War II, and the identification of their names. By the year of 1984 13635 previously unknown names were engraved in the memorial plates and obelisks [5, p. 24].

The work on the creation lecture groups to promote knowledge about the monuments and establishment of regular lectures and reports on military-patriotic themes was improved and intensified[2, l. 1, 3, 7]. During the year of 1974, 19,718 lectures about the historical and cultural monuments were given by republican, regional, city and district offices [3, p. 3]. More than 70% of all lectures – were given on a specially created themes, including the following topics: “Monuments and memorials of the Belorussian operation", "Monuments of military glory of the Soviet people", "Heroes of the Soviet Union - our countrymen," "Partisan movement in Belarus: the monuments and memorials," "Belarusian Communist underground in monuments and memorials", "Monuments for victims of Fascism in Belarus "," Our countrymen - the heroes of the liberation of Belarus "," The victory of the Soviet people in the Great Patriotic War, "etc. [3, p. 4-5]. On the eve of the 40th anniversary of the victory in the Great Patriotic War BVSPMHaC lecturers performed in 153 lecture halls, 105 video halls and gave 51 series of lectures on the subject of «The immortal people’s exploit» and «Forever in people's memory» [5, p. 25].

Together with the strengthening and consolidation of the lecture groups, considerable attention was paid to the printed propaganda. Were developed and sent to a number of areas of methodological developments [2, l. 5, 7]. In 1975 district and city offices of the Society published more than 40 posters, leaflets, booklets with a total circulation of about 20,000 copies. Among them are: "Zyslau – an isle of a lady-partisan" (Luban); "Slutsk region remembers its liberators", "Minsk Region remembers" (Minsk district); "They Fought for Their Country" (Smolevichi district); "For centuries there will be the memory for the live and the dead” (Sharkovshchina district); "Nothing is forgotten, no one is forgotten" (Glubokskiy rn), and others. [3, p. 5]. Within the period from 1976 to 1980 40 books, pamphlets, scientific methods and reference materials about the monuments of history and culture were published. Reference books and photo albums about the memorial complexes, booklets about the Heroes of the Soviet Union, brochures about the participants of the partisan movement and the Communist underground were published (during the period from 1981 to 1984 there were published more than 150 items of such materials) [5, p. 27].

Much attention was paid to the placing the information about the monuments of military glory of the Soviet people in the press, radio and television [2, l. 3, 5]. Since 1970, the informational scientific methodological BVSPMHaC newsletter "Monuments of the History of Culture of Belarus" was published quarterly. It contained regularly published articles, essays, and the information about the monuments of military glory of the Great Patriotic War [4]. Within the editorial offices of many newspapers, radio and television supernumerary departments who did a great work on breeding a sense of pride for the country, respect for the history of the country, respect for its people, for its great achievements in workers were created. Such performances were held once a month [3, l. 6].

Conclusion. The BVSPMHaC activities on perpetuation of the events and heroes of the Great Patriotic War was an integral part of the work of the Society. We should objectively admit that Belarusian Voluntary Society on preservation of historic monuments and culture made a significant contribution to the implementation of the state policy on decent honoring of the victims of the Great Patriotic War.

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MUSEUM SPEELKLOK IN UTRECHT: INFORMAL FORMS OF WORK

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The variety of profiles of museums in modern world demonstrates the fact that any manifestation of human life is important for future generation. Music museums occupy a special place among modern museums. The purpose of this investigation is to study the informal methods and forms of work of the National museum of automatic musical instruments in Utrecht (Netherlands). The topic of the research is of current interest, as there are a great variety of musical museums, and informal forms of work of museum in Utrecht could be used by other one.

Material and methods. The official web site of the National Museum of automatic musical instruments in Utrecht, personal experience and observation of the researcher, as well as the following methods: descriptive and analytical, statistical, comparative benchmarking, methods of analysis and synthesis were used in this research.

Results being discussed. First of all, it is worth noting that a number of directions could be identifying among the musical museums. For example, there are museums specializing in life and work of a particular composer, performer or musical group. As an example we could mention the house-museum of Wolfgang Amadeus Mozart in Salzburg (Austria) [1] or the Museum "History of the Beatles" Liverpool (England) [3]. A separate group of musical museums present musical instruments of a certain time or a certain type, for example, only the wind instruments of the 20th century. These museums show the evolution of music. Also, there are museums that are dedicated to a particular musical direction. For example, the museum of rock music was opened in Barcelona in 2011 year.

One of the musical museum, which presents to its visitors an unusual exposition and informal forms of work is the National museum of automatic musical instruments in Utrecht (Netherlands). The name of this museum is Speelklok. It presents automatic musical instruments that were common in the Netherlands and in Europe. The exhibition consists of great variety of street organs of different historical periods, various sizes and purposes, different degree of safety; mechanical music boxes and a striking clock.

The history of the museum begins in 1956, when the exhibition "From the music box to the street organ" was presented. The exhibition was very popular and it led to the opening of the museum in 1958. For more than 50 years of existence, the main goal of the museum has not changed – to revival the interest in mechanical musical instruments, as a cultural and historical heritage. Since 1984, the museum is located in the building «Buurkerk», which is a monument of architecture of the Middle Ages. The museum's collection includes more than 1,100 exhibits [2].

As previously noted, the museum presents informal forms of work with the audience. So, one of the elements of the excursion in the museum Speelklok is showcasing the work and the sound of automatic musical instruments, also guides tell unusual facts, amusing stories and anecdotes about exhibits, so excursion as the standard form of the museum work turns into an exciting adventure. Tours are conducted in two languages – English and Dutch [2]. Visitors who want to explore the museum on their own also have the opportunity to hear the sound of the instruments. Each guest is given a special card that activates some of the exhibits of the museum and shows how the instruments function and sound. In this museum is the principle "Touch please!", which is widespread in European museums. Children and adults have the opportunity to study the mechanism of some of the exhibits, run the musical clock or street organ.

The museum has been established informal work with children's audience. For children in the museum are installed special labyrinth, where children can climb, play, and as a reward in this labyrinth are made a special windows, which exhibited musical boxes. Thus, the child does not get tired of the monotony of the excursion, and a static examination of exhibits. This part of the exhibition Speelklok allows children to feel like a researcher, and to obtain information in non-standard, non-intrusive, playful way. Museum studies are another form of work with children. In Utrecht National Museum of automatic musical instruments classes are held for children from 4 to 12 years. They are able to create their own musical composition, "program" musical punch cards, and use them for music boxes [2]. Children study not only the structure of mechanical musical instruments, but also create their own musical composition that allows children to touch the mysterious world of music.

Besides the collection, storage and promotion of mechanical musical instruments museum Speelklok engaged in restoration and conservation of artifacts. Since 2009, visitors have a unique opportunity to visit the restoration workshop and to see the work of a master restorer [2]. For the museum this practice gives additional money, and for visitors it is the opportunity to look behind the "curtain", to see the work of the museum from different sides.

One more unusual decisions of the museum is the way of exhibiting rare music boxes. Music boxes were created not only for playing melody. Figures, which decorated the boxes, moved and arranged the performance. Unfortunately, problems of safety of exhibits do not allow organizing exhibition in the way the visitors can see the music box in action. There are phonorecording broadcast in some museums, but in the Utrecht Museum a special window was created. In this window original boxes are exhibited static, but on a special screen with the holographic image is shown in what way these boxes are functioning.

The organization of work in Speelklok is a good example of using the museum management. The museum has a rich museum shop, with a great variety of souvenirs; musical cafe where visitors can relax under the accompaniment of music, sounding of mechanical musical instruments. Luggage storage at the museum also reflects the specific of the place: boxes are interspersed with the windows, in which musical boxes are presented. Also the museum gives the opportunity to rent one of 3 original street organs. The museum provides an opportunity to rent street organ of differing size and cost. For example, the rent of small hand organ cost 75 € per day [2]. This service is popular, and organs are rented for city holidays, festivals and private parties.

Conclusion. National Museum of automatic musical instruments in Utrecht is an example of a successful combination of cognitive and hedonic functions of modern museum. In this museum the visitor can not only enjoy the aesthetics of vintage automatic musical instruments, but also hear their sounds, learn the mechanisms and principles of operation. The museum gives attention to the work with children and young audiences, and finds the compromise in the issue of the safety of exhibits and demonstrations of their operation for the visitors. All parts of the museum from the luggage storage, shops, cafes to the restoration workshop, subordinated to the main principle – to captivate the visitor in a mysterious world of music.

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INTELLECTUAL CAPITAL IN THE INNOVATION ECONOMY

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Intellectual capital in modern society becomes the basis of wealth and determines the competitiveness of economic systems, is a key resource for growth and development. With it, the economy becomes more information-intensive, technology-oriented and innovation. The economy's ability to create and use intellectual capital increasingly determines the economic strength of the nation and its welfare.

Material and methods. Intellectual capital is intangible assets, without which the company can not exist, increasing competitive advantage. The constituent parts of intellectual capital are: human capital (knowledge, skills, experience and qualifications of staff); intellectual property, or structural capital (the rights to industrial property, protected by patents and licenses, copyrights, know-how); customer capital or marketable assets (contracts, orders, sales opportunities, trademarks); organizational capital, or infrastructure assets (traditions, goals, company culture, management philosophy, business processes, internal networks, systems, databases).

Characterizing the category of "intellectual capital", you must select the following features:

- In modern terms this form of capital determines the main trends of economic growth;
- The formation of intellectual capital demands on the individual and society large and increasing costs;
- Its accumulation in the form of knowledge, skills and experience of the staff of the enterprise;
- The accumulation of intellectual capital of its yield increases up to a certain limit, the upper limit of the limited active labor (active working age), and then decreases sharply;
- The nature and types of investment in intellectual capital due to historical, national, cultural characteristics and traditions;
- Investment in intellectual capital should provide its owner receive a higher income;
- Investments in intellectual capital gives quite significant in terms of volume, long-time and integrated over the nature of economic and social effects;
- Intellectual capital is different from physical capital in the degree of liquidity, it is not the current assets; only its individual elements or services that are suitable for the patenting of knowledge can be bought or sold;
- The use of intellectual capital is always controlled by the individual regardless of the source of investment in its development;
- The functioning of the intellectual capital, the degree of the impact of its use due to the free will of the subject, his individual interests and preferences, its material and moral interest, responsibility, outlook and the general level of culture, including economic [1].

Intellectual capital sets the pace and nature of the production technology and upgrade its products, which then become the main competitive advantage in the market. Quality intellectual resources and the extent of their involvement in social production have a direct impact on economic growth and the level of national wealth. Intellectual capital of the nation is creating a society of certain material and technical conditions for the formation and development of the productive capacity of people. On the development of total intellectual capital of the country directly affected by such factors as the cost of education, science, culture, public health, environmental protection, improved working conditions, investment in production and marketing sector.

Intellectual capital is inextricably linked with the innovation development. The centerpiece of the intellectual capital in the production of human capital appears that forms of interaction and networking, through effective team work allows you to organize the innovation process, as part of structural capital, which, in turn, determines the efficiency of the innovation process, and the effect on innovation.

In recent years, in the Republic of Belarus conducted purposeful work on the preservation and development of scientific, technological and innovation capacities. Improve the management system of science, to expand and strengthen the basis of the modern legal and regulatory framework of scientific and innovation activities, reorganize academic and university science, take measures to raise the level of innovation of production, the development of information infrastructure and innovation, small and medium-sized high-tech enterprises, complex high technology etc. All these measures were not, however, a systemic nature and tries to establish the adequate development of market relations and the international standards of the national innovation system of Belarus.

Results and discussion. An important socio-economic objective of the present stage of development is to ensure a high level of innovation activity of Belarusian enterprises. However, the implementation of a significant part of innovation enterprises faced with such negative factors as the lack of own sources of funds, high interest rates, high rates of construction and equipment, high inflation, lack of creditworthiness and others. Therefore, reducing or eliminating the impact of negative factors on innovation activity is a priority of the state.

At the same time, it is worth noting that the index of knowledge (the ability to generate, receive and disseminate scientific knowledge) in the ranking of 146 countries in the world in recent years, Belarus has risen from 52th to 45th place [2].

According to the index of the knowledge economy (presence in the country the conditions for the effective use of scientific knowledge for economic development), the Republic of Belarus has risen from 73 th to 59 th place [2].

Conclusion. Thus, it can be argued that Belarus is doing the right steps in its innovative development. This is evidenced by the international ratings. However, in order to achieve sustainable growth in the future, there should be an increase in the cost of development, training and development of new types of high technology and high-tech products, pay close attention to the performance of organizations and the impact of innovation. Work on the construction of an innovative economy in Belarus should include dynamic advancement in the following areas: human capital development of high quality; construction of a modern market innovation system; adaptation processes; development of the sphere of advanced services; informatization and building the network economy; sustainable development of the territories.

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ROLE AND PLACE OF THE PUBLIC THE ORGANIZATIONS IN STRENGTHENING OF THE COMMUNICATIVE PROCESSES IN BEHAVIOUR STUDENT'S YOUTH

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Association of youth in public structures a task difficult, responsible. To a greater or lesser extent modern school youth the possession in the weight of the egocentric, introversive personal organization is characteristic. A number of young people are allocated with rational thinking, equal on personal representations and values. Besides, can convince themselves of correctness of negative moral installations, proceeding from psychological need for a self-justification, an explanation of the acts for themselves, and also to equal on approval of a reference group.

Not casually therefore, devote to the computer, tablets, e-book readers much time. As a result they reduce a communicative component, ability to communicate, be integrated in new conditions. For successful correction of first-year students it is necessary to consider an orientation of their personality, to find approach and to show alternative. In this sense the important adaptation role at faculties in higher educational institutions is carried out by public organizations.

The purpose of work is disclosure of ample opportunities of trade-union committee, Belarusian Republican Union of Youth, student council in hostels which allow increasing at students such perspective qualities as sense of duty, initiative, enterprise, diligence, communicativeness. In turn the dean's office mobilizes the most active, bright leaders able to carry out creatively instructions and to unite the main thing round itself students who protect interests of faculty, of university, become his patriots.[1, p 30] Besides worked independently as adults and responsible people.

Material and methods. The important role in formation of the active personality, with high general culture belongs to a student's asset. At the Belarusian state technological university at faculty of technology of organic substances created a student's asset which entered not only responsible for courses, heads of bureau and commissions of labor union, and also asset of the Belarusian Republican Union of Youth, representatives of student council of hostels No. 1 and 4. Within the scope of problems of an asset fall participation in meetings of the commissions: teaching and educational and prevention of offenses, carrying out information work, the organization of bodies of student's self-government, public organizations and circles on interests.

The student's asset from among members of labor union gives helps the least protected student's layers: to orphans, needy students. The asset together with administration gives financial support raising children, to the Mother's Day. Thanks to a trade-union bureau by Day of the disabled person was lump monetary sum to disabled students is made. Traditionally in the period of Christmas and New Year's holidays collecting gifts for children of students is regularly carried out.

Results and discussion. For formation at students of the correct ideas of a way of life, valuable, purposes in hostels of BSTU asset of the Belarusian Republican Union of Youth faculty of technology of organic substances held entertaining and informative events: «Reflect on the future now!», «Overcoming myths about drugs» dated to International Day of fight against drugs, «According to pages of sporting achievements of Republic of Belarus» for the World Ice Hockey Championship, «The first-year student be more active» by September 1.

Since 2012 the volunteer group «Open Hearts» of the Belarusian Republican Union of Youth which took under guardianship of pupils of the social and pedagogical center of Minsk operates on faculty of technology of organic substances. In recent years students held various charitable events and participated with presentation at the republican exhibition «I am the citizen of Belarus» in May, 2013. In 2014 the head of group Kuchinskaya Anna the student of the 5th course is awarded by an award of Mingorispolkom for socially significant activity.

The student council of the hostel is self-government institutions and is created for broad involvement of students, undergraduates, the graduate students living in the hostel to development and carrying out actions, sports оздоровительной works, to the solution of domestic questions, the organization of leisure, a healthy lifestyle, assistance to the management of the student-town and university. In particular, in the hostel No. 4 BSTU student-town where students of faculty of technology of organic substances by forces of student council live in the weight works group, among which tasks cultural and mass work, domestic and work of operas groups. As a part of the called asset students with high progress and good behavior. The youth will be organized by thematic evenings by public holidays, holds events for prevention and prevention of offenses and prevention of asocial behavior.

Studying of student's activity allowed us to draw some conclusions. First, in the majority students with high progress and good behavior are connected to public life. Secondly, in some cases, this activity at students who have admissions of occupations or unsatisfactory progress is observed. In the latter case their interest has superficial, casual or mercenary character. In turn the specified categories of the students applying for leader positions don't experience communicative difficulties. Similar problems are observed at young people who act as performers of instructions and tasks.

Conclusion. Our experience showed that the educational potential of public associations, is great. For youth it is a launch pad for further growth. It is known that the student's stage of life is the fascinating and saturated period when the youth acquires knowledge, receives qualification, but also participates in public and sports life of university, the country, gains life experience, receives skills of business communication.[2, p 32]

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PARTICIPATION OF THE BSSR IN THE CULTURAL CONTACTS BETWEEN THE USSR AND GERMANY DURING RAPALLO YEARS

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In april 16, 1922 during Genoa Conference, the People's Commissar for Foreign Affairs RSFSR G.V Chicherin and German Minister of Foreign affairs W. Rathenausigned a Treaty in Rapallo (near Genoa), which became a turning point in the history of the Soviet-German relations. Under this Treaty, both parties waived financial claims against each other. The restoration of diplomatic and consular relations, the development of economic cooperation and trade on the basis of most favored nation treatment were included into Treaty. Rapallo Treaty also gave a powerful impulse to the expansion of the Soviet - German cultural relations.

The purpose of the work is to trace the main channels of contacts in the sphere of culture between the BSSR and Germany, to determine their value in two-ways communications.

Material and methods. This research is based on data of archival holdings of Belarus, associated with the cultural development of Belarus in the 1920s, newsletters,All-Union Society of Cultural Relations with Foreign Countries(VOCs). The main methods of the research were descriptive, historical - genetic, historical - comparative.

Results and discussion. The signing of Rapallo Treaty gave a good impulse for the beginning and the successful progress of cooperation between two countries and peoples in the field of spiritual culture. Belarus' contribution to these processes was quite significant, as well as in the field of trade-economic, scientific and technical relations. This was crucially promoted by creation ofVOCs and its branch - Society for Cultural Relations of Soviet Belarus with Foreign Countries (BelOKS) with its center in Minsk.

Its chairman was a famous Belarusian poet and statesman T. Gartny (Zhilunovich). Hewas one of the organizers of the cultural relations between Belarus and foreign countries, including the field of literature, with Germany. As editor of «Polymya» and chairman of Belgosizdat, T. Gartny contributed to the dissemination of progressive German literature and journalism in Belarus. In 1928 BelOKS published a book «Belarusian culture» in the German language, which was widely distributed in Germany.

In 1925, Y. Kupala, T. Gartny and M.Charot visited Germany to establish contacts with German writers. In 1927, M. Zaretsky, M. Charot and T.Gartny were in Germany and met with German public. In Belarus, there appeared thetranslations of German classical literature. The translations of works by Kupala, Kolas, Bogdanovich, Gartny and others were published In German magazines .

In 1926, a world famous slavist M. Vasmer participated at academic conference in Minsk devoted to the reforms of the Belarussian orthography. Close scientific cooperation wasestablished between him and Belarusian scientist E. Karsky. In 1926, at the initiative of Vasmer in Germany abook by E. Karsky «History of the Belorussian folklore and literature» was published

In general, Belarusian-German relations in literature in the 20s - early 30s. was fairly active. Beside contacts among writers and poets, translated fiction was published. Thus, only in 1927-1932 14 titles of German classical and modern literature were translated and published in the BSSR.

Familiarity with Belarusian music in Germany was held during the international music exhibition «Music in the life of nations» in Frankfurt in 1927. The participants were musicians from 11 countries [1, p. 17-22].

In 1926, Belarus was also involved in organizing the exhibition of Soviet historical literature in Berlin, and the following year it participated in the International Exhibition of printing in Kiel, where the Soviet exhibition pavilion included two sections the historical development of press in Russia and the Soviet press after 1917 [2].

Big contribution to the development of cultural ties with the Soviet Union and the German Republic was introduced bythe Belarusian cinema. On the basis of BSSR decision from December 17, 1924on «regulation of the situation in the field of cinema in BSSR» the Office controlling the movie affairs (Belgoskino) was created. Belgoskino managed purchase, sale and renta of films, cinematographic goods trafficking, exploitation of cinematographic laboratories, workshops and so on.

In 1924-1925, in the cities of the country the first German feature films and documentaries, including a play by E. Toller «Destroyers machines», «Edge of Sanity», «House of the Dead» with the participation of Hans Efdinberger and Magadi Unger and others were shown in the cinema «Spartacus» in Vitebsk as well as newsreels «Germany», «Red Saxony», «Krupps fabric»,and so on. [3].

In the second half of the 20s. Belgoskino started exporting its films in Germany. In September 1927, it informed the People's Commissariat of the Republic about sending the film «Lesnaya byl». The same years Belgoskino established contacts with some German companies for shootting movies. [4]

At the same time, the development of cultural ties of Soviet Belarus with Germany was often constrained by a rigid class approach to different events, a look at the world through the prism of class values of proletarian dictatorship. It was a kind of psychological atmosphere in international relations 20-30th., when the world was split into two mutually hostile system. In such a situation universal spiritual values in relations between peoples and states often went to the wayside, which did not converge but separated global community.

However, in general, Rapallo was effective in Belarusian-German cultural relations that unfolded in the 20s on the background of favorable diplomatic and trade relations. At the same time, Belarusian-German relations had problems that complicated the contacts between two states. It was a period of contradictory combination in foreign cultural policy of the two countries of universal class values. Therefore cultural relations were not always smooth and stable. Belarus in those years made a worthy contribution to the rapprochement and mutual spiritual enrichment of the two nations equally with the other Soviet republics.

Conclusion. Belarus made a substantial contribution to the Soviet-German cultural relations in the years of Rapallo, and achieved considerable success in the promotion of Belarusian national culture and the language abroad.

Despite the termination in the 1930s all contacts between BSSR and Germany, active cultural exchange contributed to the establishment of close relations between our two countries that operate today.

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BELARUSIAN-VENEZUELAN RELATIONS AT THE PRESENT STAGE (1996–2013)

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In the modern world, it is important to maintain close contacts with many international partners. The state should be open to international cooperation in many fields which can have a positive influence on its development. The Republic of Belarus in accordance with announcement of the president led to the diversification of economic and political relations, which consisted of opening up the country to total new markets: Asian, African and South American markets.

The aim of this work is to investigate evolution of the Belarusian-Venezuelan relations in the years1996–2013.

Material and methods. In the article was used materials source of information on the researched topic. The research methodology is based on the principle of historical objectivity and systemically. The results of this work wereachievedby usingscientific and specialhistoricalmethods of examination.

Results and discussion. Particularly, the Bolivarian Republic of Venezuela in the past few years has become an important partner. Development of bilateral relations over the years 1997–2013 reached a title of strategic partnership. During this time, you may notice increased cooperation in the following areas: economy (energy industry, agriculture, automotive, construction industry), politics, culture, science and education.

The beginning of the Belarusian-Venezuelan diplomatic relations has become a reality on 4 February 1997 in New York in the seat of the United Nations after the signing of "Protocol on the establishment of diplomatic relations between the Republic of Belarus and the Republic of Venezuela" which confirmed the development of friendly political, economic and commercial relations on the principle of equality, independence, self-determination and non-interference in internal affairs [1]. However, close cooperation between the two countries began to develop only in the first decade of the twenty-first century. During the first official visit of the delegation of Venezuela in Belarus in 2005 the president Alexander Lukashenko said that "Now is the time when Belarus is going to seriously work on the South American market. We are looking for these countries that will help us realize our potential and we want Venezuela to be among them" [2, c. 8-10]. A year later, the president of Venezuela, Hugo Chavez, came with a visit to the capital of Belarus, then confirmed the desire to develop bilateral relations and strengthening further cooperation.

In 1996, the trade turnover between the two countries amounted to only $ 3.6 million, but continued to grow and in 2005 amounted to 15.6 million. The upward trend continued for many years and in 2012 the trade was estimated at more than US $ 580 million (including exports about 254 million US dollars and imports 326 million US dollars) [3]. According to the Secretary of State of the Security Council Viktor Sheyman, the successful development of trade relations between the two countries lies in the "complementary economies" [4]. Venezuela uses the power of technology to buy goods higher than their own, and Belarus buys raw materials and gaining new markets.

It should devote more attention to cooperation in the energy industry. Talks on cooperation in this area has already occurred during the first visit of President Hugo Chavez in Belarus in 2006. Signed by them the "Agreement between the Government of the Bolivarian Republic of Venezuela and the Government of the Republic of Belarus on cooperation in the energy and petrochemical industries." The document confirmed the implementation of joint projects in research, production, treatment, transportation, processing, storage and sale of crude oil, natural gas and other energy resources [5]. Later that same year, agreement was reached on the conduct testing and certification of oil reserves in the Orinoco River basin. Another step towards deepening cooperation related to the oil industry is a visit of Victor Sheyman in Venezuela in 2007. During the negotiations, the establishment of the joint venture established –VenBelNeft. The company was formed to exploitation of oil deposits in Venezuela. That same year also they created a second Belarusian-Venezuelan company - SeismoVenBel, whose aim was to study the location of deposits of oil and gas. Both of the above mentioned companies were created as a result of the cooperation of Belarusian and Venezuelan Belorusneft company Petroleos de Venezuela SA

In 2010, for the first time they started talking about the possibility of importing oil from Venezuela to Belarus. To transport Venezuelan oil they used three different ways: Ukraine, Estonia and Lithuania. In October of 2010 during the visit of President Hugo Chavez in Minsk found that in 2011–2013 the total amount of crude oil purchased by the Belarusian party will be 30 million tons. However, in 2012, due to a new contract for the purchase of crude oil between the Republic of Belarus and the Russian Federation, the supply of raw material from Venezuela has been paused. But stopping oil imports has not affected the further cooperation between the two countries in this field. Crude oil production by the Belarusian-Venezuelan company initially was about 300 thousand tonnes per year but in 2011 its amount increased to more than 1 million tons and in 2012 almost to 1,1 million tonnes. You should also be aware of the gas sector. In 2011, and 2012 the extraction of gas through a joint company BeloVenesolana has amounted to 800 million of cubic meters. In 2012, they also signed an agreement for the construction of a gas pipeline Barquisimeto-Barinas with a total value of approximately $ 300 million.

Another rapidly developing area of cooperation is agriculture. The first talks on the subject were held in July 2006. They signed the agreement that confirmed the cooperation in scientific and technological development of agriculture and rural areas. It was decided to start working academic centers associated with the agricultural sector as well as the common exchange of experience and experts. One of the projects prepared by the two parties were called agrocities that Belarus is committed to build on the territory of Venezuela. The purpose of starting this project was to create jobs and address the food security of the South-American partner. One example of such agrocities is LaRoana. It consists of nearly 8000 hectares of total area, and the area of the agricultural area is nearly

5000 hectares. There were built 500 houses for 2.5 thousand of residents and broadly diversified agricultural infrastructure [6, s. 205].

As part of the development of scientific cooperation they has decided to set up a Belarusian-Venezuelan Centre for Scientific and Technical Cooperation, the aim of which was to coordinate cooperation in the following areas: biotechnology, microbiology, veterinary science, biochemistry, genetics, chemistry, ecology, nuclear technology and others. Centre is also involved in the analysis of markets and regulations of both countries. In addition, it provides support and advice relating to the conclusion of contracts and patenting the results of joint research.

Conclusion. As the above work has shown, Belarusian-Venezuelan relations are not limited to the declarative level. Venezuela has become at the beginning of XXI century an important element of diversification in the foreign policy of the Republic of Belarus. The potential of the two countries suggests that long-term cooperation can achieve even better results. The results of the cooperation so far show that in the coming years, we expect the maintain of the increasing trend in trade and closer cooperation.Venezuela has become the main partner of Belarus in Latin America and in the same time a bridge connecting with other countries in the region.

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CHARACTERISTICS OF THE XIV CENTURY'S FLORENCE NODILES SELF-IDENTIFICATION

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Problems of studying the social stratification of urban society, in particular, the place and role of the urban nobility – one of the most popular in medieval studies, as they have an expressly or implication relation to a whole range of key issues in the history of medieval Western society in general, and the cities of the XIII-XV centuries Italian Peninsula in particular. However, the question of the role and place of this stratum in the social and political life of Italian cities, including Florence, is studied insufficiently. At the same time, an appeal to the social and political history of XIII-XV centuries Italian urban societies, demonstrates that nobles played a very important role in the all aspects of cityes life. It found its reflected in the very different documents, giving researchers opportunities to study this problem.

The aim of the article is to identify the main features of the XIV century Florence nobility self-identification.

Material and methods. The methodological basis of this research is using the elements of the civilized approach elements in the study of historical processes. With their help, we consider the identity of the nobility in the urban environment of Florence, taking into account its unique regional characteristics. Used sources allow to use methods of the new cultural history, as they reflect the cultural representations of named social strata in urban society. Undoubtedly, in this study we also used the traditional methods of historical research.

Results and discussion. The question of the social structure of this Italian city in the period under consideration, and hence the place of the nobles, is very difficult. Such Italian researchers of the early XX century, as N. Ottokar [3, p. 47-122] and D. Pampaloni [4, p. 337-339], tend to argue that there was a symbiotic relationship between the "people" and former natives of the old feudal aristocracy. Outstanding Italian researcher Gaetano Salvemini, had on this account a different view, arguing the existence in society of the city on the Arno acute struggle between nobles and popolans [5, p. 48-49] (italian ─ popolo ─ the people, the citizens of simple origin). Similar position takes Franko Catalano ─ the Italian historian of the late XX century [2, p. 228-229]. The other famous author of the same period ─ A. Tenenty convinced that in the urban environment of Italy XIII-XV centuries prevailed «symbiosis between the bourgeois and feudal estates» [6, p. 115].

Anyway, in Florence, the distinction between the nobility and the tip of popolans was not destroyed, but blurred. Consequently, the study of identity representatives nobility is a very significant issue in considering the social structure of the city on the Arno. The most typical example of noble family relocated to Florence, ─ genus Kastilonko, which was the branch of the ancient feudal family Kwona, owned the castle in the city-county kontado. One of the members of this family, Lapo da Castiglionchio (1316-1381), was uniquely positioned himself, his son and their ancestors as the nobles [1, p. 1-4, 30-55, 59-61], he was proud that his ancestors had migrated to the city, «... were not descended to tinkering and trade... adhering to their traditions and a high position in the city ...» [1, p. 58], but he jealous ex-dependent peasants of his family, many of which «... stay in Florence even in positions of Signors (priors ─ V.T.), as the citizens, artisans and rich...» [1, p. 45]. Although this author notes nobility, generosity and solidarity of his clan, he had noted that «... it would be more useful to be born a plebeian (popolan ─ VT) than nobile ...» [1, p. 3], because in contemporary Florence there are many situations «when the plebian get the opportunity to purchase new glory, that is to become nobile by itself, and provide nobility to others (meaning descendants ─ V.T.)» [1, p.4]. And the low-born «does not deprive the hopes of the reign» [1, p. 8].

Another feature of the nobile's status in the representation of this author ─ more larger, than popolans have, responsibility to the urban environment, «if you decide to choose the path of pleasure and fun ... each of your mistakes will be the more easier if you do not have ancient and home mentors... because, coming from the plebeians, you would not have had in his house, no understanding, which could overshadow thee» [1, p. 3-4]. Thus, in the understanding of that nobile, belonging to a notable family, being paired with a certain degree of social responsibility in a number of situations gives fewer opportunities for advancement in society than popolanian status.

On the other hand, we must not forget that in the above example, we are dealing rather with the moral and philosophical arguments. Some points of of Castiglionchio's behavior make certain adjustments in our understanding of the meaning of his own noble status. So, about the time of his youth, he says: «... Being in teaching in Bologna... I was informed about our origins enough... and therefore, as a youngster, I thought then that I was of noble birth, as did I and others so I accordingly hold ... one boy ... because of all of the above, once had a quarrel with me and gave me my anger... I insisted with indignation of youth, as a best informed... said: «you speak the truth that you first came out this place, because when my ancestors bought this place, they bought it along with your ancestors...»» [1, p. 42-43]. From these passages we can see that, even after being forcibly relocated to the city, and the loss of a number of attributes of nobility, Florentine nobles retained a sense of superiority over those who did not have such ancestors, even if their positions in the social structure were equals.

Conclusion. Based on the foregoing, we can be note that, on the one hand, in XIV century Florentine nobles characterized themselves by pride of belonging to this social category, not always associated with the real situation in the hierarchy of the city-state. On the other hand, they understand that their social responsibility was much more, than the «people» have. They also understudied the fact, that nobile's status in some situations gives fewer opportunities for advancement in society than popolan's.

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JOHN DUNS SCOTUS (1265 / 1266-1308) ABOUT THE FAIRNESS OF THE DEATH PENALTY

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The doctrine of the Franciscan order has significantly affected the philosophical thought of the Middle Ages and the following centuries. The Franciscans have ascended to departments of European universities since the middle of the XIII century, and made an enormous contribution to the development of scientific knowledge. One of the most prominent representatives of the Order is Duns Scotus (1265 / 1266-1308).

Scotus' worldview was formed mainly under the influence of the intellectual tradition of the Order and writings of Augustine and Aristotle. The creative heritage of Scotus is quite extensive and characterizes the "highest" level of the social consciousness, but his writings were introduced into the scientific circulation partially. The philosophy of Duns Scotus was studied basically in the Franciscan environment and this, in turn, had an impact on the present state of the study of his social and political views in Russian historiography. Therefore, the relevance of studying Scotus' ideas grows due to insufficient attention of historians to this problem.

Material and methods. The social and political views of the philosopher are predominantly in theological commentaries Reportata Parisiensia (IV) and Ordinatio (III; IV). In our work we used the Complete Works of Scotus - Opera Omnia [1], this edition of Luke Wedding (OFM) of the seventeenth century, which was reprinted L. Vive in the twentieth century.

The methodological basis of this research is a complex, general scientific and special, historical method, which allows considering the social and political ideas of Scotus in a temporary space, to determine the internal and external factors of influence on erudition of the philosopher, reveal the unity of the issues under consideration in the objective reality of the historical developments and also to identify their specificity.

Results and discussion. In the last years of his life Scotus paid great attention to the consideration of questions of the social order. In the social and political theory of the philosopher, a special place is occupied for the problem of the death penalty. Scotus states that the positive law stipulating homicide is not a fair, because the divine law imposes an absolute prohibition on homicide, and no one can be exempt from compliance this law, which proclaimed the supreme, the exception can only be at the will God [2, c. 535].

Scotus condemns the death penalty for theft, since by virtue of the evangelical mercy the harsh measure of punishment should be abolished, despite the fact that it provided in the Law of Moses.

The law of retaliation however, which existed in many communities, according to which the murderer shall be surely put to death, was justified by Scotus, because this measure of punishment corresponds not only to the Law of Moses but also the natural law, also it was approved and confirmed in the Gospel. A person should patiently accept this retribution in those states that had adopted a law requiring life to give for the life [3, n. 6]. Retribution should be a punishment, which corresponds to the law and, in the opinion of the Franciscan; it is justified because it serves for the commonweal [4, n. 7].

The theory of retribution is based on the postulate that for revenge a tribute needs to be paid, a certain price, its undergoing significant changes, it becomes more complicated. With the proliferation of Christianity retribution acquires the meaning of not only in the meaning revenge, but also expiation of guilt before God. Because the person who violated the law is an offender and sinner, the main focus is on the sinful state of his spirit.

And the best substitute for the death penalty is an expiration of guilt serving God, but here Scotus suggests not only about the spiritual repentance, but also about the need to expose the life of danger and fight for a just cause, the fight against the enemies of the Church [3, n. 6]. At the same time the philosopher notes that not every offender is capable of this, so the community is better to pass the law about retribution in the event of homicide.

Scotus defines the role and rights of the secular authorities in the application of capital punishment. When the legislator punishes the offender with corporeal punishment, it is fair and according to the law, if actions of the criminal bring a detriment to the state. The legislator may effectuate the death sentence, which is prescribed by the Scripture for Grave Crimes such as murder and adultery. The judge and the plaintiff must be impartial; they should not wish prosecution of the defendant to the crime which he committed, and the judge should not wish for the death of the guilty in the absolute sense. Moreover, the jurisdiction of secular court shall be in accordance not only with the divine law, but also guided canon law [3, n. 4]. The Church is the absolute authority and supreme arbiter in the land.

Conclusion. The Old and the New Testaments prohibit murder, but both provide examples of its endorsement, and this endorsement has made it possible for the church and secular authorities to create the notion of justifying the use of force for the sake of social order and for the sake of God. This enabled the Catholic Church, which opposes the death penalty, to admit it as a measure of punishment and make it exceptional prerogative of the tribunal - the Inquisition.

The problem of the death penalty is a prime example of synthesis of the various strata of social consciousness: moral and ethical, religious, social and political. The ideas of Scotus largely reflect the accepted Catholic doctrine and are close to the views of authoritative thinkers of the Middle Ages. However, various elements which Scotus introduces into entrenched provisions, show he is an independent thinker and has an original approach to the interpretation of this multifaceted category.

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LINGUISTICS AND LITERATURE. JOURNALISM

THE POET IN THE ARTISTIC UNDERSTANDING OF MAXIM BOHDANOVICH

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Maxim Bohdanovich (1891 – 1917) is a representative of Belarusian literature who is considered to be a multifaceted author from the aesthetic side as well as master of word from the stylistic point of view. The topics reflecting the relationship between a creative person and real life, the poet's destiny, creative inspiration lie in the core of Bohdanovich's work. The aim of the present study is to trace the artistic interpretation of a poet's image in the work of Maxim Bohdanovich.

Material and methods. The classicist's poems about a poet and poetry serve the material for the analysis. Concrete historical, comparative and descriptive methods were used while the research of the poems.

Result and discussed. Work was the source of joy for a hopelessly ill poet. Due to it the aesthetic views of M. Bohdanovich found its realization in prose, literary critical articles and mostly in poetry. One of the main ideas of the author is the artist's role and art's mission in society. He gave a brilliant answer to the question about responsibility before the readers in his poem *"Pesnyaru".* M. Bohdanovich drew the attention of the masters of word to the filigree work on the poetic line. The author compares the creative process with dressing of a stone that turns into value with the help of master's efforts: *"Трэба з сталі каваць, гартаваць гібкі верш, / Абрабіць яго трэба з цярпеннем. / Як ударыш ты ім, – ён, як звон, зазвініць, / Брызнуць іскры з халодных каменняў"*[1, p. 79]. The second poem reflects the way the author is observing conversion of the natural to the aesthetic – the grain of sand gives a birth to a pearl. *"Кавалак грубага жыцця"* can transform to soul rush similar to natural metamorphosis: *"Калі ў ракавіну цёмную жамчужніцы / Упадзе пясчынка хоць адна, – / Жомчугам патроху робіцца яна! / Калі ў дух мой западзе і заварушыцца / Там кавалак грубага жыцця, – / Ў жомчуг звернецца ён сілай пачуцця!"*[1, p. 77]. Evolving the motive of works creation M. Bohdanovich made play with not only the above mentioned poems. Each of them reveals the topic of the art in its unique way. At the same time the author devotes himself to the philosophical thoughts about value of the real art and poet's mastery in the following lines: *"Ціхія мае ўсе песні, цёмныя, як вугаль чорны, / Але ўсё ж яны засвецяць, калі я ў агні мучэння / Іх разжару, распалю; / А як згасне ён – дык бліснуць, быццам дыяментаў зёрны, / Бо абернуцца, застыўшы, у драгацэнныя каменні / Ў час, як лягу я ў зямлю"*[1, p. 175].

M. Bohdanovich wrote many poems in 1909-1912. That period was characterized by the political situation when Belarusian literature was made refuse from the ideals of freedom and freethinking. Self-sacrifice for the sake of people's interest was the reflection of the poet's social views. Bohdanovich is thinking over the continuous relations of the author with the eternal world and social conditions in the sonnet *"Замёрзла ноччу шпаркая крыніца".* All these conditions draw a creative person into the conflict characterizing by social standoff. The poet's song was created with the aim of sincere serving to people. It is connected with its motherland, life and nation's struggle with thousands of threads. It compares the poet's life symbolically with the spring that got frozen in winter. Its surface has *"няма ўжо руху ні сляда"*, however, *"струіцца магутная, жывучая вада"* internally under the layer of snow. And this live water will be able to *"на вольны свет прабіцца"*: *"Прыклаў я гэты сімвал да сябе, / Схіліўшыся ў надсільнай барацьбе, / І разгадаў прыроды роднай словы./ Як – прамаўчу, бо кожны з вас – паэт. / Рассейце ж самі лёгкі змрок прамовы, / Сваей душы туды праллііце свет!"*[1, p. 189]. M. Bohdanovich marks a great role of creators and poets in the formation of nation's spirituality. But the poet insists that only the singer who takes care about the technique of his poem as well as devotes himself totally to people is able to wake up the holy conscience.

According to M. Bohdanovich's point of view, the form of the work is integral and organic part of its essence and represents the demonstration of artistry. Due to his opinion that is the reason why the beauty of the form is the only measure of value of the work of art. The author underlined in so many words: *"Прызнаць мы мусім, што каштоўнасць вырабаў прыгожых адно толькі праз красу іх форм узрастае і толькі красою форм каштоўнасць тую мераць можна"* [2, v. 2, p. 63].

Beauty and artistic value of the work achieved by the author depend on the elegancy of the forms. On the other side, the criteria of the mastery is a master's ability to achieve the perfect forms of the artistic things: *"Бо чым болей ад работы майстра формы рэчы прыгажосці набіраюць, тым каштоўнейшай рэч гэтая пачынае рабіцца. Таксама і здольнасць майстра тым большай трэба ўважыць, чым лепшую форму кавалку срэбра або золата прыдаць ён здольны"* [2, v. 2, p. 63].

The poem *"Ліст да п. В. Ластоўскага"* is essential for understanding M. Bohdanovich's attitude to the art. It is also significant while considering his appealing to antiquity. The poet correlates the roles of talent, efforts and inspiration in the artistic activity thinking over creative achievement of Mozart and Salieri. The Belarusian singer's vision *"У творчасці яго раптоўнага няма: / Аснова да яе – спакойная дума"*[1, p. 199] coincides with his own position. Probably that is the reason why Salieri gets justification of the artist in the above mentioned poem. M. Bohdanovich provides the arguments proving that hard work *"мерны, нудны труд"*does not disturb from talent's development: *"Не! Працай гэтаю сябе ён развіваў. / … / Хай судны час настане, – / Спакойна Музе ён і проста ў вочы гляне, / І будзе за любоў да здольнасці сваёй / Апраўдан Музаю і ўласнаю душой"*[1, p. 200]. Bohdanovich outlined the topic of the artwork not only in his poems but also in *"Апавяданні аб іконніку і залатару".* He showed the significant role of hard work in the art emphasizing that the birth of beautiful forms is impossible it. The poet protects not templates and iterations but the necessity of innovation and understanding of the fact that the art is updated due to constant search and progress.

M. Bohdanovich considered the extension of the form and the orientation of the Belarusian literature to perfection and uniqueness to be his main aesthetic aim. The poet defined his position in regards to the problem of creative succession in the poem *"Тэрцыны": "Ёсць чары ў забытым, старадаўным; / Прыемна нам сталецця̆ў пыл страхнуць / І жыць мінулым – гэткім мудрым, слаўным, – / Мы любім час далёкі ўспамянуць. / Мы сквапна цянемся к старым паэтам, / Каб хоць душой у прошлым патануць. / Таму вярнуўся я к рандо, санэтам, / І бліснуў ярка верш пануры мой: / Як месяц зіхаціць адбітым светам, – / Так вершы ззяюць даўняю красой!"*[1, p. 95].

M. Bohdanovich often thinks over his own work and the ways of art's development appealing to the ancient poets and analyzing their achievements. The poet praises *"мудры і кіпучы верш"*of the ancient Greek creator Anacreont in his poem *"Бледны, хілы, ўсё ж люблю я…": "ў жылах кроў хвалюе, / Ў ім жыццё струёю плешча, вее хмелем ён"*[1, p. 73]. However, the Belarusian author intended not only to show his adherence and acceptance of such a kind of poetry. Every particular line of the poet surely passes the test of time. But only the real poetry reminds the vintage wine: *"Дні ідуць, праходзяць годы, – / Але ўсё крапчэй, хмяльнее робіцца яно"*[1, p. 73].

Conclusion. Belarusian literature of the early 20th century was influenced by the principles of the artistic interpretation of the poet's image which are revealed profoundly in the works of Maxim Bohdanovich. The aesthetic conception of the poet that included the problems of the spiritual life, time and space, attitude to good and evil was reflected in the unique internal world of the lyrical character. The latest modest four lines became the "Monument" of Maxim Bohdanovich. The creator finalizes his activity with this poem as last poetic breath. He considered to be the edge of the black death to be light, the house in which he was dying to be white, the bay where he died to be blue and the only collection of poems *"Vyanok"* to be the greatest treasure of his life: *"У краіне светлай, дзе я ўміраю, / У белым доме ля сіняй бухты, / Я не самотны, я кнігу маю / З друкарні пана Марціна Кухты"* [1, p. 244].

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GENRE AND PLOT PECULIARITIES OF FANFICTION (BASED ON THE CREATIVE WORK OF THE ADMIRERS OF THE BOOKS "HARRY POTTER" BY J.K. ROWLING)

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In a modern society the phenomenon of the literature of self-published books - fanfiction - becomes more and more popular. In fanfiction we can speak about the specificity of its plot, and there are also its own genre traditions. The object of our research is the peculiarities of the genre and plot in fanfiction.

The aim of the research is to study the genre and plot peculiarities of the works of fanfiction.

Material and methods. In the scientific work we use such methods as comparative and textual analysis, and also the elements of a statistical method and the method of classification. The materials for the research are the works of fans of the creative work of J.K. Rowling "Harry Potter".

Results being discussed. Fanfiction (often abbreviated as fan fic, fanfic, or simply fic), is a broadly defined fan labor term for stories about characters or settings written by fans of the original work, rather than by the original creator. Fan fiction is defined by being both related to its subject's canonical fictional universe and simultaneously existing outside the canon of that universe. Most fan fiction works are read primarily by other fans, and therefore it is presumed that the readers have knowledge of the canon universe (created by a professional writer) in which the works are based [1].

Fan fiction can be categorized in a number of ways. Some of these categories are similar to the original fiction, and some are specialized. One of the basic categories used in fanfiction is the genre. There are some specialized genres, which have their own specific features and considerably differ from the genres in the study of literature. And we can also speak about the creation of new genres in fanfiction.

The basic genres in fanfiction are *Adventure* (a genre of stories featuring a plot with a fair amount of physical action. Adventure stories tend to be mainly plot-driven in nature, but may also contain mystery, suspense or romance), *Angst* (a genre in which the stories usually have heavy and sometimes depressing themes, and have the characters suffering emotionally (and sometimes physically) in some way. Relationship break up, character death, hurt and comfort are all forms of angst stories.), *Comedy* (a genre of funny and amusing stories with strong elements of humor throughout. The humor may be the point of the story or just an entertaining by-product of the storytelling itself), *Crossover* (stories in which the characters, premises, or settings of more than one fandom coincide. Crossovers may consist of a complete blending of universes or only a slight, passing connection), *Darkfic* (it deals with intentionally disturbing material, such as physical and emotional violence. The main characters may be the victims of the violence, the perpetrators, or both. The mood and atmosphere are characterized by a shift away from optimism, toward despair or hopelessness, or even a sort of gleeful exploration of the disturbing. Darkfics do not have happy endings.), *Detective* (the stories in which the author describes the investigation and the definition of the guilty), *Drama* (a sorrowful story with social conflicts, usually containing a romantic relationship with a sad ending), *Fluff* (stories in which there is no angst or, often, any real plot either. Fluff fics tend to be short and sweet, with little to no depth, but often quite comforting to read), *History* (the stories are about the events in the past), *Horror* (the stories are aimed to cause the feeling of disturbing expectation, excitement or fear), *POV* (= Point of View – the stories written from a certain character's perspective, in which the readers experience everything within that story the same way the character does without any insight into the thoughts or motivations of the other characters. Unless the POV is omniscient, in which case the reader is aware of every characters' thoughts because they experience the story from all perspectives. Can be either a minor character, a crossover character, or an original character), *PWP* (= Plot? What Plot? – the stories with a defining characteristic of little to absolutely no plot. May be vignettes, character studies or, most frequently, strictly pure sex. The term may also be known as or possibly evolving to mean Porn Without Plot), *Romance* (the story in which love between the characters is described) [2].

As we can see from the definitions, the genres in fanfiction are not the same as in the study of literature. There is a genre *Novel* (a long narrative, normally in prose, which describes fictional characters and events, usually in the form of a sequential story) in the study of literature, and it can be subdivided into such kinds of novels as a detective novel, a love story, an adventure story, a historical novel, etc. But in fanfiction it can be observed, that Adventure, Detective, History and Romance are separate genres with their own specificity. The main thing, which distinguishes these genres from the genre Novel in the study of literature, is their size, as they can be not only long narratives, but also the stories of medium size and even short stories.

There is another difference between the genres in the study of literature and in fanfiction. In the study of literature we can speak about the Gothic literature, and all the stories can be subdivided into the categories according to the kind of horror in it. Thus, in the study of literature we can mark out the gothic romance, the novel of suspense, the novel of terror, etc. But in fanfiction the stories with such kinds of horror are marked out as separate genres: Angst, Horror and Darkfic.

One more difference in the classification of the Gothic literature is that in the study of literature all the stories are subdivided in different genres according to their form (a novel, a novella, a tale, a short story, etc), but in fanfiction the form is not a criterion for subdivision into genres, and all these forms can be presented in one genre.

When we speak about the subdivision of genres according to the content, another difference can be observed. In the study of literature there are such genres as Comedy, Tragedy and Drama. In fan fiction there are also all these kinds of genres, but the difference is, that the genres in the study of literature and in fan fiction are common only in their main idea. In fan fiction the similar to the study of literature features are: in Comedy – much humor, in Tragedy – the deepest conflicts of reality can be observed, and Drama is a sad story with universal or personal contradictions. But the forms of these genres in fan fiction and in the study of literature have nothing in common.

And some more new genres such as Crossover, POV, Fluff and PWP, which we don’t have in the study of literature, have appeared in fan fiction. The genre Crossover can exist only in fan fiction, as only there it is possible to combine two or more authentic worlds. As for POV, in the study of literature the writing from the point of view of a person is only a literary technique, but in fan fiction the Point of View is a genre. Fluff and PWP are widespread genres, and though it is easy to distinguish them from other genres in fan fiction, they do not have enough qualities to become independent genres in the study of literature.

The plot in fan fiction also has different varieties and peculiarities and is constructed by a curtain scheme. It is possible to pick out the basic types of plot schemes presented in fan fiction [3].

One of the classifications is connected with the type of the conflict type in fanfics. If we observe the local passing conflict, the plot in such works is considered to be classical with the scheme of construction including an exposition, an outset, action development, the culmination and an outcome. If the conflict type in the works is a steady disputed condition, the classical plot scheme in them is not realized. To the with the classical plot scheme we can relate such genres as Drama, PWP, Romance, Adventure, Detective, History, Comedy, Crossover, Darkfic and Horror. However there are the specific features of realization of the classical plot scheme. So, in some genres plots do not have outset which is taken from the canon. An exposition is also often the canon. The given phenomena can be observed in such genres, as Adventure, Darkfik and Drama. To plots with the type of the conflict, such as a steady disputed condition, we relate the genres Angst, Drama, POV and Darkfic. In these works the classical subject scheme is not realized.

The combination of motives is another approach to the classification of plots in fan fiction. The motives are the smallest narrative units, which are repeated in stories. A plot is a combination of motives, in which these smallest units stay in different positions. A.N. Veselovsky said that it is possible to reduce an endless variety of plots to a limited number of motives. In fan fiction it is typical to use the limited number of motives, which is restricted by the genre. But the amount of such combinations of motives is almost endless [4]. The genres with the greatest number of motives used are Adventure and Crossover. But if the author intends to reveal only one conflict, the motive in the story is also one. Such plots can be observed in the genres Romance, PWP and Detective.

According to naratology plots can be divided into classical and mythological. J.M. Lotman says that a classical plot begins, when someone or something breaks a given frame, and due to it begins a collision. And in a mythological plot there is no frame, and the basis of this type of plot is the situation itself, the universe. To mythological plots can be related the genres POV and Fluff, and in other genres authors use classical narratological plots.

Depending on the number of conflicts in a story plots are subdivided into one-linear, where only one conflict can be found, and multilinear, where there are several conflicts [5]. To one-linear plots can be related such genres as Angst, Drama, POV, PWP, Fluff, Romance, Detective, Comedy, Darkfic and Horror. Genres POV, Crossover, Adventure and History have multilinear plots.

One more approach to the classification of plots is the presence or the absence of an event-trigger centre. If an outset and an outcome are brightly expressed, it is possible to speak about the concentric type of a plot. In chronicle type prevail time motivations, and an event-trigger centre is absent. The chronicle type of a plot is presented in the genres Angst, Drama, POV, Adventure, History and Darkfic. Concentric plots are in Drama, PWP, Romance, Adventure, Detective, Comedy, Crossover and Horror.

Conclusion. On the basis of the research it is possible to draw a conclusion, that there are some specialized genres, which have their own specific features and considerably differ from the genres in the study of literature. And we can also speak about the creation of new genres, which only apply to fan fiction.

Proceeding from the results received by the analysis of plots in fan fiction, it is possible to draw a conclusion that certain types of plot schemes are inherent in each genre. Basically authors adhere to classical multilinear and classical narratological plots with a great deal of motives, and chronicle and concentric plots are used equally.

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METAPHORIC IMAGES IN TEXTS ABOUT SPORT. (BY THE EXAMPLE OF RUSSIAN, GERMAN AND ENGLISH MASS MEDIA DISCOURSE)

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Metaphor as a linguistic phenomenon is still an “inexhaustible source for inspiration” despite the fact that the Humanities have contributed a lot of fruitful ideas and practical works to the richness of metaphor theory. Antecedent incomprehensibility of the essence of metaphor, its singularity, its dual, imperceptible nature, its emotionality as that of research object develops new views, concepts, theories, interpretations of this complex and versatile phenomenon.

The given article reviews peculiarities of metaphor uses in the area of media sports discourse. Following the ideas of A. Zilbert, a broad definition of discourse is accepted as everything that *said* or *written* about facts of reality [5]. The advantage of the suggested interpretation of discourse is that it eliminates any limitation such as monological / dialogical, oral / written, rhetorically or ideologically complete / spoken discourse, etc. It is mass media discourse that is the core of sports discourse (after E. Malysheva), and at the same time it works as a “transmitter” (cf.: “Vermittlungsebene” in R. Küster’s works) for other varieties of discourse [3, p. 17] and most completely reflects conceptual, topical peculiarities, genre and style of sports discourse, as well as its institutional character.

Material and methods. Texts taken from different subtypes of sports media discourse (newspapers, magazines, television, on-line broadcasting in the Internet and others) made the empiric basis for this research. Besides, there are examples in the article written by the author during TV and radio broadcasting of sports events (mostly football matches) from central TV and radio channels in FRG. The most effective methods used in the research were discourse analysis, componential analysis, modelling approach, classification, lexicographical method, conceptual and frame analysis. Distributive and comparative analysis were also used.

Results and their interpretation. The analyzing of the examples helps to single out some basic metaphoric models existing in media sports discourse. These metaphors have become conventional, a sort of “discourse formulae” that modern sports journalists can hardly do without. Cf.:

Sport is *War*:

Немцы есть немцы. Даже в **полумертвом состоянии** они изыскали в себе секретные, на случай **войны**, дополнительные резервы и **бросились** с ними на последний **штурм. /** Van Gaal erwartet **Schlacht** gegen Schalke 04 …. / Holland **mounted** their **first attack on the right flank.**

Sport is *Religion*

Спартаковцы ждут выхода Широкова как **мессии**, который подарит им другой «Спартак». / Die tot geglaubte Mannschaft drehte das Spiel, sie gab den **Glauben** nie auf, ja sie feierte regelrecht **Auferstehung** und wendete das **Schicksal** zu ihren Gunsten. / **Humility** is never rewarded in soccer, which is why the Bible does not contain a single reference to the **Beautiful Game**; that is odd because **football** is, we are frequently told, **a religion**. In 2000 years **football evangelists** will be knocking to our doors asking us **to let soccer into our lives.**

Who will be their **saviour**? Pele? Beckham? Hayles?

Sport is *Machinery*

"Трактор" **включил заднюю передачу**. После первого же матча на турнире в Екатеринбурге челябинцы отправились домой. / Danach hat Borussia einen **Gang** höher **geschaltet** … / The Galacticos **have** hardly **been firing on all cylinders** in the league this season.

Along with these basic metaphors occasional metaphoric projections have been revealed, they reflect generating function of linguistic identity mind. These metaphors, unlike generally accepted ones, are placed on the opposite side of the cognitive semantic space – so to say in the sphere of individual creativity, which "not only analyses images but creates new ones by means of analysis itself" [1, p 208].

Итальянцы сейчас выглядят просто как **стадо баранов во время грозы** / Mit Preisrichtern ist es wie mit **Pilzen** – auf einen guten kommen zehn schlechte. / They have Jesper Blomqvist to deputise when Ryan Giggs is tired or not fit … and Wes Brown **adding a new ingredient** to their defense.

No one denies that journalistic information must be *original*. Although journalists often happen to do 'Bericht**bestattung'** instead of **'**Berichterstattung' (literally 'burying' information instead of giving information) when they abuse metaphors and use inappropriate, scandalous metaphors contradicting with common sense, logics and ethics.

One of the newsreaders of the second channel of the German television K. Müller-Hohenstein thought it possible to describe M.Close's emotional state after he scored a goal through the metaphor "*ein innerer Reichsparteitag*". This phrase is a historical metaphor, it occurred in the lexical system of Nazi Germany language. It reflects a person's inner state, emotions (satisfaction, euphoria, ecstasy and other) that s/he experienced during Nazi leaders' speeches at a party convention. Other examples of 'awkward' usage of metaphors:

Молодая поросль российских фигуристов вышла на лед … / Дворец спорта сегодня надел **будничную одежду**: он окружен строительными площадками. / The **duel of the two chess Amazons** is to be continued tomorrow.

Conclusion. From the examples analyzed we can make a conclusion about a high degree of metaphoricity / figurativeness of media sports discourse in Russian, German and English world views. Discourse metaphors are created when journalists refer to diverse lexical semantic spheres (military, economic, technical, religious, architectural and other). Some metaphors have completely settled down in mass media discourse, other still have to prove their right to be used and the change their 'occasional' status.

The explanation for such 'omnipresence' of metaphors is not limited by desire of 'agents' to overcome stereotyped and monotonous style. Each of them bears high axiological potential that helps to highlight important aspects of this or that sports concept, which has become an integral part of mass media communicative space for a certain period of time. This is why using metaphors is more likely to be inevitability, 'mercenary marriage' than "a language disease causing a 'semantic scandal.'"

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THEOLINGUISTICS AS A NEW BRANCH OF GENERAL LINGUISTICS

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The development of modern general linguistics is characterized by the growth of scholarly interest in the language study and its close connection with the human cognition and thinking process, the cultural and spiritual life of a person. Modern linguists (A. Wierzbicka, S. G. Vorkachyov, V. A. Maslova, N. B. Mechkovskaya, V. I. Postovalova, Yu. S. Stepanov) indicate the close relationship between language and religion, the need for studies of the religious worldview and the religious consciousness with the purpose of in-depth study of the culture and world's perception of a nation, which is especially important within the dominant anthropocentric paradigm of linguistics.

Material and methods. The methodological basis of the research is as follows: the works of local and foreign linguists on the problem of the relationship between language and religion: "Language and Religion" by N. B. Mechkovskaya, "Russian theolinguistics: history, main directions of research" by A. K. Gadomskiy; "Theolinguistics in modern human cognition: its origin, main ideas and trends" by V. I. Postovalova; "Language and Religion" by D. Crystal; "Theolinguistics" by J.-P. van Noppen; "Metaphor and Religion (Theolinguistics II)" by J.-P. van Noppen and others.

The descriptive research method and the method of organization of theoretical material have been used in this paper.

Results and discussion. According to N. B. Mechkovskaya, language and religion are the two forms of the world representation in the human cognition, the two elements of the human soul, the two deepest interrelated fundamentals of the human culture [1, p. 4]. The main source of human culture is rooted in religion and language; religion is an area of increased attention to the word, the language issues have always been of vital importance within the history of religions [ibid. p. 4-5].

The resolution of this complex and multidisciplinary problem of the relationship between language and religion has become possible within a mainstream of a new linguistic branch, known as ***theolinguistics.***

In 1981, the Belgian linguist Jean-Pierre van Noppen defined ***theolinguistics*** as a discipline, that "seeks to describe how human discourse may be employed to refer to the divine, and beyond that, how language operates in 'religious' situations in manners which may not meet the narrow standards of direct, univocal reference, but which nevertheless operates with a logic which can be demarcated in terms of known linguistic processes (metaphor, speech acts, …)" [2, p. 693].

Thanks to the Cambridge Encyclopedia of Language edited by David Crystal, where it is defined as a discipline investigating biblical and theological language and the language of all who are involved in the theory and practice of religious belief [3, p. 438], *theolinguistics* gradually began to develop in German general linguistics. Various issues relating to religious language, such as *German religious vocabulary*, *speech acts* and etc., have been discussed in the articles of German scholars (H. Moser, W. Gossmann, I. Schermann, A. Shufte).

The formation and the development of *theolinguistics* as a new scientific branch was extended in the publications of J.-P. van Noppen (Belgium), D. Crystal (The UK), E. Kucharska-Dreiß (Poland), K. Koncharevich (Serbia), A. K. Gadomskiy (The Ukraine), V. I. Postovalova (Russia) and some other scholars.

Russian and foreign linguists (A. K. Gadomskii, V. I. Postovalova, K. Koncharevich) define *theolinguistics* (from the Greek. *theos* - God and lat. *lingua* - language) as a discipline emerged from the interaction and mutual influence of language and religion and that explores manifestations of religion, which have been fixed and reflected in the language itself [4, p. 63-69]. Moreover, V. I. Postovalova clarifies *theolinguistics* a special kind of a linguistic discipline, that "has been complicated by the addition of religious and theological aspects of the world- and reality- perception" [5]. Whereas the main purpose of *theolinguistics* is focused on the understanding of how the language functions in different "religious contexts" or "religious situations" (J.-P. van Noppen, D. Crystal, A. Wagner), as well as on the study of the so-called "religious language" (A. K. Gadomskii, E. Kucharska-Dreiß, K. Koncharevich), its subject is beyond the scope of pure linguistics: it requires the use of different types of knowledge (scientific and religious) and "the combination of two different forms of mentalities – scientific and theological – at the lead character of the first one " [ibid].

According to A. K. Gadomskiy, the term "theolinguistics" "consists of two components, that, on the one hand, imply the existence of two autonomous fields of knowledge (Religious Studies and Linguistics), and on the other hand, require their possible combination" [4, p. 68]. Thus, a theological component includes a range of sciences: Religious Studies, Theology, History of Religion, Philosophy of Religion, Religious Ethnology, Geography of Religion, Ecology of Religion, Psychology of Religion, Phenomenology of Religion, etc. A linguistic component is represented by the following approaches: the language is considered as a system of signs (a semiotic approach); as a cultural code of a nation (a linguocultural approach); as a phenomenon, encompassing various spheres of human existence (a pragmatic approach); as an ontological, synergetic-pneumatological beginning and spiritual energy (a theoanthropocosmic approach).

Conclusion. In consideration of the foregoing premises, we consider that the subject of *theolinguistics* is not only the religious (sacred, liturgical, prayer) language, but also the religious discourse and the religious communication. Hence, from the linguistic point of view, the basic research material of *theolinguistics* may include linguistic units, filled with religious content: *hagiography, biblical expressions, biblical idioms, spiritual code, the canonical language, godparents' names, translations of the Bible, religious studies and Christian terminology, religious discourse, religious concepts, religious style, religious and theological vocabulary, the Old Church Slavonic language, theonyms* etc. Moreover, *theolinguistics* as a new branch of general linguistics may focus on: 1) textual analysis, translation, terminology problems in the religious orientated texts; 2) the study of interlayer verbalization of religiously marked linguistic phenomena: phonetic, morphological, syntactic, lexical, phraseological units; 3) the study of multi-level and multi-religious concepts; 4) the study of linguistic units with a religious meaning, which are characterized as the building blocks of the spiritual cultural code; 5) the promotion of the correct use of relevant vocabulary in the secular lexicon as well as in the ecclesiastic-religious sphere, 6) the study of the reflection of religious worldview in different linguistic cultures, etc.

In conclusion, it should be noted that religion, as a form of social consciousness, is the object of various scientific researches, among which may be named *geography* and *ecology of religion*; *history of religion*; *philosophy of religion*; *psychology of religion*; *teaching religion*; *ethnology of religion* some others. The trend of integration of a theological knowledge with the worldview and culture is increasingly manifesting itself in the modern world and is fixed in such new scientific branches as *biotheology*, *neurotheology*, *psychotheology*, *theophysics*, *ecotheology* etc. In our opinion , the consideration and resolution of various linguistic problems in the mainstream of *theolinguistics* is very progressive and relevant. In the light of new discoveries in various scientific fields, it allows us to take a fresh look at the language in which, according to P. A. Florensky, "laid the explanation of entity" [6, p. 143].

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SEMANTIC FIELD OF AN ETHNONYM *THE BELARUSIANS:* PSYCHOLINGUISTIC ASPECT

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A name *the Belarusians*, as well as our country's name *Belarus*, originated from the term *White Russia*, which in XII – XV centuries related to various East Slavic lands. After Belarus had joined the Russian Empire, a term *the Belarusians* became a main name of a Belarusian people, which reflected its ethnic distinctiveness. However, an ethnonym *the Belarusians* is known to have become widespread only after the formation of Belarusian Soviet Socialist Republic (1919). During a long period of time the Belarusians' mentality was developing acquiring new distinctive features in the conditions of certain socio-political, socio-economic and spiritual life.

The subject of our research is the following: semantic components of an ethnonym *the Belarusians*, lexical units as means of expressing a semantic field's meaning. The objective of research is to form a semantic field "the Belarusians" on the basis of a psycholinguistic approach. According to the objective we were to find the key-words and to carry out an experiment according to so-called rating scale.

The topicality of our research is explained by the existing debates about an ethnic picture of a Belarusian, it lies in the necessity to eliminate basic mistakes and an unfair attribution of false qualities to the Belarusians. The specificity of my research lies in finding seme-associations to the ethnonym *the Belarusians*, in covering new psycholinguistic methods of research.

Psycholinguistics is the science dealing with the creation and perception of utterances. It deals with the processes of creation, perception and formation of talking in correlation with a language system. Psycholinguistics' object is similar to linguistics' one, but its methods are similar to those of psychology [1, p. 404]. Psycholinguistics adopted its methods mostly from psychology. Essentially, it uses experimental methods as well as methods of observation and self-observation. The method of linguistic experiment was adopted by psycholinguistics from general linguistics [2, p. 137].

Material and methods. Ethnic characteristics were chosen on the basis of folk sources, dictionaries, literary works, a questionnaire poll of our country's and neighbouring countries' citizens, weblogs, and certain articles. The methods of research used in the scientific work are the following: a psycholinguistic experiment and an analysis of its results, a questionnaire poll and static data processing, a method of forming a semantic field.

Results and discussion. We conducted an experiment using a questionnaire poll. Several psychological factors of perceiving a person were considered. Negative and positive estimation of ethnic qualities is the first element of a direct experiment. The second element is determining to what extent the proposed characteristics are typical of a Belarusian in terms of objectivity. Personal views of respondents were paid great attention to.

85 forms were gathered at the end of the experiment. Students were used as respondents, the age – from 17 to 21. In all, 74 characteristics were suggested in a form, 70% of which were adjectives, 28% – nouns, 2% – verbs. For choosing the characteristics a three-point scale was used: 1 – isn't suitable at all; 2 – sometimes, it depends on circumstances; 3 – is eminently suitable. These figures are regarded as the first, second and third levels. The larger figure of the level is, the more importance has a word in the formation of a semantic field.

In our research we used a semantic field approach – a methodological principle of structural-functional description in comparison with a conventional one. This approach covers the formation a field and nuclear-peripheral relations.

In the center of a lexical field there is a nuclear with a relatively small number of components, next to it there is perinuclear space, periphery, composed of zones (the nearest, the farthest, the extreme). To form a semantic field the characteristics should be divided into levels according to the counts. Four characteristics were chosen for each of the levels (besides the extreme one); these characteristics had the highest percentage. In another case the field is likely to lose its informativeness.

1 level (the smallest number of associations): ruscist (90%), tired (86%), frightened (84%), passive (80%), weary, feeble, timid, obedient, obliging with authorities, sick, thin, sly, similar to a Russian, retarded.

2 level: law-abiding (90%), a mushroomer (87%), a farmworker (86%), a fisherman (85%), disciplined (85%), just (83%), orderly (82%), self-respect (80%), calm (79%), solidarity, compassion, an ability of considering someone's opinion, personal independence, a great importance of freedom, a peasant, cautious, a war participant (a veteran), unfortunate, offended, tall, simple, a Belarusian sets a good example for neighbouring countries' inhabitants, a necessity of car service, leave villages, love potatoes, russification and cosmopolitism influence a younger generation, different, an inhabitant.

3 level (the largest number of associations): patriotic (92%), light-coloured clothes, light hair and eyes (91%), kind (90%), compassionate (88%), amiable (87%), talented (86%), humane (85%), peaceable (81%), democratic, hard-working, good-natured, patient, a Christian, open-hearted, friendly, fellowship, gentle, hospitable, respectable, simple-minded, generous, economical, trustful, thoughtful, smooth-tongued, a representative of Slavic peoples, light.

Each level is interchangeable with a certain semantic field level: 1 level (there is a larger number of units) = the extreme zone of periphery; 2 level = periphery with the nearest and the farthest zones; 3 level = perinuclear space. A nuclear = *the Belarusians.*

A semantic field can be formed at different levels. Considering psycholinguistic aspect as well it's possible to broaden the range of methods and make an experiment closer to reality and more significant.

Nowadays instead of the term a semantic field is replaced by such narrower linguistic terms as a lexical field, a synonymous line, a lexico-semantic field and etc. Each of these terms suggests the type of lexical units that make up the field and / or the type of connection between them. After all, in a great many works expression "a semantic field" and special equivalents are given as terminological synonyms.

Conclusion. It should be mentioned that the choice of key-words depends on objective and subjective sides of the speaker. All psychological traits of men should be taken into account to form a semantic field rightly. At present some traits of Belarusian ethnos are subjected to changes or disappear.

Certain positive qualities corresponding with humane ideals of the Renaissance were chosen by the majority of respondents, for example, "humanism", "democratism", "kindness", "diligence", "talent", "peacefulness". Some characteristics were regarded as the least typical of a Belarusian, for example, "unfortunate", "oppressed", "tired", "retarded", "feeble", "timid", "frightened" and etc.

A characteristic "ruscist" was a negative one and received 95 per cent at the first level. A characteristic "the Lithuanians" is at the second level and has a positive appraisal. Such characteristics as "mushroomers", "fishermen" and "farmworkers" were regarded as similar and these words are at the second level. Perhaps, it's explained by their belonging to a single lexical group "kind of activity". Such a characteristic as "being similar to a Russian" is at the first level. It proves that the Belarusians have great national self-awareness, when neighbouring countries' inhabitants consider them very similar to the Russians. Such characteristics as "law-abidingness", "self-discipline" and "discipline" are at the second level, which says about a good civic education.

During the last century under the influence of various events the Belarusians' world-view underwent certain alterations, for instance, deep piety turned to atheism and relaxation of national identification. At present under the influence of social changes in the mentality of the Belarusians there is no excessive ideology, atheism, life conservatism , on the contrary, the necessity of an independent state, of a democratic society, of free self-affirmation and national self-awareness is emphasized.

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COLOURDESIGNATION IN FAIRY TALES OF OSKAR WILDE

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The relevance of the research is conditioned by the everlasting interest in the creative heritage of Oscar Wilde among both linguists and philologists.

Aim – to analyze the designation of colour in the fairy tales of Oscar Wilde.

Material and methods. Objectives:

❖ To analyze the theoretical works devoted to the problem of aesthetics and artistic vision of O. Wilde;

❖ To identify the ideological, stylistic and symbolic features of red in the fairy tales of Oscar Wilde;

We used the collection of fairy tales by O. Wilde "The Happy Prince and other stories" as the material of our research.

Results and discussion. Oscar Wilde is "a true artist" (Bryusov) poetic, who skilfully used colour symbols to create the images of his heroes and often included figurative meanings of colour in the psychological portraits of his characters [1, 78].

The study of vocabulary of the fairy tales of Oscar Wilde revealed that the most extensive microfield is that of red colour, the dominant and the core of which is the lexeme “red”. The frequency of the use of this lexeme in the texts of the studied fairy tales constituted 76 cases.

Red and its shades are often evaluated by the author and the characters as positive as they are bright and festive-looking; moreover, they are identified with royalty, beauty, and youth.

The red colour in the fairy tales is used to describe:

- Flowers, fruits: *“She said that she would dance with me if I brought her red roses,” cried the young Student; “but in all my garden there is no red rose” (The Nightingale and the Rose) [3, 14];*

The use of exactly red fruits in the episode indicates their sweetness, taste, since this colour increases appetite. In addition, it gives life energy.

- Animals: “*He told him of the red ibises, who stand in long rows on the banks of the Nile” (The Happy Prince) [3, 21];*

- Parts of the body, most often the lips, mouth: “*his lips are red as a pomegranate” (The Happy Prince) [3, 22];*

“he kissed the cold red of the mouth” (The Fisherman and the Soul) [3, 17];

Red colour here is stimulating, warming, penetrating into the blood. Namely, red lips symbolize it.

- Also animals’ little paws: *“The little ducks were swimming about in the pond, looking just like a lot of yellow canaries, and their mother, who was pure white with real red legs, was trying to teach them how to stand on their heads in the water” (The Devoted Friend) [3, 35].*

In the description of the paws of animals, in our opinion, Oscar Wilde used the red colour, and not any other, to illustrate dynamics.

- Precious stones and metals, primarily, ruby, gold, and bronze: *“High above the city, on a tall column, stood the statue of the Happy Prince. He was gilded all over with thin leaves of fine gold, for eyes he had two bright sapphires, and a large red ruby glowed on his sword-hilt” (The Happy Prince) [3, 21 - 22];*

Red is presented as warm, vibrant and alive. *“A jewellery worn on the body, not by the rules on clothing, jewelry, and therefore must transfer energy to the host”* [3].

-Also the lexeme “red” in the English language is often used to describe the colour of hair:

“By the itching of her palm the young Witch knew his coming, and she laughed and let down her red hair. With her red hair falling around her, she stood at the opening of the cave, and in her hand she had a spray of wild hemlock that was blossoming” (The Fisherman and the Soul) [3, 27].

The connotations associated with red cannot be only positive. This colour is often associated with blood, wounds:

“... The body of the Princess was being lowered into an open grave that had been dug in a deserted churchyard, beyond the city gates, a grave where it was said that another body was also lying, that of a young man of marvellous and foreign beauty , whose hands were tied behind him with a knotted cord, and whose breast was stabbed with many red wounds” (The Young King) [3, 30];

“On a red horse appears Death: And Avarice fled shrieking through the forest, and Death leaped upon his red horse and galloped away, and his galloping was faster than the wind” (The Young King) [3, 30].

The nearest periphery of the lexical-semantic field of red is constituted by shades of red, the most common (observed more than 9 times) in the tales of Oscar Wilde are: scarlet (9), pink (11), purple (14).

Of particular importance in this regard is the purple colour that has always been recognized as the colour of the royal family:

“It was a magnificent ceremony, and the bride and bridegroom walked hand in hand under a canopy of purple velvet embroidered with little pearls” (The Remarkable Rocket) [3, 47].

This colour is grand, festive. Often used as the dominant colour in flags of countries.

In addition, in some cases, shades of red are associated with evil spirits, witchcraft. For example, the heels of the witch who dances on the sabbath in the fairy tale "The Fisherman and the Soul", are scarlet:

“Round and round they whirled, and the young Witch jumped so high that he could see the scarlet heels of her shoes” [3, 18-19].

The colour of the magic flower that the witch offers to the young fisherman is similarly purple:

“I know a flower that grows in the valley, none knows it but I. It has purple leaves, and a star in its heart, and its juice is as white as milk” (The Fisherman and the Soul) [3, 18].

In this sense, purple is used to indicate power.

Conclusion. Wilde’s fairy tales are allegories, symbolic in their nature, the author puts into them his views on life and art. The aesthetic function of descriptions which contain colour and coloring is closely connected with the author's sense of beauty ‒ the colour of the descriptions is bright, saturated, as if in the still lives of the painters of the Italian Renaissance. The reproduction of colour in the fairy tales of Oscar Wilde at the level of image reflects the dialectic idea of the trinity of beauty - life - morality [2].

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LINGUISTIC AND GEOGRAPHIC REPRESENTATION OF SEMANTIC PECULIARITIES OF VIKONYMS OF THE MINSK REGION

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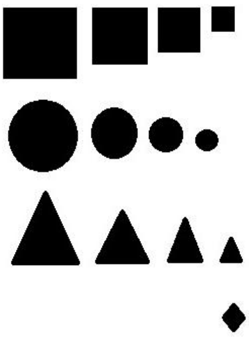
The mapping of the material is an important part of linguistic research and is most actively applied in dialectology. The experience accumulated in this domain is also used at linguistic and geographic representation of onomastic lexis (V.A. Zhuchkevich, N.V. Birillo, A.K. Matveev, Z.V. Rubtsova, G.P. Smolitskaya, O.A. Borisevich's works). The aim of the research is the establishment of semantic peculiarities of vikonyms of the Minsk region on the base of linguistic and geographic representation of the material. Names of intra rural linear objects haven’t been studied in this aspect that testifies to urgency of the accomplished research.

Material and methods. Vikonyms of the Minsk region in number of 1748 units (12578 fixations) served as material. During the research descriptive, areal, cartographical methods and elements of the statistical analysis were used.

Results and discussion. As a basis for systematization of vikonyms we accept the semantic classification of urbanonyms offered by A.M. Mezenko. The author proposes four principles of the nomination [1, p. 105-138]. In descending order of activity of the use in urbanonymy they located in the following sequence: the principle of the nomination in relation with other objects, the principle of the nomination on the nexus with a person, the principle of the nomination on properties and qualities of an object, the principle of the nomination on the nexus with an abstract term. It is necessary to notice that these principles become actual in other sequence in vikonymy. The map in which the following notations are accepted is created:



- vikonyms corresponding to the principle of the nomination on properties and qualities of an object (more than 300, 200-300, 100-200, less than 100 names respectively);

- vikonyms corresponding to the principle of the nomination in relation with other objects (more than 300, 200-300, 100-200, less than 100 names respectively);

- vikonyms corresponding to the principle of the nomination on the nexus with a person (more than 300, 200-300, 100-200, less than 100 names respectively);

- vikonyms corresponding to the principle of the nomination on the nexus with an abstract term (less than 100 names).

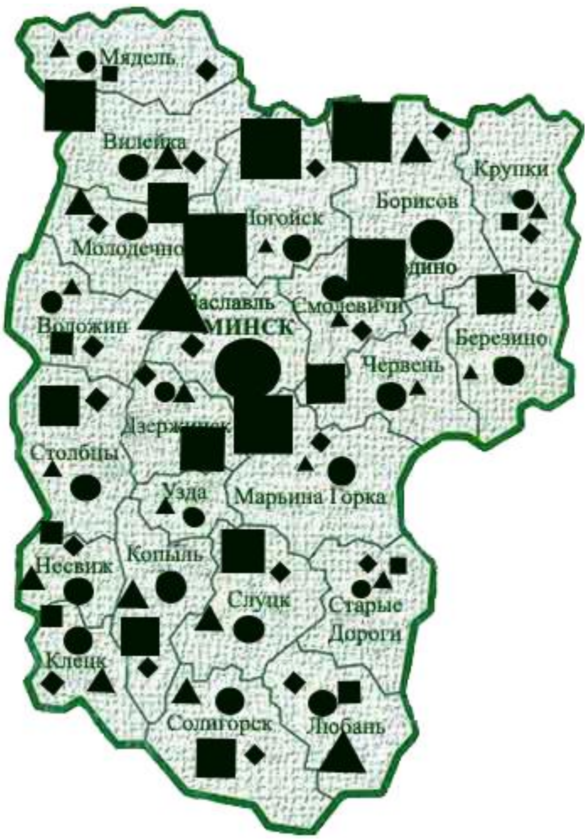
The most productive is **the principle of the nomination on properties and qualities of an object** *(see the Map 1)*. It unites the vikonyms describing landscape (*Овражная ул.* – agro-town Staro-Borisov of the Borisov district, *Степная ул.* – village Kommuna of the Lyuban district), floristic (*Брусничная ул.* – village Malyishki of the Vileyka district, *Крапивная ул.* – settlement Borikov of the Lyuban district), temporary (*Новая ул.* – agro-town Atalez of the Stolbtsyi district, *Старая ул.* – village Lyahovichi of the Dzerzhinsk district), spatial (*Поперечная ул.* – village Verbe of the Logoysk district, *Просторная ул.* – village Kolos of the Berezino district), emotional and characterologic (*Приветливая ул.* – village Leonovichi of the Vileyka district, *Славная ул.* – village Zamok of the Berezino district) features of appearance or existence of intra rural object.

The names forming this principle prevail in the territory of 20 districts, the exception is made only by Kletsk and Staryie Dorogi districts. Vikonyms which are going back to names of elements of landscape and containing parametric characteristics of an object are the most productive. The names formed from various elements of landscape are the most numerous. The high density of names of this group (more than 100) is characteristic of the central part of the region, on the periphery landscape vikonyms are involved not so intensively (from 37 to 99 units). A zone of prevalence of spatial vikonyms is Vileyka (more than 250 names) and Minsk areas (more than 190 names).

The next principle is **the principle of the nomination in relation with other objects** *(see the Map 1)*. It is formed by the names motivated with names of other objects – geographic (*Бегомельская ул.* – village Mateevo of the Logoysk district, *Несвижская ул.* – agro-town Snov of the Nesvizh district), architectural (*ул. Пансионат* – settlement Gorodische of the Minsk district, *Парниковая ул.* – village Maslovichi of the Minsk district), linear (*Лесная ул.→ Лесной пр-д* – agro-town Mikhanovichi of the of Minsk district, *ул. Сошенко → пер. Сошенко → проезд Сошенко* – settlement Chist of the Cherven district) – and underlining its spatial arrangement in relation to them (*Заречная ул.* – village Telyadovichi of the Kopyil district).

The area of the greatest concentration of the vikonyms which are going back to names of geographical objects is the Minsk district (more than 100 names), it is followed by Kopyil district located in the north of area (more than 50 names). According to our researches, this group of vikonyms gained the smallest distribution in a pericentral part of area – in the territory of the Dzerzhinsk and Uzda districts, and also in several areas adjoining on other areas – Myadel, Krupki, Staryie Dorogi.

The Minsk district is the territory of the maximum condensation of the vikonyms formed from names of intra rural linear objects (more than 250). The regions located to the east from the capital district and forming the small massif – Puhovichi, Cherven, Smolevichi, Logoysk, Borisov noted by the high density of these names. Here, and also in the territory of the Soligorsk district which is in the south of region it is recorded from 50 to 100 units.



The Map 1 – The distribution of the principles of the nomination in the territory of the Minsk region

Vikonyms, motivated with names of objects of social infrastructure, as well as the names containing the indication on spatial bond with an object gained the greatest distribution in Minsk and Borisov districts (from 50 to 100 fixations).

On the third place is **the principle of the nomination on the nexus with a person** *(see the Map 1)*. It mainly unites individual vikonyms (*ул. Долидовича* – village Zhivun of the Lyuban district, *ул. Карповича* – agro-town Kolodishchi of the Minsk district) and collective (*ул. Горняков* – settlement Zaozyornyiy of the Soligorsk district, *ул. Романтиков* – village Maryalivo of the Minsk district) consecrations.

Over the whole territory individual memorial names prevail. It is possible to allocate two areas of their greatest concentration. This is the central Minsk district and regions of the Slutsk and Lyuban districts located in the north of area. Territories of the smallest concentration of vikonyms of this theme group are located to the north (the Logoysk district) and to the south (the Uzda district) from the Minsk area (11 and 10 units respectively).

The principle of the nomination on the nexus with an abstract term (*Интернациональная ул.* – agro-town Vyisokaya Lipa of the Nesvizh district, *Летняя ул.* – village Mezhonka of the Cherven district) is the least productive in urbanonymy, and in vikonymy *(see the Map 1)*.

The mapping confirms that this principle is a little involved in the whole region. Only in the territory of three districts (Lyuban, Minsk, Soligorsk) the number of names exceeds mark 50.

Conclusion. As a result, it is established that 1) a kernel of the greatest concentration of the vikonyms forming each of the principles of the nomination is the Minsk district and it is caused by the following factors: the developed social infrastructure, the efficiency of agro-industrial complex functioning, a dense grid of settlements, a dense population etc.; 2) the most productive is the principle of the nomination on properties and qualities of an object. At that the names of elements of landscape are of special importance, as was reflected in vikonymy; 3) the sequence of the principles described above changes in some districts. For example, in the Kletsk, Lyuban and Staryie Dorogi areas located in the north of area the principle of the nomination of an object on the nexus with a person is paramount.

The same principle removes on the third position the names on the nexus with another object in Krupki and Myadel districts. The mapping allowed to allocate the most popular motivational signs in terms of each of the principles of the nomination. For the first are landscape and spatial features of an object, for the second is the nexus with an important architectural, linear, geographical object, for the third is the nexus with the identity of the person, for the fourth is the nexus with symbols of a certain era. Every district has its individual traits reflected in the system of names of intra rural linear objects. A number of the factors of extratextual character which influenced on formation of the vikonym space of each of regions are allocated: land relief, specifics of planning and arrangement of the settlement, intensity of development of the industry and agriculture.

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COMPUTER-ASSISTED LANGUAGE LEARNING

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Nowadays computer-assisted language learning (CALL) is getting widely used at the English lesson as it contributes to solving a wide range of didactic tasks, allows the teacher to increase pupils' motivation and adopt an individualized approach towards each student. However, being an innovation CALL involves a great number of issues to be discovered and analyzed and demands working out new teaching methods and techniques for its effective application. The main aim of this article is to display the variety of opportunities provided by CALL and define its place in the course of the lesson. What concerns the practical value of this work it is supplied with the description of the most frequently exploited the Internet resources and the survey of our own experience in this field.

Material and methods. Our teaching experience obtained during a pedagogical practice at school as well as the results of the survey carried out among the pupils at this school and students of our college served as the background for writing this paper. In our research we resort to descriptive, comparative methods and that of survey and observation.

Results and discussion. We have analyzed the effectiveness of our lessons with CALL through interviewing the pupils and comparing their results at ordinary and computer-assisted lessons. In order to find out if CALL has benefited to the lessons conducted during our school practice, I have arranged the survey among my group-mates. It involves the following questions: 1. Have you ever used CALL at the lesson? 2. Have you appealed to CALL for teaching Grammar, Active Vocabulary and Phonetics? 3. What programs and websites do you find useful? 4. Have you created any aids related to CALL?

Having analyzed all the results, I can conclude that 98% of the students have made use of CALL. About 67% use them to teach Grammar, introduce new words and train pronunciation and 33% for inspiring warming-up conversations, providing relaxation and for raising problem-solving tasks. What concerns the third question about 50% of the students have made an extensive use of programs I am going to describe below. And 27 % of the students have taken great pains in working out their own aids.

Besides all the participants of this survey state that their pupils have got more involved in the educational curriculum due to CALL. Their participation in the process of learning has become more active and intensive and by their words they were pleased to get aware of their achievements in classes with CALL. It should be also mentioned that they willingly and easily incorporated material learnt with the help of CALL in their speech and in ordinary tasks at the lesson.

CALL embraces a wide range of information and communications technology applications and approaches to teaching and learning foreign languages, from the "traditional" drill-and-practice programs to more recent manifestations based on a virtual learning environment and Web-based distance learning and also extending to the use of interactive whiteboards, computer-mediated communication and mobile-assisted language learning [2, p.57]. Being aware of all this diversity during our pedagogical practice we concentrated on two most optimal for us branches of applying CALL in educational process which include the practice of computer-based foreign language programs and an extensive use of the Internet-resources.

Actually there is an essential choice of computer programs. One should distinguish between basic drill-and-practice programs which are focused on vocabulary (“Words Teacher 1.0” , “BX Language acquisition”) or discrete grammar points (“English Grammar”, “E-Trainer 4800”) and innovative and interactive programs. The program “Grammar Land” referring to the latter reinforces grammar points, presents students with real-life situations in which they learn about the culture of a country and come into contact with real-to-life situations.

According to the main purpose of teaching a foreign language in Belarus which is the practical acquisition we must pay much attention to the development of speaking abilities. In this respect one may turn to the program “Bridge to English” which imitates a partner in a conversation making a pupil react to the situation by giving questions to the virtual partner and answering those produced by the program. “Bridge to English” belongs to one of the most sophisticated programs adjusted to analyze the learner's response, pinpoint errors and organize remedial activities.

It should be added that one can interact with a computer verbally in a direct manner as there are two fairly successful applications of automatic speech recognition where the computer “understands” the spoken words of the learner. The first is software for example “Talk to me” where the learner speaks commands for the computer to do. However, speakers in such programs are limited to predetermined texts so that the computer will “understand” only them. The second is pronunciation training. Learners read sentences on the screen and the computer gives feedback as to the accuracy of the utterance, usually in the form of visual sound waves. For instance in order to master pronunciation one should resort to the program “Professor Higgins” that requires the activity with a microphone. After having listened to the speaker’s speech the listener is due to repeat any stretch of speech to get a diagram of the sound and compare with that of the speaker’s one. The aim is to reach the original sound and consequently the speaker’s pattern diagram.

In order to achieve greater results online meeting or e-mail chat can be organized for the class activity. As a matter of fact using chat helps students routinize certain often-used expressions to promote the development of automatic structure that help develop speaking skills. The use of video conferencing gives not only immediacy when communicating with a real person but also visual cues, such as facial expressions, making such communication more authentic.

The electronic textbook is one owning the elements of an ordinary book, video, artistic play combined with photography and designed according to pedagogical and methodical requirements enables the formation of skills in listening, speaking, reading, writing, and their control [3, p.19]. Vocabulary acquisition is stimulated greatly by such electronic books as ”Triple play plus in English”, ”English Platinum”, “English for beginners”, ”Young genius” involving the stages of introduction, training and revision and consolidation of new words. It must be noted that electronic dictionaries are extremely productive in this respect. For instance “Abby Linguo5” supplies each word with the transcription and option to listen to the native speaker’s pronunciation in addition to a sufficient selection of different styles contexts for each item.

The Internet nowadays has opened up access to authentic foreign-language websites to teachers and students. During our school practice we borrowed original textual, video, audial materials from the libraries in English speaking countries as well as ready-made course books. In addition we were able to take the advantage of special programs (“Microsoft Word”, “PowerPoint”, “Photoshop” and etc.) to provide the lesson with illustrations, hand-outs, presentations. In fact we have concluded that it is possible to carry out the exchange of pedagogical experience between the teachers all round the world. At school where we had our practice there was an opportunity of using online tests to control pupils' lexical and grammar skills.

Conclusion. We may state that the introduction of a personal computer and a strong influence of the Internet on the educational system have resulted in considerable changes in the contents and methods of teaching foreign languages. The benefits of CALL are many and varied and those who put computer technology to use in the service of good pedagogy will undoubtedly find ways to enrich their educational program and the learning opportunities of their students.

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THE CONCEPT OF «HOMELAND» IN VLADIMIR ORLOV POETRY

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Vladimir Orlov is a modern Belarusian poet verlibrist. He comprehends in his work the most important problems for Belarusian society: preservation of their own statehood, native language, memory of the history. This all is the most important components of the national identity («Помнік», «Чужаніца», «Чалавекаптушкі», «Страта», «Асуджаныя», «Лёхі»). The essential problems for Belarusians still remain largely unresolved. It is no accident that the concept of «Homeland» is one of the central works of the writer.

The purpose of the article – to explore the concept of «Homeland» in free verse V. Orlov.

Material and methods. Material is free verse of poetry collection «Там, за дзвярыма». Using descriptive research method is analyzed concept of «Homeland» in poetry Orlov.

Results and discussion. The author speaks of «foreignness» his Homeland in vers libre «Чужаніца» using syntactic anaphora: *«Гэта чужая зямля, бо з вуснаў яе людзей злятаюць чужыя словы, якія не могуць сагрэць мае́ душы́. / Гэта чужая зямля, хоць у ёй ляжаць мой бацька, мой дзед і мой прадзед. / Гэта чужая зямля, і мяжа паміж ёй і радзімаю не ў прасторы, а ў часе»* [1, p. 55]. In the work the author shows the problem of preserving the people of Belarus national self-esteem and awareness of independence, national independence as the most important values. Land is strange to those who live on it without the love of it, without responsibility for the land. In vers libre author focuses on the concepts of foreign land and homeland over time. One of the ways to Homeland poet sees in the «merger» with the ancestors: *«Гэта чужая зямля, але ўсё гучней чуваць голас суцяшэння: ляжаш побач з продкамі, і яна стане радзімаю»* [1, p. 55]. These final lines refer the reader to the famous dictum: no prophet in his homeland. The merits are recognized only after death. Then the birthplace and the poet are finally reunited. Belarusians are beginning to appreciate their native when it is in the past: Skorina, who died in exile in Prague, Bykov, who lived before his death abroad (Finland, Germany, Czech Republic) etc.

In vers libre «Страта» Homeland is associated with a forgotten country, which the lyrical hero seeks to find in every moment of life: *«Шукаю цябе штодня – / у словах прахожых, / у абрысах мураванак, / у лініях рэк. / Шукаю зноў і зноў, але няма цябе там, дзе – сцвярджаюць мапы – ты была здавён»* [1, p. 54]. V. Orlov is looking for spiritual Fatherland sights (churches, temples), many of which were destroyed by wars: *«Буду шукаць, і аднойчы / твае далёкія храмы адновяць страчаныя абліччы, / твае выпрастаныя рэкі зробяцца пакручастыя, як лініі лёсаў, / твае прахожыя загавораць на мове, якой цэлае стагоддзе не чуў я»* [1, p. 54]. The national language serves as an artifact in vers libre, it had once been forgotten by people.

In vers libre «Сутонне» Belarus is depicted as the image of stopped time: *«Дзіўнае сутонне трывае над гэтым абшарам: ці то світанак, але сонца забавілася, ці то вечар позні, ды ніяк ноч не апусціцца. / <…> / Стаімо на ўзгорку, чакаючы раніцы або ночы, а сутонне ўсё доўжыцца, і тыя* (людзі. – ***T.D.***)*, што сышлі долкі, самі ператварыліся ці то ў безадметныя постаці, ці то ў ядловец»* [1, p. 59]. In this poem, you can see the subtext- features of Belarus and its ethnicity among other nations. The content of free verse is read in symbolic terms: the author shows how globalization «absorbs» the people, erases their nationality, the mental image: *«Стаімо ў сутонні на ўзгорку, і ўжо боязна зірнуць адно на аднаго»* [1, p. 59].

V. Orlov presents in his poetry image of the ideal city, city utopia, which embodies freedom. It is symbolization of Polotsk, the hometown of the writer, the cradle of the Belarusian nation and statehood. In vers libre «Лёхі» search for the ideal city is associated with the pursuit of happiness for the people: *«Калі мы былі блазнотай, пад старажытным саборам пачыналіся лёхі, што вялі ў падземны горад, дзе жывуць вольныя людзі. / Так казалі манашкі, і мы верылі ім – дзень пры дні прабіраліся ў саборныя сутарэнні і палохаліся саміх сябе, а ўвечары вярталіся, каб заўтра зноў шукаць да знямогі»* [1, p. 53]. The author poeticises legend of the labyrinth of Polotsk. The legend lives today among people.

Conclusions. The concept of «Homeland» in V. Orlov free verse acquires connotations of foreign land, forgotten country, forgotten ethno-cultural artifacts, enchanted country, city-utopia. Free verse aimed at the promotion of all belarusian as a determinant of Belarusian national identity.

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THE ROLE OF ENGLISH IN THE MODERN WORLD

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English has long been firmly become the international language. Without it, it becomes increasingly difficult to go college, get a job, meeting all the desired parameters, and just travel the world, without fear of not evaluate the merits of the free access to culture and traditions. Therefore, English can be called as a link between the countries and peoples of the planet.

English is able to unite all the nations, to make people more friendly and permanently remove linguistic misunderstandings space communication to unattainable levels.

Purpose: to find and examine the various ways and methods of learning English, and define the role and place of English in the international arena.

Today there are a huge number of methods for the study of language, which is characterized by its diversity and originality of applied educational programs. Modern methods of learning English can be divided into several types and groups.

Material and methods. One of these methods is the so-called “emotional stimulation”, known fact is that when we experience positive emotions, any information we perceive is much better, and our memory works at the same time several times more active, and thus even remembering complex information effectively implemented. That is why the essence of this method lies in the fact that the study of English is based on positive emotions, who we are on view, for example, the favorite English movies, cartoons, listening to music and reading the classic in English. For example, when watching the movies “The Taming of the Shrew” by students of master’s specialty group “Foreign Language”, the results of improved performance. The well-known English-language film has an emotional impact on 80% of the students.

There is also a technique of “intensive repetition and memorization ”,if more clearly imagine the effect of this technique, we can consider the following example, small child learns a new word when he repeats it often enough and it repeat last as long as the child does not understand it’s essence. You can also do well in learning English and repeat a new word or new rule as often as possible until you internalize its value or do not understand the meaning of the rules and the scope of its application. This method applies to first-year students in the study of specific thematic material, which allows you to learn the material on this subject 70% more efficient.

The third method “of auto-suggestion, and extra motivation”. This technique involves the suggestion fact of having to learn English, and the need to lead as many motivations to stimulate learning.

As you can see, modern methods of learning English are quite diverse, choose what kind of technique to solve only to you.

How many people, so many opinions, there can be no doubt, and every man for himself must decide whether it is important for him to know the English language and the role of language in the world.

Throughout the world, learning English is important. Every adult man dreaming master English at least at a conversational level, and the children begin to teach more with young children. What gives us the knowledge of the English language?

Results and discussion. Firstly, career. At the present time in order to get a prestigious job in large organization must be fluent in the language. With English you can always freely communicate with business partners, participate in international conferences, read international magazines and newspapers about the business.

Secondly, travel abroad. Modern man seeks in his life to visit as many different countries and cities, to learn the culture and customs of other nations. Yes, and being in a foreign country, feel much more confident with the knowledge of the English language.

Thirdly, studies. English language gives the opportunity to study in prestigious universities abroad, because it is one of the most important criteria for selection in revenues.

Having a degree, in say, London University graduate is able to apply for jobs around the world, because, as you know, a certificate issued in the United Kingdom is one of the convertible. That would be just perfect for me.

Further, the books. Reading foreign books in the original context, without translation, you can get much more pleasure from reading, as the translation usually is not quite accurate, depends on subjective opinions and skills of an interpreter, and fails to convey the true thoughts and emotions that the author has put.

Survey of students showed not the same opinion loanwords, opinion was divided 50 to 50.

English words in Russian are also critical. In recent years, the influx of English words in the Russian language has increased significantly. Uttering words such as “computer”, “player”, “hamburger”, we did not even think about the fact that all these words are borrowed from English.

And finally, wielding the English language, you always have the opportunity to talk with interesting people on various topics in English, make useful contacts and find new friends among foreigners.

Conclusion. In general, one cannot imagine the modern world and our lives without the English language, he is firmly entrenched in it, and completely changed our understanding of communication in general.

A few years ago, English was widely perceived as a foreign language. But over time, the role of the English language has increased so much that it is now considered a worldwide international.

Learning English for most of us becomes almost the biggest problem in life. Every adult wants to master English at least at a conversational level.

Everyone, of course, he decides for himself how he learns the language and learn it at all. But if you want to keep up with the world and open up new opportunities in many different directions, then the English language – this is what you need, and this is what will allow you to make a confident step towards a successful future in this you cannot doubt.

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NEOLOGISMS IN THE ENGLISH LANGUAGE

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"A new word," said philosopher Ludwig Wittgenstein, "is like a fresh seed sown on the ground of the discussion.” This quotation shows that neologisms play a very important role in the development of the language. With the development of technology and science, many “new words” appeared in the English language as well. So the theme of my investigation is “Neologisms in the English language.”

The theme is very actual as every period in the development of a language produces an enormous number of new words or new meanings of established words.

The object of the research work is the types of neologisms.

The aim of our work is to investigate different types of neologisms in deferent spheres of life, to define if neologisms are popular among young people and evaluate their role in the English language.

Material and methods. During the investigation different methods were used:

- Descriptive method;
- Comparative method;
- Analysis;

Neologism – is a new word, often consisting of a combination of other words. There are two types of neologisms: stylistic and terminological neologisms. Most of neologisms are terms. The layer of terminological neologisms has been rapidly growing since the start of the technological revolution. Neologisms are popular in different spheres.

Having learnt different sources, we can conclude that there are different classifications of neologisms**.** According to the degree of usage, we can divide all the neologisms into:

Unstable - extremely new, being proposed, or being used only by a very small subculture.

• Diffused – having reached a significant audience, but not yet having gained acceptance.

• Stable - having gained recognizable and probably lasting acceptance.

• Trademarks are often neologisms to insure they are distinguished from other brands. Example: Laundromat, Hoover.

• Nonce words – words coined and used only for a particular occasion, usually for special literary effect.

• Inverted – words that are derived from spelling (and pronouncing) a standard word backwards. Example: redrum.

• Paleologism – a word that is alleged to be a neologism but turns out to be a long-used (if obscure) word [1. p. 58].

According to the origin and formation we can divide all the neologisms into:

1) Derived words

The great majority of neologisms are words derived by analogy from ancient Greek (increasingly) and Latin morphemes usually with suffixes as -ismo, -ismus, -ija etc. Deriviation – the process of creating a new word out of an old word, usually by adding a prefix or a suffix.

2) Abbreviations

Abbreviation – a shortened form of a word or phrase Abbreviations have always been a common type of pseudo-neologisms, probably more common in French and German that in English. Example: Uni, Philo, sympa, Huma, fac, fab, video; they are normalized (i.e. translated unabbreviated).Abbreviations are used in different spheres, for example

- computers: ROM and RAM, of DOS and WYSIWYG (“read-only memory”, “random-access memory”, “disk operating system”, “what you see is what you get”).
- medicine: AIDS (“acquired immune deficiency syndrome”).
- politics: UNESCO, UNICEF (“United Nations Educational, Scientific and Cultural Organization”, “United Nations Children's Fund”).

3) Collocations

Collocations – a familiar grouping of words, especially words that habitually appear together and thereby convey meaning by association.

A collocation consists basically of two or three lexical (sometimes called full, descriptive, substantial) words, usually linked by grammatical words e.g. ‘a bunch of keys’, ‘a flock of geese or sheep’, ‘a pack of cards or hounds’ [2, p. 119].

Results and discussion. In order to know if neologisms are popular among people, I have conducted the survey. I’ve asked my group-mates: 1.What is neologism? 2. Do you use neologisms in your everyday speech? 3. What neologisms do you use?

Having learnt all the results, I can conclude that 80% of the students can explain the meaning of neologisms. About 70% use them in their everyday speech. What concerns the third question, about 50% of the students use neologisms that are connected with the sphere of the Internet (network, interface, face-book, browser, netbook etc.). 15% of the students use neologisms in their speech that are connected with the sphere of music (hip-hop, moshing). And 5 % of the students sometimes use such words as fertilizer, access, irradiation re-examinations, fingerprints.

Conclusion. So we can come to conclusion that the most popular neologisms among young people are connected with the topic computers and the Internet.

Many people have different opinions towards neologisms. Many are accepted very quickly; others attract opposition. Language experts sometimes object to a neologism on the grounds that a suitable term for the thing described already exists in the language.

The role of neologisms is very great in the development of the language.

New words and expressions or neologisms are created for new things irrespective of their scale of importance. They may be all-important and concern some social relationships, such as a new form of state, e. g. People's Republic, or something threatening the very existence of humanity, like nuclear war. Or again the thing may be quite insignificant and short-lived, like fashions in dancing, clothing, hairdo or footwear (e. g. roll-neck). In every case either the old words are appropriately changed in meaning or new words are borrowed, or more often coined out of the existing language material either according to the patterns and ways already productive in the language at a given stage of its development or creating new ones.

Thus, a neologism is a newly coined word or phrase or a new meaning for an existing word, or a word borrowed from another language.

The intense development of science and industry has called forth the invention and introduction of an immense number of new words and changed the meanings of old ones.

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THE REPRESENTATION OF THE FOREIGNER IN L.ANDEYEV'S AND M.GORETSKY'S SHORT STORIES

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L. Andreyev and M. Haretsky represents the same creative generation. They both pay particular attention to the problem of personality's self-determination. It is this feature that complicates authors' stories which often not just express abstract patriotic ideas, but also assert inseparability of a person from his or her homeland, person's non-viability in the conditions of imaginary foreign well-being. From this perspective the emigration issue goes beyond the national matter, acquiring the status of personality one. This problem is *topical* currently, in the time of active globalization processes; and it is demonstrated well in the stories Leonid Andreyev's *"The Foreigner" («Иностранец»)* and Maxim Haretsky's *"The American" ("Амерыканец")*. In addition these stories still have not been studied sufficiently.

The purpose of the article is to identify the features of the image of a foreigner in L. Andreyev and M. Haretsky's short stories.

Material and methods. The study material is the texts of Leonid Andreyev's story *"The Foreigner"* and Maxim Haretsky's story *"The American"*. We use comparative-typological and cultural-historical research methods in the study.

Results and discussion. Protagonists of the stories are different in nationality, social status and age, but they are united by the idea that all of vital difficulties are solved abroad, in the civilized world, where, they believe, reality itself provides a quiet, happy (mainly in the material sense) existence. In fact, Maxim Balazievich (the story *"The American"*) has already experienced this idea on the viability, because he has been living for almost twenty years on the rich American farm of his wife's relative. In the story *"The Foreigner"* this is so far only main character's dream. Moreover, in spite of certain differences in characters' views, in its orientation Balazievich's life would be, in a certain sense, the continuation of Chistiakov's story if he hadn't realized fallaciousness of his thoughts. In this context Haretsky's story is the more dramatic than *"The Foreigner"*, whose hero does not do the crucial step after all.

Both characters base their life on some abstract theories, rationalistic ideas, which save them from themselves. Balazievich has the saving idea of "the great man" [1, p. 192], who is able "to break off old ties based on instincts, a habit" [1, p. 192]. Thus, he runs away from himself, trying to stifle natural feelings, home-sickness, to "cut themselves off" [2, p. 89] from his native land. Each of the characters of the story tries to argue with Balazievich, at the same time disclosing the one-sidedness of his own thoughts. Some characters such as Mr. Crooke and a man with Polish mustache assert false ideas about sympathy for the homeland in the distance. Thereby they justify themselves and their welfare, because it's quite clear that not for the common cause they left their native land; the reason for emigration is their personal well-being. The uncle of Balazievich's wife Elsa believes that German practicality contributes German prosperity more than Maxim's nonsensical nostalgia. However that the German considers spinelessness, Balazievich calls a high Slavic spirit. The hero sees that even his wife's thoughts are limited. She idealizes life in Belarus, dreams "to teach rural girls to sew dresses in a European style" [1, p. 194]. But Balazievich has a nightmare about hunger and poverty in his family in the homeland as opposed to American material welfare. But despite all efforts to break away from Belarus, the nostalgia only grows with time. That's why the final of the story is open only formally: in fact, the hero is declined to the decision to return. Deep inside of him he feels groundlessness of all reservations, even those relating to his children, born abroad (it is no coincidence that they have Slavic names in the story).

The hero of Leonid Andreyev's story also seeks drown out feelings to own country subconsciously. With German accuracy and perseverance the student, nicknamed a foreigner by his mates for his alienation from everything connected with Russia, collects money for the "new", good life in Germany by working hard. In his view, everything connected with his native culture has a negative connotation and personifies a state of chaos, barbarian disorder, and "stark violence and senseless cruelty" [3, p. 310] of the 64th dormitory room which symbolizes the whole of Russia, as opposed to civilized Western culture. As contrasted to Maxim, Balazievich Chistiakov feels a stranger in his own homeland and repudiates it consciously. The circumstances also contribute to this. Strange as it may seem, under these circumstances "worthy aspirations of personality" [4, p. 192] of the character, which researcher L. A. Smirnova mentions, are discovered. Through them the character is represented as the conscious and compassionate person who is willing to sacrifice the most precious things for fairness. Despite physical weakness, he tries to defend the offended unjustly; needing in money, he gives it poor Rajko from Serbia. The image of the Serb as the antipode of Chistiakov is also very important for the story. He is another alien, who sets off the main character's delusions with his love for his small country and anxiety for her unfortunate fate. It is Rajko's sufferings, who sees the national catastrophe of his country and is able to do nothing for it, that help Chistiakov to realize that he can't be happy away from his homeland. He realizes suddenly that it's simply impossible for him to separate himself from Russia in order not to lose something vital. Chistiakov makes the right choice and accept his homeland, realizing that his life path can't be strewn with only happy events.

According to the plot of each of the works, ways of the characters converge in the same direction in the finals of the stories. Have undergone unwillingness to succumb to "the weakness" of the spirit, they eventually find strength in himself to destroy cloud-castle and not to betray himself. Certainly, Balazievich's and Chistiakov's train of thought differs. Andreyev shows the conscious choice of his hero, who is willing to adopt his homeland with its misfortunes and miseries. The image of the Belorussian is represented through the struggle of the mind and fillings, the body and spirit. However, the whole story points to victory of the last one. As Balazievich's love of country is the irresistible feeling, his choice is obvious to a reader.

It is significant that the same principle became the basis for titles of the stories. M. Haretsky calls the Belorussian "the American" while the Russian has a nickname "the foreigner". In fact, the same irony of both authors is obvious. It emphasizes and exposes the fallacy of heroes' desires.

Conclusion. Both writers assert that homeland is the inalienable part of the human sole. Each of the characters seeks his own self-determination. But no matter how the character may want to identify himself with the other people to regulate his existence towards some rational ideal, the writers show that a full life, harmony of body and spirit are only possible in his native land. Thus, the migration matter goes beyond national one, gaining in personal importance.

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METALINGUISTIC REFLECTION ON WORDS OF FOREIGN ORIGIN IN MODERN BELARUSIAN LITERATURE

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The reflections of writers over the foreign language words form a protective mechanism in a turbulent flow of new language units in everyday speech and show the main trends in the development of language in general. Reflection of the writer is a cognitive process leading to reflection on the relationship between content and form and evaluation of foreign words, not only as critical, but also as an important heuristic principle, revealing socio-cultural features of the national awareness in a certain period of time. Writers deserve special attention as their metalinguistic awareness is actualized and linguistic reflection is sharpened because of the specifics of their activity, when language is seen as a "working tool", and the "product" is the process of communication. Besides, the study of metalinguistic reflection in literature reveals the features of public metalinguistic awareness. The aim of this work was to study the idea of borrowing from other languages that is present in public awareness on the basis of prose material.

Material and methods. The research material is modern Belarusian prose. The material was collected by the method of continuous sampling. The descriptive method was used in the analysis of linguistic facts as well as the methods of observation, synthesis, interpretation and classification of the studied units.

Results and discussed. Metalinguistic expressions focus on the units that are semantically and axiologically significant and that are usually a kind of tension in the communication process and require the verbalization of metalinguistic awareness [2, p. 79].

The words of foreign origin, particularly newly recruited into the language, are one of the most obvious sources of such tension and therefore regularly subjected to the linguistic reflection and commenting. Spontaneous understanding of loanwords from other languages can be defined as part of the so-called naive, spontaneous, conventional or folk linguistics [3, p. 363] and may relate to various aspects of the "naive" (unprofessional-linguistic) analysis of words and expressions.

These comments can be estimated to be neutral, showing the fact of using borrowings, the source of language borrowing or the fact of lacunarity: *Апельсінавае дрэўца раскашуе. Шчаслівае сваёй прыгажосцю, яно расце проста пасярэдзіне пакоя, у паціа –* ***адпаведнага паняцця ў нас няма,*** *гэта жылая частка дома пад адкрытым небам, нешта накшталт унутранага дворыка* (А. Брава. Каменданцкі час для ластавак).

Using the general approach to the classification of metalinguistic expressions, proposed by Irina Vepreva [2, p. 105 – 110], among the main types of metalinguistic comments accompanying words of foreign origin are the following:

a) the comments of the dynamic type, reflecting the temporal characteristic of usage of borrowed language units: *Дык вось, у Друскеніках,* ***як цяпер кажуць,*** *фешэнебельным на той час курорце – зрэшты, тады панам усё фешэнебельнае было, – пан, пасаджаны ў клетку, пагрыз аднаму ваўку лапу* (А. Наварыч. Літоўскі воўк).

b) the comments of stylistic type related to the assessment of foreign language words in terms of their stylistic coloring (conversational, colloquial, characterteristic of the speech of particular social groups, etc.), as well as from the point of view of their stylistic appropriateness in different contexts: *Я ўстрывожана гадала, ці ведаў Юрась, хто даваў Стэле наркотыкі? <…> Для чаго Баркун гэта рабіў?* ***Няўжо быў гэтым… Як яго…*** *Дылерам? Дыгерам? Не падобна…* (Л. Рублеўская. Скокі смерці).

c) the comments of derivative type associated with semantic motivation of borrowings, explanation of their inner form in the source language, formal and semantic derivation, for example: *У калысцы заварушылася Карына, я укладваю ў яе ручку віверон – здаецца, менавіта так Феліпа называе бутэлечку з соскай – і раптам слупянею, уражаная жывым прамяністым пульсаваннем чужой мовы:* ***«vivir» азначае «жыць», таму «viveron», пэўна, - крыніца жыцця?*** *Ці можна даць лепшае найменне рэчы для дзіцячага кармлення? (Потым у час вучобы ў школе моў для іншаземцаў, я зразумею, што маё «адкрыццё» было вынікам мясцовага акцэнту: класічнае іспанскае «beberon» паходзіць ад «beber» (піць), а не ад «vivir», але* *прыгажосць гэтай памылкі застанецца са мной надоўга, як, дарэчы, і чароўнае фанетычнае падабенства тых дзеясловаў)* (А. Брава. Каменданцкі час для ластавак). Facing another languages people tend to explain unintelligible words through the already known, and as a result folk etymologies are created. Phonetic similarity between the unintelligible and known words is usually enough for associations to appear, and semantics can strengthen the association.

d) the comments of personal type, expressing personal preferences about the use of borrowings: *Пашанцавала ж прайсціся побач царквы, якую пад склад экс-пра-пры-… **Госпадзе, гэта ж вымавіць немагчыма*** (Л. Рублеўская. Ночы на Плябанскіх млынах).

The comments of personal type are the most frequent and as a rule they express negative evaluation of the words of foreign origin: *Санту Барбару нейкую глядзяць. **Што ж гэта такое?! Імя жаночае, ці што?** Далібог, амерыканцы… І нешта падкінулі ім, каб глядзелі* (Р. Баравікова. Рэфлексія: смерць). *Падумаеш, вучоба! – азваўся весела Янка. – Толькі галаву забіваць усялякім глупствам. Ад аднае лаціны можна ачмурэць. Va-nitas vanitatum! **Фу! Званітуе, пакуль выгаварыш*** (Ф. Сіўко. Там, дзе найлепш). At the same time neutral or positive comments are also possible, though not frequent: *Я разбіраў асобныя словы, якія заселі ў памяці з оперных арый: “далорэ” – здаецца, боль… “падрэ” – бацька альбо, можа, святар, “рагацца” – хлопчык… <…> Не стану хаваць, уяўленне малявала салодкія рамантычныя сітуацыі, у якіх адну з галоўных роляў выконвала тая, што называла мяне **смешным словам** “рагацца”* (Л. Рублеўская. Ночы на Плябанскіх млынах). So the desire to preserve national linguistic identity in the context of globalization is characteristic of the Belarusian mentality and encourage people not just to borrow lexical items, but also to formulate their attitude, that using the term of A. Wiezbicka, can be defined as “linguistic self-defense” [1]. At the same time the native language is usually perceived as the most beautiful or precise.

Conclusion. The increasing internationalization along with other factors (such as changes in the social, political and economic life of Belarusian society, strengthening of personal principle, the overall communicative democratization, etc.) exacerbate metalinguistic reflection on the words of foreign origin and increase the frequency of metalinguistic comments, including evaluative interpretations in the Belarusian-language discourse. This is revealed in modern Belarusian prose.

“Naive” speakers’ reasoning may diverge from the scientific and linguistic description. The study of conventional metalinguistic reflection shows its unsystematic, fragmented and inferiority character because of the shallow penetration into the essence of language process, lack of criticism in respect of its own products, emotionality and bias. On the other hand, ideas that are represented in the naive-language picture of the world, are not primitive, sometimes they are as interesting as scientific ones for they reflect the collective experience of the people.

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TRANSLATED POETRY COLLECTIONS OF AMERICAN ROMANTICISM WRITERS: EDITORIAL PERSPECTIVE

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The importance of the study. There is a substantial increase of interest in problems of cultural interactions in the contemporary world. Today the book is considered to be an element affecting global social and cultural development; the book is shown to be an agent of a specific culture and acquires features determined by the traditions of that culture. These factors actualize the meaning of the translated book in dynamically developing intercultural communication processes. The translated book is a “bridge” between two cultures – the one in which the book has been written and the one into whose language the book has been translated.

American Romanticism literature like no other reflects the state of American culture and the ideas and expectations of Americans while the American nation has yet been forming. Today, when the USA is one of the most powerful nations in the world, examination of the origins of the American nation can help find answers to essential questions.

The culture in which an edition has been published plays an important role for the better perception and understanding of any kind of writing. The principal components of that culture are the level of back matter preparation and art work of edition. Thus an editorial analysis of these components is key to a deeper understanding of both works by a specific author and the common culture of the USA.

The aim of the study – is to perform the editorial analysis of translated poetry collections of American Romantic writers addressed to the Russian-language reader.

The goal is split into the following tasks:

– to analyze concepts concerning the typology of literary editions, elements of back matter and art work of editions;

– to estimate the results of editing and publishing preparation of translated poetry collections of late XX – early XXI centuries;

– to work out recommendations for editing and preparing translated poetry collections for publishing .

Object of study – translated editions of American Romantic writers.

Subject of study – translated poetry collections of E. A. Poe and E. Dickinson located in the National Library of Belarus.

Material and methods. The methods employed are: comparative analysis, the synthetic method, the descriptive method, editorial analysis, the bibliological functional approach. The study is based on works of such theorists and experts as I. E. Barenbaum [1], A. A. Belovitskaya [2], L. I. Zimina [3], S. A. Karaychentseva [4], A. E. Milchin [5] and others.

Scientific novelty of the undertaken study conclude in the fact that the translated collections of American Romantic writers have been analyzed in the context of editorial preparation for the first time, particularly the collections of E. Poe and E. Dickinson.

Practical relevance. The materials of the study have been included into the course materials for the "Editorial preparation of works of fiction", particularly into the lecture and seminar materials on "Editorial work on translations of fiction", as well as into the course materials for "The technology of publishing" course.

Results and discussion. 1. At present there still is some disagreement between researchers concerning questions of editions’ typology and specific elements of back matter. Generally speaking, there are three types discerned in the typology of editions: scientific, popular-scientific, popular; but some researchers also denote an academic type, while others include it with scientific type. Concerning the back matter of an edition, researchers don’t concur regarding necessity or optionality of accompanying articles, as well as on the difference between preface and introductory article functions. There is still a question whether comments and footnotes are identical to each other and about the classification of comments.

2. Editions published before 1990 can be distinguished by an elaborate critical apparatus that always includes footnotes or comments. Typography dominates book design.

3. Editions published in the last decade of the XX century are notable for a smaller volume of back matter; the quantity of commented editions decreases sharply. Graphics are widely applied in the design of a book's inner elements, whereas in the design of outer elements typography continues to dominate.

4. The back matter of editions published in the first decade of XXI century changed insignificantly. But there is a tendency to decrease its volume and to produce editions without an elaborate critical apparatus. Decorative design dominates in both inner and outer elements of the book.

The editorial preparation of translated poetry collection back matter exhibits the following tendencies:

– decrease of back matter volume;

– not taking into account the necessity of commenting particular written work\works;

– non-interaction between edition structure and running titles (lack of running titles in editions with a voluminous structure and the presence of a permanent running title in editions with a simple structure);

– back matter not being prepared rigorously enough.

Art work exhibits the following tendencies:

– a movement from typography to illustrative-typography which is associated with a change of binding materials and the development of book craft;

– neglect of flyleaf design;

– inattention to consistency between design elements and book content;

– neglect of some rules of page makeup.

Conclusion. Translated literature plays an important part in social progress, interaction with other cultures and culture cross-fertilization. In addition, translated books of American Romantic writers allow understanding American culture more deeply because it is Romanticism that gives birth to the independent development of American culture and literature. As the USA is one of the most powerful nations today, turning to the roots of the American nation can help us in solving present problems.

The analysis of back matter and artwork of translated poetry collections allowed me to prepare the following recommendations on their editing and preparing them for publication.

Recommendations on back matter preparation:

1. Back matter development should be conducted with due account for collection type, e. g. its end use and presumed audience.

2. The annotation of any kind of collection should be informative and comply with state standard.

3. Information on edition structure and special features should be placed before the main text itself.

4. A collection composed of at least several sections would better be supplied with running titles.

5. Volume of accompanying articles should not scare away the reader. If an introductory article occupies the quarter of a book, a reader will definitely skip it.

6. A footnote can be recommended to explain of phrases and words in a foreign language or just requiring an explanation.

7. An editor should take into account particular features of the book and its content while preparing supplement materials.

8. Arrangement of back matter elements should be intuitive.

Recommendations on collection design:

1. A poetry collection is usually a portable book, so the optimal format of a collection is $70 \times 108\ ^{1}/_{32}$.

2. An editor and art editor should not forget about style and temperance in design.

3. An editor should remember about the flyleaf as a element of design. An editor may change the impression made by the book just by choosing colored paper for the flyleaf.

4. An editor must consider two main aspects: the correlation between design and content of a collection and the correlation of design elements inter se.

5. The use of end-to-end design elements and page space organization are design instruments, too.

6. It’s necessary to use the capabilities of typography, especially taking into account the development of the digital fonts market.

7. It’s better not to overload an edition with graphic elements, or the form may distract the reader from the content.

8. Design elements should match the main idea of the book.

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CONCEPT OF COMMUNICATIVE SPACE OF A NEWSPAPER AND ITS COMPONENTS

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The category of communicative space is investigated in a number of sciences – philosophies, psychology, sociology, culturologists, etc. In linguistics this phenomenon began to be studied rather recently and it is considered one of the most unstudied. The concept of communicative space in media linguistics isn't described at all, and that is why relevance of the subject chosen by us is caused.

Material and methods. As the presented work has theoretical character the main material of research is a scientific philosophical, sociological and linguistic literature. As methods of research we used general scientific methods, such as the analysis, and also linguistic methods in particular, a method a discourse analysis.

Results and discussion. Fundamental for all directions of studying of communicative space is philosophical understanding: set of human activity makes vital space or a spatial picture of the world in which there is a society. According to Yu.M. Lotman, a phenomenon of a spatial picture of the world is many-dimensional as it is connects in its structure a mythological component, scientific representations, household "common sense", etc. "Thus at an ordinary person these (and some other) layers form heterogeneous mix which functions as something united<…> As a result, difficult, being in the continuous movement semiotics mechanism is created" [1, p. 296]. This anthropological approach widely extended in the humanitarian science of the second half of XX – the beginnings of the XXI centuries. Then figurative idea of space as a kind of measured place, a certain order of things, and also communicative system was fixed in a scientific paradigm.

Throughout philosophical traditions the space in sociology is considered as a sphere in which social, cultural, spiritual processes proceed. A sociocultural approach was spreaded in sociology, within which the term "communicative space" is replaced with the concept "sociocultural space" – the specific existential integrity which used as a result "of genesis and functioning of culture in interrelation with social parameters" [2, p. 14].

It is necessary to recognize that the sociocultural space is a synonym to the language concept "communicative space" which is actively cultivated in communicative linguistics and a pragmalingvistika. In the theory of communication this phenomenon was started treating widely, as "the territory, sphere within which there is an interaction" [3, p. 14].

Thus, the term "communicative space" has interdisciplinary character and that is why is treated ambiguously. The communicative space is considered as a special environment, filling and functioning of which directly depends on area of research in which it is used.

Even so fluent analysis of the concept indicates its complexity and variety. Having analysed various approaches to this phenomenon, we offer the understanding which is most corresponding to our approach. We are fully agree with professor T.A. Vorontsova that the category of communicative space in the theory of a lingvopragmatiks and communicative linguistics is defined as "the speech situation including roles of somebody speaking and listening, characteristics of time and a place, the rule of coordination of these aims within the cooperative principle, the rule of transfer of a role of speaking from one communicant to another, etc." [4, p. 13].

The communicative space of the newspaper we understand as sphere in which there is an information exchange. This is set of spheres of communication in which the language personality can realize the speech intention according to the rules and norms of communication accepted in this society. The communicative space of the newspaper is a condition of communicative system of mass media, set of genres, their language markers, means of representation and functioning of key concepts. These are extremely important aspects because through communication sociocultural information is created, stored and transmitted from generation to generation, "sociocultural space" made (under "sociocultural space" we understand that space which is created in consciousness of reader's audience by means of verbal and nonverbal means). Therefore, the communicative space represents sets and result of social communications.

We suggest to differentiate two components of communicative space of a newspaper: physical (real) space and social (virtual) space. The physical space of a newspaper is a dynamic and complete phenomenon, a material form created by a person. Here the system of genres enters first of all. The genre is most formalized, the speech behavior of people is regulated by a set of public norms, installations, contracts, customs and traditions. Therefore at such level of communication interests of an individual are in the subordinative relation to interests of society.

Communicative space of a newspaper reflected all variety of practices, used by people in the course of activiti: economic, political, information, etc. In order not only to create, but adequately interpret a newspaper text, the reader has to plunge himself on a certain sphere, feel, according to B.M. Gasparov "a wide spiritual picture of the district": "In communicative space, along with the genre characteristic, such properties of the language message as its "tone", the subject contents and that general intellectual sphere to which this contents belongs are joined" [5, p. 295].

Conclusion. From the analysis of literature on a problem and from own supervision becomes obvious that the communicative space in general and communicative space of the newspaper, in particular, can't be structured accurately owing to its dynamism, but it is possible to simulate that is paramount important for our research. In communicative space of a newspaper we consider as significant the following spheres:

1) various discourse conventions, first of all genre;

2) in our research speech behavior of communicants in different genres is in interview which is interfaced to impact on the reader as the third participant of communication; a journalist creates and controls communicative space of interview. Entering communication, each of participants possesses his own vision of process of communication, his role in it, has the valuable reference points and own ideas of a conversation subject; thus the communicative space – a zone of mutual responsibility as a journalist, so his interlocutor, and speech behavior of communicants is an instrument of formation of communicative space;

3) the cognitive sphere which includes the key concepts which are actual for this society. The surrounding reality presented by a set of the unique phenomena, subjects, objects which function in language consciousness in the form of concept's images is reflected in the newspaper text. Formation of concepts happens in the course of social activity of the person and depends on human experience which he gains in the different ways and first of all in communicative activity. Therefore we carried key concepts which ideal image is formed by the newspaper directing perception on the part of reality defined reflection to communicative space.

Thus, we consider a genre aspect, the analysis of communicative strategy and tactics, and also the key concepts represented in a newspaper as an actual research task in studying of communicative space of a newspaper.

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FORMS AND METHODS OF WORK ON FORMATION SPEECH ETIQUETTE AT THE RUSSIAN LANGUAGE LESSONS

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The aim of using diverse and fascinating forms of work at lessons by a teacher is to make lessons different, not alike. Taking this fact into consideration a teacher tries different forms of conducting a lesson, making it as much exiting as possible by implying different game moments. They may be subject-role and theatrical games, all kinds of gaming and life situations, entertaining stories and creative conversations, and also constant training, consolidation and practical application of the rules and regulations of speech etiquette for children.

Material and methods. It's a game that allows to organize the exercise children in forming the skills of speech etiquette more effectively. Firstly it's necessary to discuss the mode of the game with children, paying attention to the rules observed earlier. This indicates what is already learned and what is left to pay attention to. The rules are being discussed and explained while communicating with children by the use of literary texts, such as fables, stories, poems. It's also possible to act out some of them. The teacher strikes a balance [3, p. 18].

A younger pupil should have to understand the opportunities of the language, so called means to express politeness. Training formulas of speech etiquette in primary school involves the formation of pupils' knowledge in the sphere of verbal expression of politeness in the Russian language. It also teaches how to correlate verbal expression with behavioral. In order to master these important etiquette skills it's necessary to create speech situations, as well as complication of dialogues on the following topics: 'On the bus', 'With friends after school', 'At home in the evening', "At the lesson", "In the shop". Such speech situations will help children to master the etiquette skills, choose appropriate forms of greeting, farewell and also use the forms of pronouns, verbs, signs of politeness properly. A teacher focuses on communication tone, intonation, gestures, demeanor. This is achieved in the course of explanation, consolidation and using speech formulas of speech etiquette in daily life. Literary examples are also of great help.

Usually a child at the age of 6 or 7 refers to a stranger by using the pronoun 'You'. That means that in many cases (but not, certainly, all) a first-former chooses correct, appropriate to the circumstances formula of speech etiquette.

Acting out speech situations at the Russian language lessons moulds the culture of verbal communication not only with adults but also with their

peers. Therefore, in working with children it is advisable to play speech situation to develop the culture of verbal behavior.

'In the store'

One elects a salesman, a customer and a cashier among the pupils. A customer enters the shop, speaks politely to the salesman, thanks him, because all the goods are shown to him. Then he communicates with the cashier.

'Words-Greeting'

Situation: You enter the classroom, and see that the teacher is talking to someone from the parents. How will you greet them? Will you say, 'Hello, Helena!'? How to say hello?

'School Library'

You want to become a member of the library community. Ask for an interesting book. Do not forget the words that can help you with your request. Tell polite words, that should be said before leaving.

Results and discussion. As a result, children learn the six rules that allow you to express respect for the other person:

Rule 1. Be considerate to others.

Rule 2. Memorize the names of the interlocutors.

Rule 3. Use the treatment for them suitably.

Rule 4. Be polite and friendly. Encourage others to talk about themselves.

Rule 5. Trust the interlocutor and tell the truth.

Rule 6. Refrain from rude criticism.

It worth remembering that a speech etiquette of the teacher, the observation of its norms are of great importance. A teacher should be kind, polite, responsive and attentive to children. It's not enough to speak about polite formulas and speech etiquette. The upbringing of speech politeness means, first of all, respect for other people, as well as kindness, sympathy and charity. One of the rules of speech etiquette reads: 'Ask little, talk a little, listen more' [2, p. 108].

Conclusion. While working with children of this age, it's necessary to take into account the fact that training speech etiquette must be adequate to different situations they often find themselves in, such as: at school, out-of-doors, in public places. Specific rules will be repeated necessarily. It is obligatory in order to teach a child to exercise the same rule in different situations [1, p. 47].

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PECULIARITIES OF FUNCTIONING OF INFORMAL FORMS OF NAMES IN THE REGIONAL NEWSPAPER AND JOURNALISTIC DISCOURSE (based on the interviews and newspaper articles from Vitbichi and Vitebskiye Vesti (Vitebsk News) newspapers)[1]

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The informal anthroponymy is an integral part of communication. “Characteristic features of official, scientific, colloquial and fiction styles are closely bound which, in turn, is reflected in the special use of onyms in newspaper texts" [1, p. 41]. So far there aren’t enough publications devoted to functional peculiarities of anthroponyms in journalism. Among the available ones one can mention E.V. Kortunova's works [1], L.A. Artyomova [2], L.S. Vasilyeva [3], etc. Besides, the place of name forms in a regional newspaper and journalistic discourse hasn’t been discussed yet which makes for the ***topicality*** of our research.

The purpose of the issue is to determine structural-and-semantic and stylistic peculiarities of functioning of informal name forms in the regional newspaper and journalistic discourse.

Material and methods. Informal anthroponyms recorded in the interviews and newspaper articles from Vitbichi, Vitebsk News over the years of 2013 and 2014 (100 units) were used as the material for the research. The following ***methods*** were used: structural, semantic and stylistic analysis.

Results and discussion. The newspaper and journalistic discourse implies precise person identification, so the use of informal anthroponymy within this discourse is a rare phenomenon. In the studied newspapers, interviews and articles are published in the Russian and Belarusian languages. There have been recorded altogether **6** Belarusian units, which serve to convey ethnic and cultural information. For example, the anthroponyms *Yuras (Юрась)* and *Marysia (Марыся)* are assumed names of the actors playing the role of hosts of the holiday Kupal’e (Купалья). Among these forms there’s one patronym which is used to call people of older generation (Васіль Зянькоў, or *Пятровіч*). By means of this the author of the article emphasizes hospitality of the farmstead host.

Involvement of an informal name presupposes reader’s awareness of certain denotational information. The peculiarity of an informal name list of the regional press is that the use of well-known “precedent” names is rare. So far only two such cases have been recorded. In the first case, *Sasha Rybak’s* childhood is mentioned in the article (Alexander Rybak is a Norwegian singer of Belarusian origin, a winner of the competition “Eurovision-2009”), in the second case the author of an article tells about Mitiay (*Митяе*) (Granddad Mitiay *Дед Митяй* is a character from the movie “Love and Pigeons”). A rare use of a two-component name formula is also worth noting (an informal anthroponym + a surname) which is used to convey a gentle attitude to children and to the youth, and also to describe different facts from the life and childhood of Vitebsk heroes (9 units): “A lucky star of hope has been kindled for *Sasha Minenko*” (Ярко зажглась звездочка надежды для *Саши Миненка*) [4]; "Together with the friend *Lisa Maslovskaya* she helped to prepare documents for the regional military registration and enlistment office (С подругой *Лизой Масловской* она помогала оформлять документы в районном военкомате)" [5, p. 15]. The surname that goes with an informal name can be used to emphasize child’s desire to become mature: "Both *Olya Yaskevich*, a pupil from the fifth grade, and her mother were quite satisfied with the quality of suits for girls offered by the Unitary Enterprise “Sennenskiye Promtovary”, but they questioned the colours of the material (А вот пятиклассницу *Олю Яскевич* и ее маму качество костюмов для девочек, которые предлагало УП «Сенненские промтовары», вполне устроило, но вот расцветка вызвала сомнение)" [6].

The main group of informal forms of names in one- or two-component formulae is formed by hypocoristics (**60** units). Besides naming children by their parents in interviews, hypocoristics can be involved to show an opposition of two anthroponymic systems, both foreign and Russian ones: "A second employee’s neighbors named their daughter Elsa though their parents have simple Russian names – *Katya* and *Vasya* (А у второй сотрудницы соседи назвали дочку Эльзой, хотя у самих родителей простые русские имена –*Катя* и *Вася*)" [7].

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The lack of denotational information or need to emphasize social features when revealing a character's image in narration is compensated by the use of a qualitative form of an anthroponym (only **37** units). **54%** of qualitatives possess a formant **-ша** (*Sasha*, *Masha*; *Саша*, *Маша*). Suffixal forms can be used to express children's speech: "Aunt is called *Masha*, she promised to give me toys as a present (Тетю *Машей* зовут, она мне игрушки обещала подарить)" [8]; to express an old-standing friendship: "I have known *Lesha*, Marina's husband, as well as her, since school (Мужа Марины *Лешу* знаю, как и ее, со школьных лет)" [9], to show the character's social status of an article: "Finally *Edik* fuelled his "child" and drove along the village, scaring hens (В конечном итоге *Эдик* заправил свое детище топливом и проехался по деревне, распугивая кур)" (about a mechanic of a specialized college) [10, p. 5]. The names changed for ethical reasons in narration gain qualitative features, representing interpersonal relations among characters: "*Kolka* only groaned and didn't even try to fight against me (А *Колька* только стонал, воевать со мной больше не пытался)" [11]. A convergent name, a name form similar to an appellative by outward features, has also been recorded. The convergent name has its aim to convey a tragic nature of the situation: "Following an obscure impulse, she shouted: "*Angel*, the car!". <…> The girl was growing up as an unusual child – she was even called not *Angelina* but *Angel* (Повинуясь неясному порыву, крикнула: «*Ангел*, машина!». <…> А девочка росла необыкновенной – ее даже звали не Ангелиной, а *Ангелом*)" [12].

Conclusion. Thus, one can name such peculiarities of an informal name list of regional newspaper and journalistic discourse as a rare usage of precedent forms and two-component names; predominance of hypocoristics. Informal name forms are used in articles and interviews to convey a social description of characters (age, place of residence, job), as well as their relationships.

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TYPOLOGY OF ALMANAC "DVERI"

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Digital Almanac "Dveri", dedicated to the theatrical life of Belarus exists since December 2010. Originally almanac was dedicated amateur theater, but since the first issue of the increased coverage of themes. So for 4 years and 9 rooms almanac be able to grow with a 76-page publication to 212-page publication with the updated site Blogs and posters. The rapid growth of the materials and their thematic variety provoked this study. The goal of publication to identify typology and through it find almanac`s strengths and weaknesses.

Material and methods. Subjects: 9 edition anthology "Dveri", published in the period from 2010 to 2014 years. Methods: a comparison, synthesis and analysis of the editorial.

Results and discussion. Typology determines the place of publication in the media, it also contributes to their interaction, development of healthy competition, indicates the place of media within the geographic, information, economic and social space. The correct definition of typology - is the correct positioning of publication in the media market. The system unit is a printed periodical magazine (newspaper).

The main features of typology media in journalism theory: audience, thematic focus of the publication, purpose, periodicity. Sufficiency of those positions claimed soviet scientist A. Akopov and some modern scholars, one of which is T. Silinsky-Yasinskaya with her work "Typology of modern Belarusian magazine subscriptions." In our study used their achievements.

Typological features are combined in the following groups: typyforming, secondary, formal.

Typoforming signs: publisher, thematic focus, the reader address. Authority to publish in this edition belongs to theater movement "Dveri". The movement has existed since the fall of 2010 in Minsk. His mission are coordination and development of non-professional theater and the creation of an information platform for the communication of alternative theater bands and spectators. At the moment, the movement is a voluntary non-profit alliance of young people of different professions and disciplines, interested or involved in different kinds of theater. Thematic focus of publication (or A. Akopov`s goal and objectives) to illuminate the life of alternative theaters. Objectives: To give the theater to express themselves to their audience, expand the circle of "acquaintance" with theater groups, to create a "chronicle" of Belarusian alternative theater, training. The reader address: creative young people (16 to 35 - those directly involved in the theater (amateur theaters, students, alumni theater schools)) and creative people of other areas.

The secondary typological features include: group of autors, structure, publications, articles genres. The authors of the "Dveri" are: teachers, professionals, theorists, practitioners, professional journalists, students. Important to mention that the authors have no fees for work. The only young enthusiasts and more qualified experts consider this initiative useful for Belarusian theater community as a whole. Structure of edition constitute publication as permanent and temporary headings. Permanent (present in all 9 rooms) include: Chronicle, Behind the scenes, The dialogue, At center. Variables (appearing only once or periodically): Lectures, 10, Library Materials, Speakers, Art Scene. Genres materials edition: information, artistic, journalistic, dramatic works.

Formal typological features: appearance, frequency, volume, budget. Appearance: variety of fonts, design elements, a significant number of illustrations, PDF, internal links. Frequency: 2-3 times a year. Volume: 150 - 200 pp. (A4). Budget edition: no.

Conclusion. There are no similar publications in the Belarusian book market. In the absence of competition almanac is at risk of losing focus, and also has the opportunity to claim a monopoly.

So there is a risk can be defined as a mismatch of tasks goals (not clear thematic focus). For example, the problem of "learning", which means to provide educational materials - does not meet the objectives to cover the theatrical life of the city (country). The goal will be achieved only if the educational materials will be explored in covered surrounded, not promoted independently by almanac. Without a clearly thematic focus Almanac positioning itself on the market - can undermine the trust of the audience.

How to stylize a universal language and content of training materials - that they were equally interesting for a 20 year youngsters and 35 skilled amateurs? What are the characteristics is compose portrait of the reader? Staging in the description of the target audience the concept of "do theater" - excludes whether theatergoers? If yes, for whom the almanac exists, in addition to other theaters? Obviously, the target audience of publication needs improvement and is now one could argue that useful audience ща "Doors" is a participant of the festival with the same name and movement.

The prevailing social conditions (the birth of theater movement "door" and a number of other festivals, as well as the formation of the theatrical movement in the cultural life of the city) - are sufficient for the emergence of specialized periodical edition. Such publising activity is textbook example - according to the ideas about the origin of periodicals A.I. Akopova.

Such ambiguities (as vague thematic focus and formal target group) in typology - identified. Solving them will contribute to the future prosperity of the almanac. The analysis of other typology items at the moment is unnecessary and not cost-effective, although it is worth noting the significant contribution of the writing team.

ANTHROPONYM-ZOONYM: SPECIFICITY OF THE INTERACTION

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The zoonyms of Vitebsk region have not been subjected to special research, despite the fact that their studies and thematic analysis allow defining the boundaries of the zoonimicon of this territory, to analyze the principles of pets' nomination, to identify the semantic peculiarities of zoonyms, to determine the influence of traditions and trends, concerning the choice of nicknames.

Zoonimnaya vocabulary deserves a special attention because nicknames appear and function in different social and historical conditions and carry very important information about a particular ethnic group. The zoonyms have a valuable importance for the studies of Vitebsk citizens' perception, because they fully reflect the comprehension of peculiarities objective reality phenomena. The analysis of the obtained material gives us a possibility to understand which objects and phenomena of material and spiritual life are important for our society.

In addition, the relevance of the subject is determined by the fact that at the present stage of society development urbanization has acquired high rates, has dramatically increased the number of urban population, in large cities a «isolation» from nature causes need for the creation of an animal world.

All this implies the existence of significant differences between urban zoonimicon and rural zoonimicon, however, mainly, the former has been studied.

Despite the prevalence and certain universality of zoonimic vocabulary, research has a private and limited character because not all the nicknames have been recorded in official documents. In this regard, a significant layer of zoonyms cannot enter the field of explorer's vision and just can disappear with the death of pets.

The purpose of this research is to identify the specificity of the interaction zoonyms with anthroponyms on the lexico-semantic level.

Materials and methods. The material of this research has been based on the collection of the author's cards, numbering 1051 units and compiled as a result of:

a) the survey, which was conducted among the residents of Vitebsk and the Vitebsk region;

b) the collection of the material recorded in the electronic data bases of the vet clinics of Vitebsk and the Vitebsk region.

The scientific novelty is determined by the object, which hasn't been thoroughly researched by Belorussian linguists. From this it follows that zoonyms – the nicknames of pets – are a valuable material for linguistic research, because they are the result of a researcher's onomastic long-century work. This is the most ancient layer of words, which have common slavonic roots. The collection, systematization and studies of this valuable material for linguistic science, refers to the number of theoretically and practically important objectives of modern onomastics.

The theoretical basis of this research has been the works by native and foreign linguists. To achieve this goal have been used descriptive-analytical, comparative methods, elements of quantitative and lingva-psychological methods.

Results and discussion. Most of the zoonyms are motivated Russian anthroponyms. At the same time as zoonyms can be names of owners, famous historical figures, composers, artists, athletes, models and others (for example, **cats** – *Pushkin*, *Azazello*, *Alice*; **dogs** – *Hamlet*, *Totto*, *Adolf*, *Caesar*, *Tyson*, *Naomi*; **decorative rabbits** – *Simba*, *Roger*, *Venja*, *Adele*, *Lara*; **horses** – *Tarzan*, *Napoleon*, *Alex*, *Masha*; **bulls** – *Bonya*, *Yasha*, *George* and others.

In the villages people often call dogs, cats, horses and cows using people's names – *Raika*, *Kuzma*, *Ksyusha*, *Vaska*, explaining, that they always do it, that such nicknames are always at the hearing, easy for remember and sometimes can indicate owners of this pets.

In the cities people usually give their pets fine, rare nicknames, because they aspire to distinguish their pets from others and show their importance for owners – *Mary*, *Felix*, *Chanel*, *Dolly*. It's an interesting fact that a certain part of Russian full forms of anthroponyms which are used for pets' naming, rarely used for people's naming – *Ivan*, *Svetlana*, *Glafira*, *Lyudmila*, *Anfisa* and others. It is a tradition when people don't want to hurt their close people calling their pets names of their friends, relatives.

Perhaps, a massive infiltration of anthroponyms in this zoonym's class we can explain their functional proximity. Many researchers say that many nicknames were formed from people's names [1, 2, 3]. As anthroponyms, zoonyms have all basic functions of proper names: nominative, differentiating and others. Nicknames usually perform a vocational function. When zoonyms perform this function, they, as a rule, are repeated, like double words – *Vaska-Vaska* and others [4].

Vitebsk's citizens often give their pets heroes' names of different cartoons, movies, TV series, etc. but not only usually transfer this hero's name in a zoonym's class and they notice typical characteristics of their pets with a hero of a certain movie: a **dog** *Mukhtar* (devoted and affectionate), a **cat** *Leopold* (good and obedient), a **hamster** *Dale* (active and curious) and others.

According to our material, «exotic» nicknames are often used for naming thoroughbred pets. You should pay attention that people give their preference foreign nicknames (*Jessica*, *Jack*, *Sherry*, *Mary*, *Rem*, *Richard*, *Tom* and others), which can easier animalservices without causing undesirable associations. But we have several Russian anthropozoonyms, which are widespread (for example, *Grishka*, *Raika*, *Sveta*, *Katya*, *Maya*, *Vaska*).

Traditional nicknames of pets occupy a special place, including such nicknames as for **parrots**: *Kesha*, *Gosha*, *Chica*, *Rio*; **dogs**: *Jack*, *Bim*, *Rex*, *Naida*, *Palma*, *Polkan*, *Umka*, *Mukhtar*; **cats**: *Barsik*, *Vaska*, *Murzik*, *Murka*, *Tim*; **cows**: *Zorka*, *Chernushka*, *Venus*, *Milka*, *Rose* and others, which show a main role of different traditions in our lives.

Zoonyms as anthroponyms in the process of functioning can make simplified and transformed forms, which function with official passport nicknames. For example, a dog has such official nickname as *Weiss*, but soon his owners began to call him *Vaska* at home.

Conclusion. Investigated material showed that the most popular principle of nomination is naming pets using really existed or existing people's names (actors, writers, historical figures, famous athletes, composers and others) and it is not a coincidence: zoonyms can reflect our reality. Changes in the semantics of nicknames can say about the changes in society in general. In addition, it allows to conclude that a close interaction of this onomastic layers on the lexico-semantic level.

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NAMING OF THE MAIN CHARACTER IN THE NOVEL BY B. L. VASILIEV « HIS NAME WAS NOT LISTED»

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Poetic onomastics is one of the rapidly developing areas of the study of proper names. In recent years, linguistic tools are especially intensively studied in the artistic texts. In result the attention to the functioning of «poetonim» as one of the important elements of its structure is increasing. The study of poetonims helps better to understand the author's individual perception of events and facts described in fiction, «creative laboratory» of a poet or writer. The Vasiliev's novel «His name was not listed» is traditionally analyzed in the ideological direction of the content. The onomastic aspect that is very important for the reader, almost is not considered, which makes our research very up-to-date.

The purpose of the work, therefore, is considering the naming the main character, their role in the implementation of its image.

The research is based on the novel by B. L. Vasiliev «His name was not listed».

Material and methods. The paper uses statistical, comparative and descriptive methods.

Using the method of continuous sampling, we have compiled the frequency file of naming of the main character: 6 onimovs and 1179 word forms.

Results and discussion. From the first lines of the novel, the author acquaints us with his hero: «For all his life Kolya Pluzhnikov had not faced so many pleasant surprises as he got during the last three weeks. He had been long waiting for the order to award to him, Nikolai Petrovich Pluzhnikov, a military rank, but after the order pleasant surprises showered in such abundance, that Kolya woke up at from his own laughter» [1, p.309]. Thus, already in the beginning of the novel Vasiliev uses different forms of naming, making the installation for the reader for the subsequent stages of the development of the main character.

As famous researches of onomastics noted the model «name + surname» is typical of the military environment and the using of the partial name indicates the age and status of the named. When it is said about the assigning rank of the protagonist, the author uses a trinomial model of naming-Nikolai Petrovich Pluzhnikov, thereby showing the growth of the main character in the military environment. It should be marked, that «usually patronymic is added to names, when the grows more mature, acquires a status in the society, but not in the young age» as it is indicated by Suslov and Speranskaya [3, p.152].

When in the context of the book it is referred to ordinary, non-military things, the author calls him just Kolya, because in such moments he is nineteen years old, full of energy and hope and without any military and life experience.

According to the dictionary of Russian personal names by N. A. Petrovsky, the name Nicholas is derived from the Greek name Nikolaos, where "nike" – victory and "laos" – people, which means "conqueror of nations" [2, p.166].

Taking into consideration the national corpus of the Russian language during the period from 1940 to 1950 the name «Nicholas» was quite popular. The peak of its popularity was in 1941 and had 113, 86845 consumption by 1 million word forms. It may be connected with the same name of Saint Nicholas, who became famous as a reconciler of rivals during his lifetime, a defender of innocent prisoners and deliverer from death in vain.

Russian surnames (like surnames of any other nation) constitute an encyclopedia of the mode of life, history and ethnography. In their bases they keep the memory of the events, objects and phenomena common of the epochs when they were created [3, p.174]. The origin of the surname Pluzhnikov, is mostly connected with the human activity and is derived from nicknames Pluzhnik (which belongs to the so-called «professional» naming). In the old «plugra, plowshares, tillers» were called pluzhnikami and it was formed by the adding to the root-pluzh the suffix-nick, pointing to the doer.

For the transmission of the interpersonal relationships of the characters of the novel the author uses various derivative forms of the name Nicholas.

Brief (hypocritically) form is mostly often used by the author himself – 246 tokens. Stylistically neutral naming is specific only for the first part of the novel. Thus, Vasiliev distinguishes peacetime and war and he draws our attention to the young hero and his inexperience in military affairs.

Being alone with Pluzhnikov the librarian Zoya says: «You did like me, didn't you? Say, Kolya, did you like me?» [1, p.312]; the commissioner, referring to the main character, being alone with him reports that «… you'll have to return the book to the library, Kolya. You'll have to!» [1, p.314].

Emotive appeals of the main character's sister to him: «Kolya!, Kolechka! Kolka!» [1, p.321] and his mother's words: «— What do you mean, Kolyusha Wali not remember?» [1, p.322]. As we can see, the use the form name with an affectionate diminutive suffixes –echk- and –ush- and reduced spoken colloquial suffix –k-. Such forms of the name are typical of informal situations, with friends, at home.

And, finally, appeals of Myrra, in which you can clearly see the personal attitude to the main character: «He withdrew the palm and raised the gun, minding that the barrel rests against the heart… —Kolya! Kolya, don't! Kolechka, dear! If she had shouted any other word, even with the same voice, rining from fear. Any other word and he would have pulled the trigger. But what she had shouted belonged to the different world, were there was peace, and in this place there could be no woman, who could shout his name so dread fully and so appealingly» [1, p.430].

Conclusion. So, as it was shown, the naming of the main character using his name mostly often occurs in the text of the novel – 620 tokens. It is used rarely, except in the conversation with the superiors, with the addition to the name of the title or status: «and here we are asking you, comrade Pluzhnikov, to help us to deal with there possessions», — says the regimental commissar [1, p.311]. Appeal by the name is a characteristic of the period of hostilities. It seems to us that it shows the command tone of the conversation, formality and discipline.

Thus, we see that the naming of the main character of the novel by B. L. Vasiliev «His name was not listed» – Lieutenant Pluzhnikov, helps to express the ideological and thematic plan and organize the structure of the text.

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THE SEMANTIC ASPECT OF TRADEMARKS OF CONFECTIONERIES (ON THE MATERIAL OF GERMAN)

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The development of commodity-money relations in the modern world has led to increased interest in the trademarks as a means of individualization of produced goods and services. The urgency of our study is caused by extralinguistic (appearance of new names in the sphere of trade, the use of brand naming recommendations and the focus on commodity-money relations) and by linguistic reasons (the need to analyze the existing trademarks considering their cultural identity).

The aim of our study is to analyze the semantics of confectionaries in Germany.

Material and methods. Theoretical and methodological basis is the works of N.G. Mordvinova, T.A. Soboleva and A.V. Superanskaya, N.A. Stadulskaya, The aim and objectives of the research led to the choice of methods: synchronous-descriptive method, method of qualitative analysis. The material is the names of confectionery in Germany, which were collected by the method of continuous sampling from different sources. The total number of analyzed units is 550 items. The gathering of the material was conducted in 2014.

Results and discussion. Trademark is a special symbol of marketable property, indicating who owns the exclusive right to use this product [2, p. 15]. As a rule, trademarks are created from ancestral morphemes on structural patterns of word formation of native speakers, but there is a need to use the brand naming recommendations, because sometimes trademarks are the main motive for the buyer to purchase some goods [3, p. 162]. Vocabulary, acting as a source for the naming of confectionery in Germany, can be grouped in several categories in the language system: names-anthroponyms, names-toponyms, names of animals and some others.

Anthroponomical vocabulary has a wide application in brand naming, because it can be easily memorized and recalled. Trademarks based on anthroponyms may be: the initials of the company founder and his relatives, their personal names, what creates a favorable image and provides additional quality guarantees *(Viba, NIKO, Schwermer, Windel)*; personal names *(Thomy, Karoline, TIFFANI, Weinrich, Jutta, Maya, FLAVIA, ETHEL)*; surnames *(Friedel, Allemann)*; combinations of names, surnames, descriptive indicators and other words *(Wilhelm Felsche, Mr.Tom, Mr.Fit, Willy Schoko).*

The basis of some confectionery names is precedent names, which reflect the specifics of the current state of society and its value orientation, national culture and mentality:

1. The names of famous historical figures and leaders: *Kaiser Maximilian, Graf Metternich, COLUMBUS KIDS, Fürst Pückler;*
2. The names of figures of culture and scientists: *BEETHOVEN-TALER, LUDWIG VAN BEETHOVEN, MOZART-TELENAPS, BRANDT, Hans Sachs, Albrecht Dürer, Martin Behaim, Adam Kraft, Veit Stoß;*
3. The names of myths, legends, fairy tales heroes: *Herkules, Ritter St. Georg, Max und Moritz, TARAS;*
4. The names of literature heroes and film characters: *Buddenbrook, Robinson, Gulliver, Werthers Echte, Werther`s, Harlekin, Sandmännchen.*

The use of names as a basis of trademarks promotes the appearance of associative transfer of local characteristics to the concept of the product [3, p. 165]. More often trademarks based on toponyms appear in word combinations *(WIENER WALZER, VENEZIANISCHE NÄCHTE, PARISER NÄCHTE, BERLINER NÄCHTE, Niederegger Lübeck, Lübecker Taler, Lübecker Rat, WIENER SCHNEE, Casablanca, WIENER FÄCHER, Nürnberger Tand, Nürnberger Brunnen, Alpen Schokli, Lass die Alpen glühen, DONAUWALZER, Alpengold, ALPENWALD, Zugspitze GOLDBARREN, St. Tropez).*

Productive groups of onyms include names of astronomical features (*MARS, ZODIACS, PLANETS, SHOOTING STARS, Saturn, SPACE CHOC, Stern, Gemini)*; zoonyms *(SCHOKO Hasi, SCHOKO Bärli, Polarbär, Goldhase, DOG'S DELI, WHITE BEAR, Milkmice, Mäuse)*.

It should be noted that adjective formed from onym is often used in trademarks instead of it.

Besides onim lexicon the source of verbal trademark formation is also appellative vocabulary. Guided by the classification developed by N.G. Mordvinova [1, p. 14–15], appellative vocabulary forming the confectionery names can be divided into several groups:

1. concretizing vocabulary that points to the ingredient and types of production *(Mandelbeisser, FRUCITAS, MILKY BONS, Choconussa, FRUTANO, Melba);*
2. imaginative vocabulary:
    a. concrete vocabulary *(Ritter, Symphonie, Renaissance, Duett, Passat, Klassiker, Kloster, FANFARE, TOCCATA, HURRICAN, COURAGE, ORAKEL, Paradies, SAGA, Flirt)*;
    b. conceptual vocabulary *(Glücksstunde, Blumengruss, Blumenquartett, Kinderträume, Glückspirale, Chocoträume, DAS MÄRCHEN VOM FEINEN GENIESSEN, Kleine Zärtlichkeit, Sommerfreude, KUSS MIT LIEBE, ROSENKUSS, KRISTALLZAUBER, Feuerwasser, Zeit für Besonderes, ZARTE VERFÜHRUNG, THE WORLD SHINES ON YOU)*.

Conclusion. Thus, the source of the confectionery naming in Germany is not only onim lexicon but also appellative vocabulary. At that the last one predominates, because imaginative appellative vocabulary gives more space for creative activity that is necessary in order to attract a wider range of customers. The dominant layers of onim vocabulary used in verbal trademarks are anthroponyms and toponyms what can be explained with the attempt to emphasize of quality assurance (reliance on personal name and surname of the founder of the company) and striving for associativity (using of adjectives formed from toponyms). The process of globalization is manifested in widespread loanwords especially from English.

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THE FORMATION AND USE OF SPORT TERMS IN PERIODICALS

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The special lexicon in the newspaper demands special attention from the point of view of increase both efficiency of speech impact on the reader and availability of printing materials. However it should be taken into consideration not only terms, but also professionalisms and identifying names, that is all special lexicon. In the newspaper they are used first of all in their main, nominative function, that is as units which are strictly focusing on certain concepts or a certain class of subjects.

The aim of the research is to define functions and expressive opportunities of special lexicon on the basis of the newspaper «Pressball» (№№ 14-17, 2014).

Results and discussion. When coining a new term, journalists don't explain it. And it concerns not only the widespread sports vocabulary, which is included in the common-language vocabulary (матч, пенальти, аутсайдер), but also highly specialized (многодневка - in cycling, вингер - in game sports, свеча - in tennis):

По обыкновению были на высоте их ***центральная*** *Юлия Морозова (6****результативных блоков), нападающие*** *Татьяна Кошелева и Наталья Обмочаева (матч закончился двумя подряд* ***блоками диагональной).*** *При этом у 25-летней спортсменки завидно стабильная* ***подача*** *и добротное преимущество* ***в игре с первого мяча.*** *Она не расшывривается* ***брейками,*** *стараясь завершить* ***гейм на чужой подаче*** *как можно скорее* [1, № 15, p. 7].

Such a deviation from the accepted rules should be brought in an asset to journalists. After all, people who, read sports materials, are usually experienced: sport is popular among readers of all age, and it is arguable that the level of the audience is very high. Besides the person deeply penetrates into details when reading materials about «his» sport, about the others reads the most general information. And if it is remembered that sports publications often have the concrete address, it is necessary to recognize such submission of terms as norm.

Any newspaper material on a sports subject inevitably becomes isolated in a circle of special concepts, and the author stands problems: how to avoid the tiring repetitions and to diversify a speech form of the publication depending on its subject, purpose, genre, and address?

Terminology seeks for unification, and synonymy in it is an unusual occurrence. Moreover, it is reasonably considered to be undesirable and therefore doublet language forms are consciously eliminated. Journalists solve this problem in various ways the essence of which is to replace the official name - the term - by the informal one.

In sports publications the tendency to the contraction, compression of compound terms and identifying names is distinctly traced.

The components of identifying names are mostly contracted by the means of abbreviation: *Когда программа промежуточной (понятно, что окончательная еще впереди) инспекции арены была исчерпана, на вопросы «ПБ»* (газета «Прессбол») *ответили ее участники как с белорусской, так и со швейцарской стороны - глава* ***ФХРБ*** (Федерация хоккея Республики Беларусь) *и заместитель генсека ИИХФ* (IIHF - International Ice Hockey Federation); *А вот украинец закрепился в КХЛ* (Континентальная хоккейная лига) [1,№ 16, p. 5].

Compound terms are contracted by the admission of one of the components of the phrase or by the formation of a compound word on model: *Олимпийские игры - Олимпиада, Игры; сборная команда - сборная; Организационный комитет — Оргкомитет.* The semantics of the lowered element is assumed by the remained one, and the meaning of the absent word «is easily read» because it was a part of the established expression.

Комиссия была многочисленной и представительной: достаточно сказать, что в ее авангарде пребывали ***замгенсека*** *международной федерации Ханнес Эдерер и спортивный директор Дэйв Фитцпатрик. Неудивительно, что по результативности (11 шайб в 8 играх) белорусский* ***полпред*** *— худший в лиге* [1, № 14, p. 6].

The alternation of full and contracted names helps to avoid speech repetitions, monotony. Besides, the truncated forms aren't official items and bring into the text a shade of conversational style that disposes the reader to the publication.

The method of circumlocutory replacement of the term is very widespread. It allows to place necessary semantic emphases, to bring emotional coloring, to give a value judgment.

На 17-й минуте Хауген едва не позволил Тернбергу ***расстрелять*** *пустую минскую «рамку»* (нанести удар по пустым воротам). *Минчане в последние годы наращивают кадровую мощь, собирая ожерелья из* ***крупных бусин белорусского и импортного производства*** (подразумевается: известные белорусские и иностранные игроки) [1, № 17, p. 3].

The method of interchange is quite often used in publications. It means the replacement of one of the components of the compound identifying name: *чемпионат мира - мировое первенство.*

There is one more way of the replacement of sports terms - the use of terms from the same kind of sport or all-sports terms with wider value as contextual synonyms of terms from the same kind of sport or general-sports terms with wider meaning. Thus they represent itself not as a metaphor, but in their direct, though narrowed, meaning. This method is more efficient if it is combined with the replacement of terms by the words from common-language vocabulary which gives to the statement emotional and expressional coloring (that the replacement of the term by the term doesn't give): *оформить дубль -забросить две шайбы; «баранка» - «сухарь» - шатаут* (когда команда не открыла счет, последнее используется в хоккее); Динамо - «зубры» - бело-синие (о хоккейном клубе «Динамо-Минск»).

In sports materials terms are often used not in their direct, nominative, but in figurative, metaphorical sense. This method is called determinologization. Thus, the term remains monosemantic, and his «double» is not a term anymore: *Ведь в квалификации чемпионата мира* ***сборная финишировала*** *налегке -последней в группе* [1, № 14, p. 4].

For a newspaper publication determinologization is one more way to remove a naked outline of facts, to diversify the text, to make it figurative and emotional [2, p. 204].

Вернее, Крайчек-то его преследовал, но как будто никак не мог выбрать, с какого бока хитоватъ соотечественника. Пока выбирал, тот забросил с бэкхэнда. (Бэкхэнд - в теннисе - удар слева, когда рука, держащая ракетку, обращена закрытой ладонью назад; в данном контексте, удар клюшкой слева). *Несмотря на* ***кикс*** *в ходе первой попытки, вторую он довел до* *ума* (Кикс - в бильярде - неудачный удар кия по шару; здесь -неудачный удар клюшкой по шайбе).

The metaforization of terms of other branches is used even more often than the metaforization of sports terminology. Especially willingly they use special military vocabulary:

Соскучившийся по хоккею Александр стал идеальным ***подносчиком снарядов*** *для взрослеющего не по годам, а по часам таланта. В Риге пал рекорд КХЛпо продолжительности буллитной* ***перестрелки*** **[1,** № 15, p. 3].

One can meet quite seldom professionalisms in sports editions. This results from the fact that the majority of them belongs to the colloquial vocabulary and even to the professional slang. However, taking into consideration their properties such as figurativeness, certain novelty, freshness for the reader, it is possible to use professionalisms more often.

Воскресенье не стало исключением: ***обрезка*** *минчан* ***на чужой синей линии*** *позволили Людучину выкатиться с партнером* ***«два в*** *одного» и, игнорируя вариант продолжения через напарника, самолично расстрелять справа дальнюю* ***«девятку»*** *нижнекамских ворот. В ответ на* ***сдваивания против плеймейкеров*** *Петти, Харпер и чуть в меньшей степени Мир-кович активизировали* ***«двоечки»*** *либо, используя* ***заслоны*** *от* ***«больших»,*** *сами на* ***дриблинге*** *просачивались меж:* ***опекунов*** [1, № 16, p. 8].

Conclusion. In general the aspiration of journalists to expand the palette of expressive means of language by special vocabulary can be positively estimated. The main thing is that the expressions one uses shouldn't turn into stamps and cliches and lose their figurativeness and freshness.

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COLLOQUIAL SPEECH INFLUENCE ON ORAL PUBLIC SPEECH IN THE ENVIRONMENT OF BILINGUALISM: LEXICAL LEVEL

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The increasing influence of colloquial speech on the usage of representative language use has been called by the researchers (G.P. Neschimenko, V.G. Kostomarov, O.A. Lapteva and others) as a global tendency of modern language development. In the opinion of G.P. Neschimenko, “massive “invasion” of colloquial elements in their different realizations” is observed in the sphere of contemporary verbal public communication, and the most active elements are slang manifestations of colloquial speech that leads to the “decrease of language level of the text” in this sphere [2, p. 101].

The relevance of this investigation is determined by insufficient study of Russian oral public speech in Belarus and by the attention to the level of speech culture of bilinguals connected with the intensification of informational-communicative processes and dominance of oral spheres of communication over the written ones. The aim of this research is the identification of peculiarities of Russian oral public speech in the environment of close family bilingualism from the point of manifestation of the tendency of colloquial speech influence. The object of the research is Russian oral public speech of habitants of Vitebsk with higher education and the subject of it is the colloquial and not literary lexical units in this type of speech.

The material and methods. As the material for investigation the fragments of interviews with habitants of Vitebsk recorded by us in regional news shows and different meetings were used. 153 analysed fragments belong to people with higher education which hold different posts in significant social spheres, such as educational and science sphere, cultural sphere, health service, the sphere of physical culture and sport and others. The amount of the material is 14 109 words and 845 statements.

According to the aim of this research the methods of the investigation were chosen. The most important of them is the method of directional scientific observation and the method of personified text analysis. During the data processing we have used the method of language units classification and the method of their quantitative analysis. On the final stage of the research the method of linguistic description was used.

The results and their discussion. Diminutive forms, which often occur in the colloquial speech, have been identified in Russian oral public speech of habitants of Vitebsk with higher education. For example: *номинал вот этой денежки* (the officer of an exhibitional center); *им будет выплачиваться к уже имеющейся надбавочке к пенсии доплата* (the officer of Vitebsk regional executive committee); *в одних районах немножечко больше* (the officer of Vitebsk regional executive committee) and so on. Such forms have been identified in the speech of 7 % of respondents and amount 0,1 % of analyzed words. As it is denoted by O.A. Lapteva, such diminutive forms are "the tribute of the colloquial speech", because speakers can not give up their habits of informal speech completely [1].

The oral public speech concerning socially significant topics is full of neutral and bookish lexical units. Nevertheless, the results of our research have showed that expressive colloquial words and phrases are also used in this type of speech. Colloquial lexical units amount 0,1 % of analyzed words and occur in the speech of 6,5 % of respondents. For example: *шустрить* (the chief of the educational establishment); *мазанина* (the psychologist of the educational establishment), *выпятить* (the specialist of the research department) and so on.

Colloquial expressions and phraseological units have been identified in the speech of 5,8 % of respondents and amount 1,3 % of analyzed statements. For example: *ты как-то в обойме крутишься своей страны* (the art director of the theatre); *моя твоя не понимает* (assistant professor) and so on.

Overall colloquia units have been identified just in the speech of 10,4 % of respondents.

Slang lexical units have been identified in the speech of 1,3 % of respondents. For example: *косить под прошлое* (the art director of the theatre); *стоит на фильтре* (the chief of the educational establishment).

At the same time the tendency of decrease of speech standard in the contemporary public communication is called by G.P. Neschimenko as "the convergent" one and as "the particular sign of language development of modern civilization overall", that, however, doesn't except the differences in the speed of this process and in its scale in the concrete language situations [2, p. 99]. It seems to be that the particularity of bilingual language situation, in which our research has been fulfilled, and also the functioning of Russian language in other nation environment determine fewer manifestations of colloquial elements on the lexical level.

Conclusion. According to the results of the study it is possible to conclude that there is the particularity in manifestation of language tendency of colloquial speech influence on oral public speech that has been denoted on the territory of Russia. Colloquial forms, words, expressions and not literary lexical units are little characteristically for Russian oral public speech of Belarusian speakers that can be explained by their orientation chiefly on the codified literary language in this type of speech.

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THE PECULIARITIES OF THE MAIN IDEAS AND THEMES IN "GODS OF THE STEPPE" BY ANDREY GELASIMOV

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The objective of this article is to expose the distinctive features of the themes and ideas of "Gods of the Steppe" by Andrey Gelasimov. This article has been necessitated by the lack of study of Andrey Gelasimov's creativity and by the need for studying the peculiarities of the main ideas and themes of the novel in order to understand and interpret his works of literature.

Material and methods. Research material is A. Gelasimov's novel "Gods of the Steppe". As methods of research we used general scientific methods, such as the descriptive and analytical method and a contextual analysis method.

Results and discussion. Andrey Gelasimov is a modern Russian writer, a representative of Russian Realism. His works are distinguished by his manner of writing, deep psychological analysis of his characters, both literary and spoken language proficiency, and his answering the desires of the readers. The books written by Andrey Gelasimov are about human relationships, the destiny of common people, and children. His works of literature reveal such themes as love, motherland, the generation gap, moral values, the power of money, and the problems of nationalism. But it is worth mentioning that the author tries to go far beyond his usual set of themes in the novel "Gods of the Steppe".

The novel is one of the best works of Gelasimov. In 2009 the writer was awarded the National Bestseller Prize for his book in Russia. "Gods of the Steppe" is based on the author's mother's and grandfather's stories about wartime: battles, army camps for Japanese prisoners of war, the destinies of Soviet and Japanese peoples. "My grandfathers defended our native Russian land, thus, I had access to first-hand knowledge of what war was like," says Andrey Gelasimov [1]. The writer's reminiscences about his childhood, and his youth spent in Irkutsk in Transbaikalia form a subplot to the book.

"Gods of the Steppe" is set in the trans-Baikal village of Razgulyaevka at the end of World War II, shortly before the bombing of Hiroshima and Nagasaki. In the novel, Gelasimov restores the traditions of the country prose of the 1960s–70s. The book brightly depicts the Russian countryside, and the everyday life of common people, and also the inconsistency of the Russian people's character**.** The images of common peasants and children are vividly represented. The book is about the Great Patriotic War (World War Two), about boys who idealize Stalin, and about women who didn't manage to wait for their husbands, and about officers and soldiers suffering in the rear.

War and the Russian military are the main themes in the book. "Gods of the Steppe" is a reference to the history of the Russian people, to the World War II period. It is a novel about a difficult war and equally difficult post-war era. It was important for the writer to bring up the theme of war due to his attitudes to the idea of national self-determination. "Gods of the Steppe" is the author's response to what is happening to Russia, and his reaction to the reinforcement of the state [2].

The peculiarity of the novel is that the war is presented not from an adult's point of view but from a child's one. Childhood is not idealized in the book. The characters of "Gods of the Steppe", both the children and the adults, may seem to be cruel and aggressive but this can be justified by the period in which they live. The ideas of compassion and mercy even in the grave years of war, and the idea of the great Victory that gives inspiration and strength to all the inhabitants of Razgulyaevka are of utmost importance to the book.

Conclusion. Thus, in the novel "Gods of the Steppe" Andrey Gelasimov depicts the inconsistency of wartime characterized by the pursuit of heroism, and the tenderness and warm-heartedness of human relationships put on trial by the war. The book carries on the traditions of Russian Realism, Soviet country and war prose, which truly proves that the novel "Gods of the Steppe" by Andrey Gelasimov deserves the National Bestseller Award.

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CAUSES OF DRAWBACKS IN THE ARTICULATION OF ENGLISH SOUNDS

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Teaching pronunciation is important because it is necessary for communicating one's ideas clearly, listening, reading and writing. So correct articulation movements are functionally important. But unfortunately only a few highly gifted and motivated individuals sound like native speakers of English. The main goal of the present article to reveal the main causes of drawbacks in the articulation of English sounds and work out some rules for avoiding them.

Material and methods. Critical analyzing the scientific sources, examining of students' opinion and describing are helpful in our investigation of the problem.

Results and discussion. One of the sources of mistakes in articulation of English sounds is that students do not follow all the stages of the process of mastering correct articulation. The first thing a learner should do is to listen a lot because speech depends of hearing. "You must try for at least a short part of the time to forget about what the words mean and to listen to them simply as sounds. Take one of the English sounds at a time…, and concentrate on catching it, on picking it out, on hearing what it sounds like" [1, p.3]. The same passage must be listened to plenty of times until a store of sound-memory is built which forms a firm base for our performance.

The recent survey carried out at college among all the learners of English shows that only 25 per cent practise this activity and 68 per cent never do it.

The next step in forming pronunciation skills deals with the traditional approach to teaching pronunciation that is called the "pronunciation drill". It implies a number of activities such as listening and imitating, phonetic descriptions, minimal pair drills, using visual aids, practicing shifts and tongue- twisters, etc. In case the process of practicing aloud isn't accompanied by the close comparison of the articulated sounds with the sounds in our sound- memory or the learner has ignored the stage of studying phonetic descriptions, some drawbacks in the articulation of English sounds are unavoidable.

Recording ourselves and comparing our recordings with the original is very helpful in mastering English pronunciation. But according to the survey this kind of activity is popular only with 5 per cent of all the students.

Most cases of bad articulation are caused simply by laziness. Students do not want to speak clearly and use their facial muscles to produce good articulation which in turn creates clear speech. They know what they are saying so they expect other people to know what they mean.

When teaching and learning foreign languages mother tongue interference presents some difficulties in the pronunciation. The phenomenon is rather complicated and has obscure character. The influence of mother tongue has been a topic of research and discussion by linguist for decades and currently this topic remains still actual. It implies the existence of at least two language systems in human speech one of which is primary in respect to the other. The result of their interaction can be negative and leads to the emergence of phonetic errors in the speech flow.

Possible reasons for the learners making errors in pronouncing the foreign sounds are as follows:

1. Learners mispronounce the sound because they mishear it. It means that special attention should be paid to forming the corresponding perceptual background and the sound- symbol correspondence, which allows "to decode any given word or write down any spoken word without much hassle" [2, p.38].

2. Learners perceive the sound correctly but mispronounce it because of differences in the articulation of English and Russian sound. A detailed study of articulatory features of all English sounds and following it pronunciation drills is the best way to avoid mistakes in pronunciation.

Although teaching pronunciation is based on the approximating approach, the fact that there are no sounds in both languages that are alike should be of paramount importance.

For example, Russian- speaking learners should observe quantitative and qualitative differences in the articulation in similar English vowels, the positional variation of vowel length, pay attention to the position of the lips and the tongue, etc. The survey shows that the students (77%) realize that the phenomenon of phonetic interference influences the articulation of English sounds.

The age of a person can also be a barrier to a perfect pronunciation. It's scientifically proved that if a person is over 10, the ability to imitate perfectly becomes less.

It should be noted that psychological discomfort or fear of making a mistake can cause some errors in pronunciation too. That's why the atmosphere of relaxed receptivity accompanied by positive emotions is one of the main conditions on the way to a good English pronunciation.

To avoid drawbacks in articulation of English sounds students need a lot of training, which should include the following steps:

1) to listen to the same passage , picking out the same sound a lot of times and concentrating on it;
2) to practice aloud and pronounce distinctly all the sounds;
3) to use all traditional techniques for teaching pronunciation;
4) to record yourselves, listen to the recording and compare with the original;

5) to realize that the concealed phenomenon of phonetic interference influences the quality of the produced sounds and work out the ways for overcoming it;
6) to get rid of fear and strain while practicing English sounds.

Conclusion. It should be mentioned that all the aspects of the given problem require the consideration of articulatory peculiarities of each person individually. A special attention should be paid to the phenomenon of phonetic interference as a number of the students do not recognize it as a cause of their drawbacks in articulation.

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NONCE WORDS IN RUSSIAN OF THE XIX CENTURY (ON THE MATERIAL OF DICTIONARIES)

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Neologisms are object of research in linguistics since 60th years of XX century. Nowadays there is an extensive case of the works devoted to studying of new words. However the occasional word of XIX century is still insufficiently investigated as the phenomenon reflecting dynamics of language. Nonce words are considered or as part of individual style of the certain author, or as a part of limited theme groups of words [4; 2]. That's why the purpose of research is the word-building analysis of nonce words and creation of their classification.

Material and methods. In studying of a neology there is a number of controversial issues (for example, problems of classification of new words, of the main signs of nonce words and others). For this reason it is necessary to specify that in this work as a nonce word will be understood the new word, which has a certain founder, hadn't entered the usual word usage, exists only in a specific context of an entry, has formed on productive model. The empirical base of research was formed from lexical nonce words, which are selected by method of continuous selection of several dictionaries XIX century: The French-Russian dictionary taken from the latest sources, 1841-42, and Explanatory dictionary of living Russian language, 1863-1866 [1; 3].

Results and discussion. These nonce words carry out a certain function: they were created as equivalents of borrowing / foreign words. Nonce words are connected with borrowing / foreign word meaning in language source.

All lexical nonce words on extent of connection with borrowing / foreign word can be divided into the 3 following groups.

The first group united the full and the partial word-formation loan-translation, for example, *змееслове* (*офиология*: opbis – snake and logos – word); *народообычье* (*этнография*: ethnos – people and grapho – write). The nonce word of this group is most closely connected with the word, for which replacement it was created.

The second group united compound words, which have compliances in other language, but aren't the translation. Value of the Russian word doesn't consist of the translation of the corresponding values of roots of loan, the Russian roots transfer value descriptive, associative. Such words were created for replacement of terms of various fields of knowledge and often expressed the author's relation to the phenomenon, for example, *глазоем*, *небозем*, *небоскат* (*горизонт*: horizo – restrict), *худодум* (*пессимист*: pessimus – the nastiest).

The third group united the nonce words, which created on productive word-building models: with the translation of value of the motivating basis or actually Russian nonce words, for example, *миловидница* (*кокетка*: coquet – pretty), *молонник* (*электричество*).

It should be noted that creating equivalents to the borrowing or foreign words, authors of dictionaries use various ways of word-building, for example, *ветшанин* (suffixal way) and *ветхослужилый* (addition) as equivalents of the word *ветеран*. As sample for creation of a nonce word also the word-formation model of unique word can serve, for example, the word *невсупорица* (*анахронизм*: ana – aganst, chronos – time) is created on a sample of *несусветица*. Thus their choice is explained by the author's relation to the called phenomenon. It is connected with that the main property or the characteristic of a subject, phenomenon or sign is the cornerstone of nonce words. Creation of nonce words is also connected with that formation of some groups of lexicon didn't come to the end to the middle of the XIX century yet.

Conclusion. Summing up the results of research it is necessary to notice that the nonce words of the XIX century, which remained in a specific context of an entry among expressional, unique synonyms to the borrowing / foreign word give rich material for research of various aspects of a neology.

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SPEECH MEANS OF SELF-PRESENTATION IN AUTOBIOGRAPHICAL TEXTS

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There are many works devoted to studying of autobiographical texts in various aspects in modern linguistics. Some scientists pay special attention to research genre features and poetics of this phenomenon (for example, T.G. Simonova), others study the autobiography from the point of view of cognitive linguistics and conceptology (T.V. Romanova, A.V. Terpugova). **The aim** of our research is detection of the main lines of self-presentation of the language personality in texts of autobiographical prose of a turn of the XX–XXI centuries and creation of model of the description of language self-presentation of the personality in autobiographical prose of the specified period. **Urgency** of work is defined by an insufficient theoretical and practical readiness of the problems connected with the analysis of the language identity of the author in autobiographical prose of a turn of the XX–XXI centuries. Scientific **novelty** consists in research material, and also in approach to the analysis of autobiographical prose.

Material and methods. Autobiographical prosaic works of Russian and Belarusian cultural and art figures (A. Makarevich, E. Grishkovets, D. Simanovich, V. Mulyavin, B. Grebenshchikov, etc.) of a turn of the XX–XXI centuries act as material of our research. In the work we use a complex of linguistic and culturological methods: method of continuous selection, general scientific methods of supervision and description, elements of statistical methods, contextual analysis etc.

Results and discussion. Tactics, which realize the strategy of self-presentation, are rather various, so in this connection it is obviously important to systematize them. Researchers (for example, O. S. Issers, Yu. K. Pirogova) offer two bases for their classification:

1) *the used sign system.* Verbal and nonverbal tactics of self-presentation are respectively allocated;

2) *self-presentation subject.* Language means of self-presentation can be ***direct*** – when the subject gives information on himself, and ***indirect*** – when it uses information on other people and the phenomena with which it can be associated and by that indirectly operates impression about itself for self-presentation [2, p. 545].

Treat ***nonverbal tactics***: appearance, clothes, manner to behave, speech manners etc. Treat ***indirect verbal tactics***: tactics of an identification with someone/something, tactics of an adjunction to the winner, tactics of artificial increase of degree of objectivity of the transmitted data, tactics of a distancing etc.

In our work the attention is concentrated on verbal tactics of self-presentation and speech means of their realization.

Let's consider ***direct verbal tactics*** of self-presentation of the personality:

1. ***Tactics of transfer of objective information on itself***, that is the actual information of logical character based on accurate data and figures. We rank the following as objective characteristics of the personality: age, zodiac sign, relationship status, existence or absence of children, education, a profession, an occupation, a residence, abilities, the concrete facts concerning life, which can be checked.

2. ***Tactics of transfer of subjective information on itself.*** We understand an assessment as subjective characteristics of the personality the respondent of the external data, traits of character, intellectual level, life experience, the description of an emotional state, interests.

3. ***Tactics of emphasis of positive information on itself.*** This tactics is urged to create a worthy image of the respondent at potential readers. Realization of tactics consists in game of the sender on predisposition of the addressee to empathize, sympathize. From these positions the link to personal experience, generally unsuccessful, with the subsequent message that the problem was solved is widely applied.

4. ***Tactics of emphasis of negative information on itself.*** This tactics is directed on demonstration of non-standard individual qualities of the personality. It is realized by means of denial of habitual standards of behavior, shocking statements, discussion of the tabooed subjects.

Among ***indirect verbal tactics*** the following are interesting to us:

1. ***Tactics of use of information on people, subjects, objects and the phenomena with which the respondent can be associated.*** This tactics relies on background knowledge of the addressee. It explicates first of all due to oppositions and comparisons.

2. ***Tactics of a solidarization with the addressee***, which is creation of impression of a community of views, interests, aspirations, feelings of the «psychological accord» speaking and audiences. This tactics is realized through a choice of illocutions of a unification and unity.

3. ***Tactics of a distancing*** consists in opposition *we – they* with an obligatory distancing from those who forms *«not our»* circle. And the assessment of *«our»* circle is always positive, the assessment of *«not our»* circle is always negative.

4. ***Tactics of artificial increase of degree of objectivity of the transmitted data*** which essence consists in minimizing a praise of and to maximize dissatisfaction with. In presupposition the following implicit data enter here: *«If the people who know this person speak in such way, so this information can be rather reliable».*

Conclusion. Thus, during research it was established that strategy of self-presentation of the personality is internally inherent in any kind of communication and represents demonstration by the person of the personal characteristics. In an autobiographical discourse the strategy of self-presentation of the personality acts as the main. Tactics, which realize this strategy, are rather various. Our attention was concentrated on direct and indirect verbal tactics of self-presentation of the personality. Authors of works used tactics accenting both the positive and negative moments of their character, preferences and hobbies.

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SOCIAL AND SYMBOLIC ORIENTED FUNCTION OF PATRONYMIC NAMES IN LITERARY DISCOURSE (BASED ON WORKS BY V. ASTAFJEV)

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The creative works by Victor Astafjev, one of the most outstanding writers of the second half of the twentieth century, are considered to be the valuable source for linguistic research. The main characteristics of his creative works is anthropocentrism. While depicting people in the socio-cultural context, the author reveals the Russian national traits, national objective reality, moral and valuable attitudes of the society. When analyzing V. Astafjev's literary peculiarities, the critics point out that national roots are the features characteristic of the author's creative activity. According to V. Kurbatov Astafjev's language is «хранитель опыта, отражение духовного пути народа» (a keeper of experience, a reflection of the spiritual life of people) [2, p. 15].

The anthroponymic system of any language is the main link connecting man and society. The anthroponymic space is both the core of the literary text and the source of various connotative and implicit meanings given by the author to each character's name. V. Astafjev's characters are various and diverse. Social relations and roles are clearly defined by the characters' naming system. The latter reveals the definite onomastic standards of the society.

Urgency and aim of the research: the article deals with the social and symbolic oriented function of patronymics as a special historically based specificity of the respectful address in the Russian speech etiquette.

Material and methods. Contextual elements represented by the anthroponymic category «patronymic name», collected by the sampling method from V. Astafjev's «Posledny poklon», «Proklyaty i Ubity», «Tsar-Ryba» are considered to be the factual material for the research.

Statistical, quantitative and qualitative methods, some elements of etymological and contextual analises form the research methodological base.

Results and discussion. Patronymic names are an additional element to distinguish a person and a formula of the respectful address, a person's naming constant attribute. 69 patronymic names (5 being the variants of the official forms) are included into the structure of the literary anthroponymic research. Taking into consideration the character is gender differentiation one should define male and female patronymic names frequentative predominance in 2:1 correlation. We consider that the divergence of frequency of the personal naming by the patronymic name depends on different social significance in the man / woman opposition. This opposition has formed the man's image as the head of the household and an active statesman who makes important decisions, and that of a woman mainly functioning as mother, wife and housekeeper.

Models ended in -ович, -евич, -ич, e.g.: Агафонович, Васильевич, Ильич and -ыч are the patronymic male word-forming elements. Moreover, phonetic compression can be observed in the patronymic names with – ыч, e.g.: Иваныч, Илларионыч, Касьяныч. The suffixes -овна, -евна, -инична form female patronymic names, e.g.: Акимовна, Васильевна, Ильинична and -ишна: Саввишна.

The -ыч and -ишна patronymic naming forms alongside with popular speech patronymic naming forms, e.g.: *Хомич* ← Хома ← Фома, *Вахрамеевна* ← Вахрамей ← Варфоломей, dialect forms, e.g.: *Хасьяныч* ← Касьян, shortened forms, e.g.: *Фимовна* ← Ефимовна or by the means of the full form patronymics contraction, e.g.: *Фадеич* ← Фадеевич, represent a popular speech style and indicate closer communicators' relations between the participants. Connotative subjectivity meaning is depicted in such patronymic naming forms. At the same time respectful attitude is preserved. For example, the soldiers from the novel «Proklyaty i Ubity» who stayed at the Zavjalovs' tiny and light but still solid small village house, use polite addressing formula to their seniors, adopted in the Russian folk speech: *Наталья Ефимовна* and *Корней Измоденович*. The host, a former imperialistic war participant, an old soldier, but with a boyish character, who likes spreeing during the feast calls his wife *Фимовна* to show his obedience hidden and humality to the hostess no matter what his further «being» will be after another feast.

The analysis of the formation of patronymical personal names initiates the «rarity» of connotative meanings, e.g.: *Евграфович, Илларионович, Маркелович, Акимовна, Мефодьевна* etc., so-called «forgotten» meanings, e.g.: *Фалалеевна* and «untypicalness» of meanings, e.g.: *Измоденович* ← Измоден 'a secular name'← измоден ← измодить 'измождаться, исхудать, исчахнуть' ('to become worn out, to become emaciated, to waste away˙') [1, p. 27].

Conclusion. Thus, patronymic names included into the anthroponymic research are the true elements of the existing Russian anthroponymy; they mark the typical nature of the prevailing three-name address system of the particular society; they preserve respectful attitude to the paternity meaning.

Derivatives that form patronymic names are characterized by stability, pattern bindness, minimum of variations, especially if based on derivational possibilities of names and their word-formative background. It is proved that variativel patronymic naming forms represent communicators' relations and perform an emotional and expressive function. The reconstruction of the connection between the previous and modern generations is revealed in naming models forming patronymic names.

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THE PROBLEM OF ALIENATION IN HAROLD PINTER'S DRAMA

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Among the younger generation of playwrights who followed in the footsteps of the pioneers of the Theatre of the Absurd, Harold Pinter has achieved the status of a major force in the contemporary theatre. He is one of the most prominent dramatists of the 20th century, who has written twenty-nine plays and twenty-one screen plays and was awarded Nobel Prize. Pinter's plays have generally been classified into several key groups: comedies of menace, memory plays, political plays and comedies of mannerism. The trilogy *"Other Places" (*1980*)* takes up a special place among the author's later plays, it includes such dramas as *"Family Voices"* (1980), *"A Kind of Alaska"* (1982) and *"Victorian Station"* (1982). The trilogy is a transition from comedies of manner to political plays, that's why a complete examination of this problem is extremely urgent issue in the modern study of British literature. The aim of this study is to illuminate the problem of alienation in Harold Pinter's drama and to comprehend the problem of "non-communicative dialog" in his plays. The researcher Elin Diamond notes, "Pinter focuses on the world that language limns for each speaker" [1, p.213].

Material and methods. The study material is Harold Pinter's later works: *"Other Places"* (1982), *"Party Time"* (1991) and *"The New World Order"* (1991). Comparative-typological and cultural-historical research methods are used to reveal the author's conception and specific features.

Results and discussion. There is no doubt that the problem of alienation and the lack of a constructive dialogue are discovered in the author's early plays. But it is likely the manifestation of the characteristic feature of the theatre of the absurd in his work. So, Martin Esslin considers Pinter as "one of the most promising exponents of the Theatre of the Absurd in the English speaking world" [2, p. 205] and examines his works in the light of the absurdist conventions. Pinter sees the funny side of the absurd. In his early plays he employs a comic way of expression to laugh at everything, even at the tragic parts of existence. Nonetheless, to Pinter, fun isn't mere laughable farce. The comedy in his works is based on alienation and meaningless. Life for his character is arbitrary and painful. The same features we can find in an existential drama of Sartre and Camus, but Pinter doesn't give his characters an opportunity of transcendent understanding. Pinter, like existentialists, is involved in the discord of living. That's why his characters are mostly isolated people (e.g. *"The Room"*) who have sought out refuge in a small room, trying to escape an unknown danger. In his early play "*The Room"* (1957), Pinter examines man's life that is not always perceptible and predictable. Security and peace are two vulnerable states of being. The vulnerability leads to alienation and characters try to isolate themselves from the outside world and other people. The evolution of such a comprehension of non-involvement in reality is observed in the trilogy *"Other Places"*. While the social force intends to impose its dominating, signifying and regulating power on a human being, the privet impulse constantly reminds him of the gap between his desire and obligation. The escape from personal responsibility leads to anonymity and depersonalization. The representation of elimination of personal responsibility is observed in *"Family Voices"*. There are no characters in the play; it is only voices that remain in the play. Every voice tells its own version of events. The degree of alienation has reached the highest point of tension and is reflected in the final remark: "I have so much to say to you. But I am quite dead. What I have to say to you will never be said [3, p.148]". Thus, we face the tragedy of modern family takes where there no place reliance and love among family members. People try to dissociate themselves and hide behind empty, meaningless words.

In the second play *"Victorian Station"* the dramatic portrayal of the contradictory relationship between the controller and the driver exemplifies the pattern in the three plays and the general situation of man in society as a whole. The opening scene of the controller sitting at the microphone in the lit-up office with the driver cruising somewhere on the road immediately paints a symbolic picture of the man and society. The controller wants the driver to go to Victorian Station to meet a customer there and send him to other place. When he says, "I am just talking into this machine, trying to make some sense of lives. That's my function" [3, p. 198]. The dilemma and psyche of the driver invents us to think of social gap: on the one hand, the driver declares that he is lost and doesn't know what he has been doing all these year; but on the other hand, when the controller is to give him up for another driver, he is scared. We can see a paradoxical situation and understand the dilemmatic state both the driver and controller.

If the play *"Victorian Station"* portrays a man's dilemma in the society, *"A Kind of Alaska"* depicts the frustrating and painful experience of man's ego and self-identification. And this problem is also connected with alienation as a reflection of depersonalization. The play tells the moment when a woman who has slept for decades wakes up after injection. The whole play, built on the dialogues between the woman, Deborah, and the doctor, Hornby, represents the situation of alienation. The woman refuses to look at herself in the mirror and admit that she is no longer a small girl, who she was twenty years ago. The female character remains in the frozen state of renunciation of recognition of the reality.

Thus, Harold Pinter lines up a peculiar regularity: at first a man renounces from his nature and his predestination, then he loses the connection with reality and, at last, he turns away from another person, choosing more enjoyable way of existence.

Conclusion. In his later play *"Party Time"* Harold Pinter emphasizes that the violation of the system of values, family disruption, refusing to call a spade a spade as well non-elimination of personal responsibility can lead to *"The New World Order"* (Pinter's play of the same name), the situation where, instead of real people, blindfolded puppets bring the situation under their control. Like the existentialist playwrights Pinter has given expression to the hopelessness and the anxiety felt by the individual in the modern society dominated by despotic groups and crime syndicates. But he tries to raise a question about the man's role in this atmosphere of alienation and isolation.

As a conclusion to what we mention previously, we can say that Harold Pinter's plays reveal the state of alienation, nothingness and meaninglessness. In our world words don't unite but they separate and lead to the non-communicative dialogue. Language has lost his power and significance. People feel that they are outsiders and alienated, but the author believes that each of us is to win our battle between nature and responsibility.

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THE MODERN BRITISH PRIMARY EDUCATION FEATURES

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At the heart of the educational process lies the child.
Good teaching makes a difference.
Excellent teaching can transform lives.
Professor Robin Alexander /Cambridge University/

Education throughout the United Kingdom (England, Scotland, Wales and Northern Ireland) falls into 4 categories: pre-school or nursery, primary, secondary; further and higher.

Pre-school caters for children below the age of 5, is not compulsory and is invariably part-time. Much of the provision is privately provided.

Primary schools take pupils from 5-11 years. Children aged are in *key stage* 1 (infant school), 7-11 are in *key stage* 2 (junior school).

Secondary schools cater for pupils aged 11-16. Pupils aged 11-14 are *key stage 3*; 14-16 are *key stage 4*. Many schools offer additional education until the age of 18.

Further and Higher Education is provided in colleges and universities for students aged 16 and over. There is no upper age limit.

The minimum leaving age is 16 but it is usual for students to do at least a further two years either at school or a college of further education, where vocational qualifications can be studied.

Scottish schools operate a slightly different system with the transfer age from primary to secondary being 12 not 11. Pupils take the Scottish Certificate of Education (SCE) examinations at Standard Grade and Higher Grade (equivalent of English GCSE and E-level).

Great Britain does not have a written constitution, so education is determined by National Educational Acts.

The National Education Act of 1944 provided three stages of education: primary, secondary and further education. Compulsory schooling in England and Wales lasts 11 years, from 5 to 16.

The majority of the schools in Britain are supported by public funds and the education provided is free. But there are also a considerable number of public schools. Parents have to pay fees to send children to these schools. The fees are high.

The important feature of schooling is the variety of opportunities offered to schoolchildren. English school syllabus is divided into Arts (or Humanities) and Sciences, it divides the secondary school pupils into study groups: a Science pupil will study Chemistry, Physics, Math, Economics, Technical Draw, Biology, Geography; an Art pupil will do English Language and Literature, History, foreign languages, Music, Art, Drama. Besides these subjects they must do some general educational subjects like Physical Education (Sport), Home Economy and others. The system of options exists in all kinds of secondary schools.

Headmasters and Headmistresses of schools are given a great deal of freedom I deciding what subject to teach and how to do it.

In Primary school children learn to read and write and the basis of arithmetic (Infant school). In the higher classes of Primary school (Junior school) children learn Geography, History, Religion and a foreign language. Then children go to Secondary school.

In this article we would like to describe modern primary school features in UK, including structure, class sizes, term times, eleven-plus examination and basic aims of education.

Primary education in England begins at age five. Local education authorities must provide all children with a school place no later than the start of the term after their fifth birthday.

The precise age at which schools take children varies from one area to another, but it is common for children to go to school at the start of the term in which they will become five.

A growing trend is for schools to admit new pupils at just one point in the year, which often sees them take children who will be five within the coming school year - September to August; under this system, summer-born children start school in the autumn, not long after their fourth birthdays.

Some children between 2 and 5 are educated in nursery schools. Many children attend informal pre-school play-groups organized by parents in private homes. Nursery schools are stuffed with teachers and students in training. There are all kinds of toys to keep children busy from 9 o´clock a.m. till 4 o´clock p.m. Here children play, lunch and sleep. They can run about and play in safety with someone keeping an eye on them. Most children start education at 5 in a primary school.

Describing **structure,** we should note, that Primary schools consist mainly of infant schools for children aged five to seven, junior schools for those aged seven to 11, and combined junior and infant schools for both age groups.

A primary school may be divided into two parts- infants and juniors. At infant school reading, writing and arithmetic are taught for about 20 minutes a day during the first year gradually increasing to about 2 hours in their last year. *There is usually no written timetable. Much time is spent modeling from clay or drawing, reading or singing.*

By the time children are ready for the junior school they will be able to read and write, do simple counting, they know numbers. At 7 children go on from the infant school to the junior school.

First schools in some parts of England cater for ages five to 10 as the first stage of a three-tier system: *First, middle and secondary.* Middle schools cover different age ranges between eight and 14 and usually lead on to comprehensive upper schools.

The government says research evidence suggests that smaller infant classes enable teachers to spend more time identifying each child's individual needs and difficulties, and offering the help they need to master the basics.

The average **class sizes** of five, six and seven year olds suggest that the government is on target to fulfill its promise of classes of 30 or below. But some parents have complained that reducing class sizes has worsened the problem of trying to get places for their children in popular, over-subscribed schools.

There are 190 school days in the academic year in the UK, divided into **three terms**. Each term has a hlf-term holiday of 1 week.

Autumn term: 1st week in September -3rd week in December . Half term break is during October.

Spring term: 1st week in January –Easter. Half term break is during February.

Summer term: one week after Easter- last week in July. Half term break is during May.

The school year is divided into terms, three month each, named after seasons autumn term, winter term and spring term.

The autumn term starts on the first Tuesday morning in September. In July schools break up for eight weeks. Live at school is more or less similar everywhere. Each class is from 30 up to 40 pupils. Each school day is divided into periods of 40-50 minutes, time for various lessons with 10-20 minutes breaks between them.

On important occasion such as end of term or national holiday, called in England schools speech-days pupils are gathered in the assembly hall.

Pupils at many secondary schools in Britain have to wear school uniform. This usually means a white blouse for girls, with a dark-colored skirt and pullover. Boys wear a shirt and a tie, dark trousers and dark-colored pullovers. Pullovers usually have the school badge on.

The pupils who violate various school regulations may be punished in the following ways: reported to the headmaster, named in school assembly, detained at school after ordinary hours.

Eleven-Plus Examination. The examination **at the age of eleven** is conducted by the local authorities and usually consists of three papers, one in English, one in arithmetic and an Intelligence Test, the latter is thought to play the main role. The examiners think that they can ascertain the child's Intelligence Quotient, or I.Q. Only about twenty-five per cent of children are successful and win places at the Grammar school, from which they may proceed to the University. The other seventy-five per cent of children tend to be regarded as "unsuccessful" in that and they can only go to a secondary modern school. The general level of education in these schools is low, they prepare pupils for non-professional occupations (as the future unskilled workers). This system of allocating children to different types of secondary school at the age of eleven and the selection methods have caused much criticism and in some city schools the I.Q. test is no longer necessary. There are also wide regional differences in the provision of grammar school places. Some areas have more places than others in relation to the population. Far worse than the regional differences are the social ones. The survey showed that middle-class children have a far higher chances of getting to grammar school – 54 per cent of upper middle-class children got places, compared with 11 per cent of lower manual working-class ones.

In the first six years of the 21st century, the aims, purposes and values of education appear to be reflecting economic and social principles, at the same time as the philosophies of personalised teaching and learning. This ‘hybrid’ of economically driven, learner-centred, and society-influenced aims reflects the views expressed by various theorists on education.

At the turn of the 21st century, England developed its first curriculum for primary education which incorporated a clearly defined statement of aims, values and purposes for education.

These embraced personalised learning, socio-economic and vocational philosophies. In Sweden and the Netherlands, the hybrid approach appears to be reflected in recent policy documents for primary education, which emphasise the key role of child-centred teaching and learning philosophies, at the same time as the importance of education in preparing children for their place in society, and for their contribution to an ever-changing economy.

In England, *Excellence and Enjoyment: a Strategy for Primary Schools* (DfES 2003) and *EveryChild Matters* (HM Treasury 2003) emphasised that primary level education should be concerned with standards, but also with enjoyment and a child’s individual needs.

Although there are those who argue that the focus appears to remain with standards and assessment, more than with enjoyment. In Scotland, the education is focused on developing successful learners, confident individuals, responsible citizens, and effective contributors. It also emphasisedvalues of wisdom, justice, compassion and integrity.

The aims, values and purposes of primary education in the last 40 years appear to have passed through distinct phases. In the first phase, the child was the main focus and this greatly influenced the aims and values of the curricula; in the second phase social and economic concerns began to come to the fore; whilst today’s aims focus on raising standards of achievement, and on preparing children for life in a multicultural society and in an ever-changing economic and work environment in which they will require a wide range of skills.

However, there appears to be a realisation across countries that inorder to achieve excellence, academically and vocationally, education requires a degree of personalisation; emphasis on the individual, the child. Government have also begun to recognise what that citizenship education is vital as one of the aims of an all-round education if countries are to produce participative citizens for the future. Recent emphasis too has highlighted healthy, safe and sustainable living, and primary education’s role in encouraging young children’s awareness of such issues.

The aims of the Modern Primary Education in UK are the following:

The individual.Well-being: prepare children for a fulfilling future as well as attend to their present needs, hopes, interests and anxieties and promote their mental, emotional and physical welfare. Help them to develop a strong sense of self, a positive outlook and maximize their ability to learn through good, evidence-informed teaching.

Engagement: secure children's active and enthusiastic engagement in their learning.

Empowerment: excite, promote and sustain children's agency, empowering them through knowledge, understanding, skill and personal qualities to profit from their learning, to discover and lead rewarding lives, and to manage life and find new meaning in a changing world.

Autonomy: enable children to establish who they are and to what they might aspire. Encourage their independence of thought and discrimination in the choices they make. Help them to see beyond fashion to what is of value.

Self, others and the wider world. Encouraging respect and reciprocity: promote respect for self, for peers and adults, for other generations, for diversity and difference, for ideas and values, and for common courtesy. Respect between child and adult should be mutual, for learning and human relations are built upon reciprocity.

Promoting interdependence and sustainability: develop children's understanding of humanity's dependence for well-being and survival on equitable relationships between individuals, groups, communities and and nations, and on a sustainable relationship with the natural world and help children to move from understanding to positive action.

Empowering local, national and global citizenship: enable children to become active citizens by encouraging their full participation in decisionmaking within the classroom and school, and advancing their understanding of human rights, conflict resolution and social justice. They should develop a sense that human interdependence and the fragility of the world order require a concept of citizenship which is global as well as local and national.

Celebrating culture and community: every school should aim to become a centre of community life, culture and thought to help counter the loss of community outside the school. 'Education is a major embodiment of a culture's way of life, not just a preparation for it,' as Jerome Bruner said.

Learning, knowing and doing Exploring, knowing, understanding and making sense: give children the opportunity to encounter, explore and engage with the wealth of human experience and the different ways through which humans make sense of the world and act upon it .

Fostering skill: foster skill in those domains on which learning, employment and a rewarding life depend: in oracy and literacy, in mathematics, science, IT, the creative and performing arts and financial management; but also communication, creativity, invention, problem-solving, critical practice and human relations.

Exciting imagination: excite children's imagination so they can advance their understanding, extend the boundaries of their lives, contemplate worlds possible as well as actual, understand cause and consequence, develop the capacity for empathy, think about and regulate their behaviour, and explore language, ideas and arguments.

Enacting dialogue: help children grasp that understanding builds through collaboration between teacher and pupil and among pupils. Enable them to recognise that knowledge is not only transmitted but also negotiated and re-created; and that each of us in the end makes our own sense out of that knowledge. Dialogue is central to pedagogy: between self and others, between personal and collective knowledge, between present and past, between different ways of thinking Principled approach. In the 1960s, when no self-respecting school or education authority was without its list of 'aimsandobjectives' (the two were rarely differentiated), Richard Peters and Lawrence Stenhouse argued for 'principles of procedure': that is, standards of individual or collective conduct. Rather than encouraging vague statements of intent, these would 'spell out, clearly and simply, the values and principles by which our everyday conduct will be guided and against which it may be judged.' Principles should guide the work of everyone who works in education, from school hall to Whitehall, says the Review. The ones it proposes are drawn from the evidence it gathered.

Entitlement. Government should specify in broad terms the character of the education and scope of the curriculum to which all children in England are entitled.

Equity. Government, local authorities and schools should work to ensure that every family and child, regardless of circumstance or income, has equality of access to the best possible primary education. They should also seek to narrow the gap in outcomes between vulnerable and excluded children and the rest.

Quality, standards and accountability. Government should define in broad terms the quality of the primary education which local authorities and schools should provide and the standards which should be achieved. However ‘quality’ and ‘standards’ should no longer be treated as synonymous.

Responsiveness to national need. Government should balance its proper concern for economic and workplace needs with attention to broader social and cultural imperatives.

Balancing national, local and individual needs. Local authorities and schools are well placed to identify local needs and educational opportunities, in consultation with the local community. The same principle applies at school level. Teachers have special nowledge of individual children, but parents, carers and children themselves are also highly knowledgeable.

Balancing preparation and development. Pupils are children *now*, not just future students and employees or trainee adults.

Guidance, not prescription. National and local bodies should move away from prescription towards guidance, and not always even that, unless schools request it.

Continuity and consistency. Government should ensure that its policies for each sector are in harmony.

Respect for human rights. Government commitment to the UN Convention on the Rights of the Child should be maintained.

Sustainability. Government, local authorities and schools should strive to act in ecologically sustainable ways.

Democratic engagement. Government should seek to engender a climate and discourse for education which is open and responsive, and schools should reflect this.

Respect for evidence. Government’s approach to evidence should be open and responsive, rather than politically selective.

Resources and support. Every new education policy should be funded to secure its implementation.

In conclusion we should note that **modern UK primary education features are**

✓ England’s primary schools have experienced two decades of continuous yet piecemeal reform about which considerable claims have been made, especially in relation to educational standards. However, the claims are not universally accepted and, properly assessed, the evidence may tell another story. In any event, the benefits and costs of all this activity need to be evaluated.

✓ British system of primary education was created to reflect a particular view of society and the place within it of the distinctly unprivileged masses who were to fill its schools. But today’s Britain is diverse, divided and unsure of itself. Some argue the virtues of multiculturalism. Others deplore the loss of social cohesion, collective identity and common values. Meanwhile, the gaps in wealth, well-being and educational attainment are far wider than in many other countries, and a significant minority of children and families remain at the margins. It’s time to look again at the relationship between education and social progress.

✓ Globalization brings unprecedented opportunities, but there are darker visions. Many are daily denied their basic human rights and suffer extreme poverty, violence and oppression. As if that were not enough, global warming may well make this the make-or break century for humanity as a whole.

✓ England’s primary schools are now part of a complex structure linking education with health, welfare and childcare, and children’s primary schooling with what precedes and follows it. Or, at least, that’s the intention.

✓ Primary education suffers more than its fair share of scaremongering and hyperbole, not to mention deliberate myth-making. Standards are rising. Today’s teachers merely follow the latest gimmick. Children’s behavior is deteriorating . It is time to move on from the populism, polarisation and name-calling which for too long have supplanted real educational debate and progress? Children deserve better than this from the nation’s leaders and shapers of opinion.

✓ Despite all this, and the considerable advances in research, there has been no comprehensive investigation of English primary education since 1967.

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PECULIARITIES OF SUBSTANDARD (SPECIFIC) LEXICON IN MILITARY PROFESSION

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The problem of language and society interaction is one of the most important which can't be resolved without accurate studying the operation of lexical items in various public layers and professional groups, without its careful analysis.

The actuality of the research is caused by the intensity of the development of substandard lexicon in military profession as the bases of the specific professional language. The functioning of this lexicon as the linguistic system is studied insufficiently. Nowadays, it is observed the fixed attention to corporate, professional languages, especially to "slang".

The orientation of the work is connected with the relevance of the social and linguistic researches, especially with the active jargons' penetration (including military) into a colloquial/spoken speech and journalistic style of the literary language, the implementation of jargon and slang into the literary language. Due to this situation it is obviously necessary to give the definition of a military slang, to show its interaction with the other subsystems. The actuality of the research is emphasized with the inclusion of the comparative aspect of the work, and the existence of anthropocentric approach to the studied problem.

The analysis of the references allowed revealing the special interest of scientists concerning the separate aspects of the structure and functioning of the lexical units. The problem of functioning and origination of the specific military lexicon and its peculiarities are left open.

The subject of research is made by the specific military lexicon, the process of its formation and development, its structure, semantics, the analysis of its functioning in the system of modern English.

The object of the research is the culture of the military personnel as an essential structural element of the modern society.

The research objective is to clarify the conceptual, terminological side of the specific military lexicon, the main regularities of the development and functioning.

Material and methods. The applied technique of the comparison with a military slang, slang of the English-speaking countries was emphasized by the linguists more than once as an important component. This technique allows generalizing the obtained materials as the result of studying of the different language systems. The similar analysis allows establishing some identities and distinctions of the studied language units.

Results and discussion. In this work the results of the research of the specific military lexicon of the English-speaking countries are used as the background material which allows revealing the characteristics of the military jargon, slang.

The mentioned research objective assumes the solution of the following specific objectives:

1) to define the place of the military jargon, slang in the system of the national language;

2) to show the interaction of the military jargon, slang with the other subsystems of the national language;

3) to describe the main thematic groups of the military jargon, slang;

4) to reveal the main peculiarities of the specific military lexicon (the military jargon, slang which is caused by the action of both extralinguistic and internal language factors by means of its comparison with the military slang of the English-speaking countries.

The methodological basis of research were the works of I. V. Arnold, I.R. Galperina, M. M. Glushko, M. M. Bakhtina, V. M. Leychika, V. V. Borisova, E.P. Voloshina, L.L. Nelyubina, A.A. Dormidontova, G. M. Strelkovsky, G. A. Sudzilovsky and others.

There are the significant works for the research in which from the culturological, anthropological, sociological and philosophical positions the theories of the subculture are considered in general (B. S. Erasov, L.G. Ionin, T.V. Kurchashova, A.V. Mikheyeva, N. N. Slyusarevsky, K.B. Sokolov, A.Ya. Fliyer, T.B. Shchepanskaya, etc.).

Different parts of the army (military) subculture are regarded in works of : D. L. Agranat (the sociological analysis of the cadets' life of the higher education institutions), K.L. Bannikova (the prepotent relations of the military personnel of the conscription service), B. L. Boyko (the linguistic worldview of the army subculture), V. V. Golovin, E.V. Kuleshov (rituals, folklore of soldiers), A.I. Kravchenko (the deviation of the military's behavior), M. L. Lurye (the subculture of non-manual relation), S. L. Panchenko (the legal aspect of the informal relations in the army), and also A.V. Pronoza (the research of soldier's folklore), A.V. Yudin (semiotics of military rituals), etc.

In the linguistics of our country the military jargon, slang in the capacity of the subject of the research of the scientists was seldom phenomenon. There is no standard term for this concept. There isn't the definition of this one.

The most thorough study in this field belongs to G. A. Sudzilovsky. The scientist gives the examples of the existence of the military slang in English, and at the same time he determined the studied concept as "words and expressions of English which are used for the designation of the military concepts first of all of the USA and UK armed forces. The author collected and translated some military jargon, slang, however he didn't reveal their areal attachment and lexico-semantic peculiarities weren't determined [3, p. 18].

In works of a number of linguists you can find the information not only about the military slang but also about the military jargon as the one type of the professional jargons.

So, in the monograph of V.A. Homyakov and T.M. Belyaeva " Substandard Lexicon of English" it is noted, for example, that the slang of the British military pilots during World War II could make the speech unclear not only for the detached observer, but also for the military personnel of the other branch of troops [1, p. 56].

A.D. Schweitzer in his work "A sketch of modern English in the USA" refers the military slang to "a special slang". He considers that the majority of military slang - the emotional colored equivalents of the military terms with the fewer connotations. That's why according to his opinion the military jargons and slang cover wider conceptual sphere, than the official terminology. A.D. Schweitzer also points out that the military jargon expressions have the possibility to remove into the military slang expressions [2, p.34].

In conclusion should say that the majority of authors don't share such concepts as "military jargon " and "a military slang". In our opinion, the essential difference between the military jargon and the military slang is the increased emotionality of slang and the lack of selectivity of the objects in it for linguistic representation.

In this article under of the military jargon and the military slang we understand the lexical units which are emotionally colored and emotive, reflecting the military routine and realities which are used generally in the military sphere but are known to all native speakers and used in communication process for the expressional function, but not for the purpose of the coding of the speech.

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FAMILY ANTROPONIMICON OF THE BESHENKOVICHI DISTRICT, VITEBSK REGION

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Regional studies occupy a significant place in the development of modern onomastics as a science. A.A. Lukashanec notes "just complete and comprehensive study of such onomastic microsystems is an urgent task of the modern Belarusian onomastics because it gives an opportunity to identify national specificities and peculiarities of the Belarusian onomasticon in general" [1, c.89].

The aim of the study is to identify the structural features of the surnames functioning.

Material and methods. The surnames of seven the largest settlements of the Beshenkovichi district, Vitebsk region: Ostrovno village, Bocheikovo village, Beshenkovichi township, Verhnee Krivino village, Drozdi village, Svecha village and Ulla township were used as material. In the analysis of factual material, we used the methods of linguistic description, comparative contrastive and also the elements of areal and statistical.

Results and discussion. We took the principle of the separation of names on the primary and secondary as the basis of structural surnames classification. For the first time this division was suggested by academician N.V. Birillo in the work "Беларускія антрапанімічныя назвы ў іх адносінах да антрапанімічных назваў іншых славянскіх моў (рускай, украінскай, польскай)" [2]. In this paper we consider the primary surnames.

The surname system of Beshenkovichi district is quite diverse. All types of surnames are presented here widely. A special place among them belongs to the primary surnames, it means that surnames formed from personal names and nicknames without adding formants. For example: surname *Baranok* comes from the nickname Baranok, *Bogach* – from Bogach. We can also include here such surnames as *Bulynya*, *Kukhto*, *Ravnopolets*, *Skrebotun*, *Sys*, *Chernukho*, *Shchuko*, *Shipulya* and others. Some naming can correlate with the nouns, others – with adjectives. Those surnames that correspond with the nouns may also partly correspond with derivative and non-derivative nouns. We can observe the same with the surnames which correspond with the adjectives: one - with quality, others - with the relative. Derivative surnames (*Belous*, *Vasko*, *Glebko*, *Matjush*, *Petrashko*) predominate over non-derivative (*Bely*, *Dyatel*, *Kisel*, *Moroz*, *Serebro*, *Shut*, *Shilo*).

Among the derivative surnames we can pick out several finals, which are most often found in the study area:

- ro: *Askero, Kazhuro, Motoro, Moshparo, Shamshuro*.
- uho: *Zalatuho, Zelenuho*.
- en: *Baboren, Beresten*.
- el/an: *Gegel*, *Dybal*, *Kreybel*, *Krel*, *Curmel*, *Shavel*, *Shkel*.
- ko (the largest group): *Belko, Demeshko, Glebko, Karpeko, Lazuko, Mamoyko, Petrashko* etc.

If we talk about the surnames formed from adjectives, they are few – 13 units: *Aktsyzny*, *Bely, Bury, Vyaly, Garny, Dolgy, Zolotoy, Zeleny, Skromny*, *Tolstoy* and etc.

The primary names dominate the Czechs, the Poles, the Slovaks, the Ukrainians among the Slavic nationalities. Also the primary names are rare in the Russian anthroponymy. In Belarus the primary names are 19.3 %, in the Vitebsk region – 30%.

Of the seven investigated settlements Verhnee Krivino village is the largest on the number of primary names, where the primary category is 33.7%. Almost the same number of primary names in neighboring villages of Drozdy and Svecha – 31% and 33%. In Beshenkovichi township – this figure is 25.5%. The slight decrease in the number of primary categories associated with the process of migration of inhabitants of the district center. Taking into account the geographical location of the village of Ostrovno that is closer to Russia, the primary type of surnames is less common - 15%. Ulla township and the village of Bocheikovo are in the west, closer to Poland, where, as we know, this type of names are not particularly common, and the primary names are fixed 25% and 29% here.

Conclusion. Thus, we can distinguish the following regularities in the study area: among the primary surnames the most common type is surnames that end in –ko Belko, Demeshko, Glebko. The primary surnames reach the highest concentration in Verhnee Krivino village (33.7%). Structural features of the functioning of the primary names depend on the geographic location of the village.

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THE DEVELOPMENT OF MOTIVATION FOR LEARNING

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Few educators would argue with the premise that pupil motivation is an important influence on learning. A pupil may arrive in class with a certain degree of motivation. But the teacher's behaviour and teaching style, the structure of the course, the nature of the assignments and informal interactions with pupils all have a large effect on pupil motivation.

The aim of our article is to analyse the distinctive features of the development of motivation for learning.

Material and methods. In our study the research literature explored on pupil motivation shows that it is one of the biggest challenges in teaching process. Motivation has an important influence on academic efficacy. In contrast, lack of motivation causes individual degradation, falling behind the class.

Results and discussion. Motivation is defined as the process that initiates, guides and maintains goal-oriented behaviors. A motive is what prompts a person to act in a certain way or at least develop an inclination for specific behaviour. Developing pupil motivation for learning includes three stages each of which comprises the use of specific methods and activities. The first one focuses on arousing curiosity. The following steps have positive motivational impacts upon learning.

We need to provide a learning environment and build trusting and respectful relationships with pupils, minimize pressure to engage in classroom activities, so pupils can feel encouraged to engage in actions on their own.

Learning is more likely to occur when pupils associate new material with previously learnt material.Therefore, we must help them to relate new information to old information.

A differentiated approach to tasks help to arouse pupils' interest in learning. Children who experience success in meeting one challenge become motivated. These motivated learners choose an activity that is slightly difficult for them, but provides an important challenge. When they successfully complete such a task children gain a high level of satisfaction. Consequently, we need to create challenges that pupils can master [1, p. 35].

The second stage deals with the perception of learning goals and their realization. The following steps support positive pupil commitment to a desire to learn and to undertake learning activities.

Pupils control their own learning by being mentally involved in the classroom. Therefore, we need to monitor pupils to ensure they are paying attention, thinking and processing.

We should help pupils to assess the perception of the material. Consequently, we need to help pupils to define the exact nature of the problem and work out a strategy for dealing with it.

Pupils' attributions for failure are also important influences on motivation. Pupils who believe that their new performance is caused by factors out of their control are unlikely to see any reason to hope for an improvement. In contrast, if pupils attribute their poor performance to a lack of important skills or to poor study habits, they are more likely to persist in the future. The implications for teachers revolve around the importance of understanding what pupils believe about the reasons for their academic performance [2, p. 27].

Educational system must evolve to meet the needs of today's pupils. Therefore, we need to define the significance of new material in life situations.

The third stage focuses on learning process, where pupils must learn to set a goal, master new means of learning activities, methods of self control and self –esteem. The following steps help to enhance pupils' motivation in learning process.

Teamwork and cooperative learning enable pupils to thrive cognitively, socially and emotionally. This work contributes to developing self-discipline and critical thinking. It establishes relationships among pupils. Moreover, they experience positive feelings of self-worth and feel a sense of achievement [3, p. 14].

The responsibility of teachers is to encourage the learning of their pupils by creating innovating ways of engaging and motivating them by integrating various forms of media and technology in the classroom.

Some educators point to the importance of including children in discussions about social and behavioral issues in the classroom, such as rules and procedures. Pupils given a chance in these issues will be much more likely to take them seriously. Therefore, it is important to empower pupils by giving them options and the opportunity to make decisions [4, p. 64].

We shouldn't allow pupils to be passive learners. We need to encourage them to solve problems themselves instead of demonstrating the "correct solution" ourselves.

We need to encourage pupils to design their own problems after each lesson. This method proves to be successful, because when pupils make problems themselves, they're pressured to understand the rationale of the type of problem they are working on [5, p. 43].

Conclusion. Teachers often teach many pupils over a course of a school day, and for a relatively short period of time. Given such brief contact with so many, it is easy to underestimate the influence that one's teaching practices, can have on any one individual. Current moves to implement the school philosophy may provide a more facilitative schedule for both teachers and pupils, but even in a highly structured school, teachers can take specific steps to provide a learning environment that will promote the motivation of all pupils.

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THE BLOG STRUCTURE AS HYPER GENRE

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Blogs began to get massive popularity during implementation of the technical possibilities of web 2.0. The rapid development of such virtual communication, its impact on the real events, where the words of the common man for the first time can be conveyed to a huge number of Internet users in all countries, determines the relevance of multifaceted study of the blogosphere. The purpose of this article is the allocation of structural features of the blog.

Material and methods. The key method in the allocation of the blog elements is a structured method by which a complex whole can be understood by highlighting the levels of the system, as well as studies of relations between elements.

Under the model of the blog as a network of hyper genre formation a macrostructure should be understood, which has a certain architectonics and includes a number of varieties of genre on the Internet, which consist of a subgenre formations. The network hyper genre formation operates in a global network in social and communicative situations that are determined by certain goals and objectives of the communicants. The genre variation of blog is an independent structure, which differs on pithy, media, pragmatic and linguistic characteristics. The subgenre formations of blog is a mandatory element of the blog, which has sustained structural and functional system, which is determined by a kind of blog genre.

Results and discussion. During the monitoring of modern Russian-language blogosphere the characterization of the blog in genre aspect has been made. Isolation of 7 major genre varieties of blog (Fig. 1) was the result of this work. The basis of selection includes such linguopragmatic parameters as "author", "main communicative purpose of the author", "addressee", "function", and the nature of content, formal and media properties. It must be said that it is possible the functioning of the blog as a pure genre formation, and as a syncretic structure, which includes a number of features of individual species.

Important structural components of a hierarchical system of genres in the range of hyper genre of blog are subgenre formations, which include the author's page, header complex, blog entries (posts), comments to records (Fig. 1).

Author profile of the blog is a section about the author / authors of the blog and has such variations of the name: "About the Author", "User info", "The author of the blog", "About Us," "About me", etc. Typically, this page may contain the author's name, the information about date of registration in a blog, a brief biography of the author, his geographical location, hobbies, occupation, different interests, anti-interests (what the author of the blog does not like most of all), and favorite idea, list of users who are friends, list of blogs that are signed by the author, virtual gifts, ways of communication with the author in different social networks.

The presence or absence some data in specific blogs and blogs of particular blog platforms is determined by technical capabilities of the platform, a form of the author`s positioning (explicit, implicit, explicit-implicit authorship) and genre variety blog. For example, in a network diary-type blog absence the author's name is possible, as well as some other information if the form of authorship is implicit. However in some cases it is necessary to specify the name (for example, in discussion blogs politicians) because public positioning is important within a network environment in this case.

The header complex system of the blog includes the domain name, which is the network address of the blog; main title of the blog, located on the top bar of the browser, and also coincides with the name of the blog; subheading; titles of blog entries; headings, which include writing a blog; headers information units, and in some cases, the introductory part of the blog entries to hyperlinks "read more" and the titles of comments to the author's notes.

The subgenre formations of blog contains the following components: the author’s avatar, date of writing, recording, record title, the announcement of record, record full details under the link "more info"; link to add comments and constant link to record; reference to number of comments.

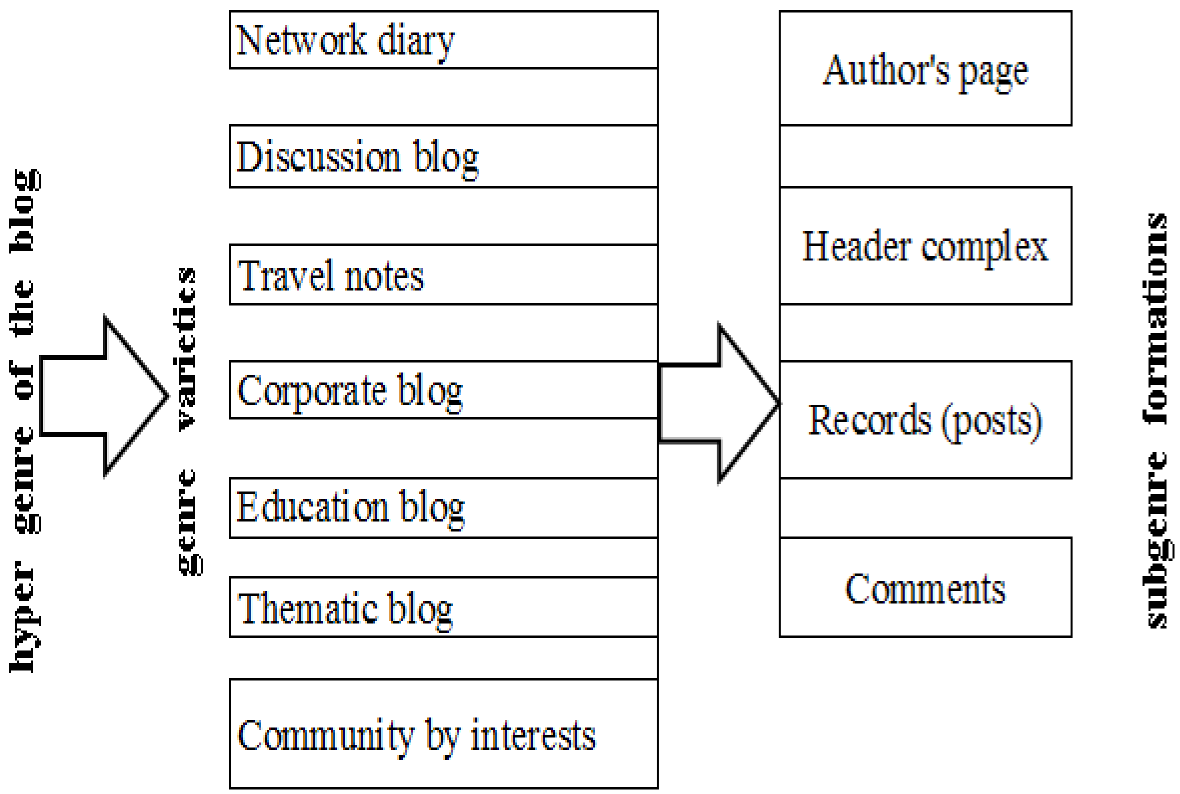

Fig. 1 Structure of the blog in genre aspect

Separately, it should also consider the subgenre formations of blog comments. Comments of the blog entry consist of a user name (nickname), the time of sending, the comment field "header" and the most immediately comment. Such comments of the posts as the records of blogs may include hyperlinks to various additional sources of information. At the same time blog readers who comment on posts take an active part in the creation of hypertext blog by enlarging the information array.

The system of elements of hyper genre of blog is presented in Figure 1.

This system consists of the following components: an internal structure, which is the ideological content of the blog is determined by kind of genre; external structure, which includes the typical architectonics of the blog consisting of a set subgenre formations, and the form of the interaction of these structures, where the hypertext link is key.

Extrapolating study by O. Moskalskaya on the system of elements of the blog we can say that the integrity of the blog, the relationship of its parts (coherence) appears simultaneously in the form of semantic, communicative and structural integrity, which are the relationship between the content, form and function [1].

Conclusion. Thus, the model of hyper genre of blog has a discrete and hierarchical structure, including external and internal levels, which reflect the total formal-semantic device intended to convey the meaning of all of the blog as a whole. The ratio between these structures is not limited to the subordination, the internal structure can affect to an external structure actualizing it and causing.

In the genre aspect the blog is a network hyper genre formation, which consists of varieties of genre and subgenre formations.

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SCIENTIFIC PUBLICATIONS AS A SOURCE BASE FOR IMPROVING PROFESSIONAL PROFICIENCY OF UNDERGRADUATES

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Veterinary medicine of today is an independent fundamental science combined with excellent clinical practice and challenges of education of a new generation of veterinarians. It synthesizes both the bulk of the whole spectrum of scientific knowledge, the latest methods of economic management and competence-based educational strategies. Many experts in the field of veterinary medicine are not only recognized authorities in the scientific community of biologists, physiologists, chemists etc., but also are known as successful organizers, leaders in veterinary service able to provide a high-quality assistance not only to farm animal, but practically to any objects under their competence.

The first half of the XX century was a turning point in the development of veterinary business in Belarus, which greatly contributed to the organization of systematic veterinary training of qualified personnel and the development of scientific research in the field of veterinary medicine. The pre-war and post-war periods are marked for creation an extensive system of higher and secondary education in the country. The introduction of a number of legislative acts contributed to systematic training of highly qualified veterinary personnel and the development of scientific research work in the field of veterinary medicine [2].

However, any scientific, educational, industrial advancement requires a proper practical and methodological support that involves the development and publication of related materials. Scientific communication becomes crucial for a worldwide distribution of knowledge and development of technology as a fruit of applied science and introducing the results to increase living standards. To study the role of scientific publications as a source base for improving professional proficiency of undergraduates is the purpose of this paper.

Material and methods. The methodological basis of the investigation are works of Belarusian and foreign scientists on the history of veterinary education. A complex of methods such as analysis, systematization, generalization are applied for the research.

Results and discussion. At the beginning of the XX century, the range of organizations and institutions engaged in publishing was expanded. Active participation in this work was taken by institutions, which did a great deal of educational work. Official materials (reports, journals, presentations, and so on) were issued due to their support as well as books and brochures on various issues of agriculture, medicine, chemistry, veterinary medicine, economics, and public education. Publication of agricultural literature was a deal of agronomic organizations and agricultural societies. At the beginning of the XX century a number of books on agricultural sciences increased 2-4 times in comparison with the second half of the XIX century. While the content of publications became more scientific and systematic in character under the influence of a sufficient progress in agriculture. Papers which addressed the issues of using mineral fertilizers, various technical means, introduction of more advanced methods of farming began to appear. Totally, in 1901-1917 about 245 papers in the Belarusian language were published. These are practically oriented works on medicine and agriculture. In 1912 in Vilna, and in 1914 in Minsk the first agricultural journal in the Belarusian language "Sakha" ("Soha") appeared. For enlightening important agricultural issues "Sakha" was awarded a silver medal at Agricultural Exhibition in Vilnius (1913) and in Minsk (1914) [1].

The beginning of the XXI century has witnessed a significant increase in the use of various highly efficient technologies, in the acquisition and dissemination of relevant information, including scientific and academic materials.

The library of Vitebsk State Academy of Veterinary Medicine (counting about 142 thousand 500 scientific works) and academic-methodic department held in its structure promote to concentration of the best scientific teaching and scientific-methodical materials for the improvement of the educational process, methodological support of educational and out of class activity, developed by the faculties and departments. They provide practical assistance to undergraduates in mastering scientific oral and writing skills. They provide work associated with publishing activities both of scientific, teaching stuff and students of the academy.

As a result of students' working with scientific information sources they actively participate in scientific communication (conferences, workshops, seminars etc.) and some of them have about 20 publications in scientific journals by the time of graduation.

Conclusion. Defining your own way of professional development requires a certain algorithm of actions, which involves the accumulation of learning and research skills. Thus, the ability to manage one's own activity on working with information sources, the ability to design scientific papers and present the results, analysis and evaluation of academic activity are realized in the process of direct investigation of published papers as well as by personal scientific communication.

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INTERACTIVE TECHNOLOGIES IN TEACHING ENGLISH

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For many years teachers were told that the technological revolution was just around the corner and that we would all be using computers in class on a regular basis. But for a long time that promise (or threat) remained unfulfilled. For most people, computers were a Friday afternoon extra – providing some added entertainment but hardly a central part of a course.

But nowadays everything has changed. We have passed the tipping point. Suddenly, new technology is widely available, much cheaper, in schools, in people's homes and in their pockets. It also works and is genuinely useful. This means that teaching is just beginning to undergo a huge change, the implications of which are not fully clear [1, p.334].

Enlisting and describing all interactive technologies might require a book. The aim of this article is to motivate teachers and learners to use interactive technologies in order to improve their skills and diversify studying process.

Material and methods. A short list of some key technologies in education must include:

- Interactive whiteboards;
- The Internet;
- Powerpoint and other presentation software;
- Tablet computers, netbooks, iPods and podcast players;
- Web-quest;
- Case studies;
- Virtual worlds;
- Shared learning and social media.

Results and discussion. Many of young students have grown up with 21st century digital technology; it is a part of their normal world: familiar and well understood. Their teachers however, are trying hard to catch up and understand – and often having problems. But just because someone is young doesn't mean they are *de facto* technologically adept. Just because a teacher is older doesn't mean that they can't use the Internet intelligently. There are a lot of uses of technology that are specific to education and it is actually teachers who introduce these things to students [1, p.335].

The 21st century teacher needs to take the time to be comfortable with those technological tools that are useful for the students. It's no longer acceptable to write off their excuses such as *I'm not technical* or *it's not real teaching.* Technology is at the heart of education now. The question is: how can we best use it to improve teaching and learning?

The answer is simple: teach as normal, forget all the fancy stuff, at its simplest, interactive tool provides you with a fine way to teach as you usually do. When you need to use a board, use interactive whiteboard instead. It provides a large range of opportunities: from displaying good work, reviewing marked work, discussing drafts and working on them together to integrating Internet-based materials into the lesson. A whole new world of materials is out there waiting to be used creatively: banks of images, news websites, magazines, stimulating lectures and presentations, YouTube videos. Suddenly the whole world is available instantly in your classroom. This is the teacher's dream come true [1, p. 337].

Besides interactive whiteboards, the use of presentation software is another sidestep away from dull class work. For many teachers presentation software has become an important way of organizing, storing and showing learning content. The basic concept is a slide show with pictures, text, audio, video clips in any mixture. It gives teachers a good possibility to get all the students actively involved. Preparing presentations and leading them as a great interactive project seems to motivate all ages [2, p.251]

Conclusion. It might be necessary to point out that we need to make sure that we use technology to a real purpose. A computer can't teach the students any more than a blackboard or a cassette recorder can. It is all down to what you do with the tools.

But it is very easy to fall in love with a new tech tool for its own sake. It can take a long time for a teacher to learn how to use a new piece of equipment or software and to feel comfortable with it. The danger is that all your energy goes into that challenge and you don't have the same time for thinking about how you will actually use it with your classes. Which means that early lessons with a new tool can tend to be technology-focused, showing off the cool new tricks, rather than aim-driven. You need to get past that time and get fluent enough with the technology so that you can start to think how to really exploit it rather than just use it [2, p.274].

This is the future. It's not here yet – but you can watch it arriving. And you can help make it happen.

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EXPRESSIVE MEANS EMPLOYED BY OLGA PEREVERZEVA (IN RUSSIAN LITERATURE OF BELARUS)

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This article focuses on the actual problem of formation of Russian literature in Belarus; in particular it provides an analysis of Olga Pereverzeva's poetry, her main expressive means, and stylistic devices. O. Pereverzeva uses a game of rhythm, intonation and sound in her poetry. The object of this paper is to uncover these elements.

It is important to note that at the present time there is a growing interest to Russian literature in Belarus. It is connected with the following facts, consequently coming out from each other. First of all, the radical changes in the social and political life of our country after 1991. Now we have two national languages and as a result we observe a lot of works of Belarusian poets and writers which they create in Russian. This part of literature is called Russian literature in Belarus. Besides, Russian literature in Belarus, like the literature of every period in history, has its own genre system as well as its own aesthetic and artistic pursuits.

Material and methods. There are not many works devoted to Russian literature in Belarus. The anthology of A. Avrytin describes the main development tendencies of the modern Russian literature in Belarus [2]. It is an essential resource of Russian literature in Belarus for researchers looking for clear introductions to key concepts, accessible discussions of theory and practice through illustrative examples, and critical engagement. For investigating phenomena of Russian literature in Belarus we use the scientific methods of observation and description. As we see much attention is being paid to the conceptualization of the current literary process. As researchers note, the modern Russian literature in Belarus is developing in touch with the whole Russian literature in the sense of the problems at issue, themes, style, expressive means and genre [1, p. 335-336].

A good example of this is poetry of Olga Pereverzeva. She is a strong personality, with a high power of feeling and a refined mastery of poetic technique. Olga Pereverzeva continues poetic tradition of M. Tsvetaeva and creates her personal style.

Results and discussion. In Russian literature of Belarus Olga Pereverzeva is known for her sensitive poetry. It should be noted that the need to express and understand emotions is a fundamental part of human communication. Poetry has always been one of the best means of expressing thoughts and feelings. Poetry is imaginative and emotional interpretation of life. Poetry deals with facts, experience and problems of life, but firstly, it relates them to our emotions, and secondly, it transfigures and transforms them by the exercise of imagination. It treats reality imaginatively, colours it with emotion. Imagination and emotion predominate in poetry; they are the essential qualities of poetry.

As discussed before, Olga Pereverzeva uses a specific language, structure and techniques in order to be effective. In her works we can find special intonation: her poems are reminiscent of the ships conquering the stormy waters of the ocean of poetry. She burst into literature like a squall. Her poems can be describe by the phrase of M. Tsvetaeva «I do not believe in poems which pour slowly; I believe they should rush from your heart» [3, p. 3-8]. Olga Pereverzeva speaks to us with a specific language; and uses different expressive means: intonation, alliteration, rhythm, lexical repetition, anaphora, ellipsis.

Intonation of her poems is one of the most effective means of emotional influence on the reader. In written speech intonation and stress are conveyed indirectly by graphical expressive means and by a special syntactical arrangement of utterance (such as inversion, parallel constructions and other syntactical stylistic devices). Intonation colours the whole statement and is an important means of creating emphasis of words and phrases.

In poems of O. Pereverzeva we also find alliteration. This is a deliberate use of similar sounds in close succession achieving a definite stylistic effect. It adds emotional colouring to the utterance suggesting the attitude of the writer to what he is describing. It is a peculiar musical accompaniment of the main idea of the utterance.

She often uses rhetorical questions as one of the main expressive means. Having the form of an interrogative sentence, a rhetorical question contains not a question but a covert statement of the opposite. The most common structural type of rhetorical question is a negative-interrogative sentence. But it may also be without an open negation. Since the implied statement is opposite to what is openly asked, a rhetorical question may also contain irony[4].

In her works we can find different types of repetition: lexical repetition is often used to increase the degree of emotion; the repetition of the same elements at the beginning of several sentences is called anaphora; the repetition of the same elements at the end of several sentences is called epiphora**.**

Ellipsis as expressive means is also frequently used in O. Pereverzeva's poetry. As in colloquial speech, this device consists in omission of some parts of the sentence that are easily understood from the context or situation.

Conclusion. There is an increasing interest to the phenomena of Russian literature in Belarus. In this article we describe actual problems of formation of Russian literature, its marginal cultural status. However, there are a lot of bright examples and O. Pereverzeva is one of them. Her poetry is notable for its original seeing the world; O. Pereverzeva continues poetic tradition of M. Tsvetaeva and at the same time she creates her own poetic style uses a particular language full of specific intonation, rhetorical questions, different types of repetition and ellipsis.

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PSYCHOLOGICAL AND PEDAGOGICAL DETERMINANTS OF THE ESTABLISHMENT AND FUNCTIONING OF THE EDUCATIONAL SPHERE

INTERNET ADDICTION AMONG MINORS: FEATURES OF LIFE IN THE INTERNET AND REASONS TO CHOOSE ONLINE LIFE

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The problem of Internet addiction has become an urgent issue due to the increasing computerization and "internetization" of Belarusian society. At the moment, the number of children and adolescents who are able to work with computer programs, including playing computer games and surfing the Internet, is increasing. It should be noted that the process of computerization has not only the undoubted positive value but also the negative effects, which influence the socio-psychological health of children and adolescents. The negative consequence of this process is the phenomenon of computer addiction. The purpose of the article is to study the characteristics and reasons of the Internet addiction among adolescents.

Material and methods. The material of this study is the works of scientists devoted to the problem of the Internet addiction among adolescents. The theoretical methods are used: analysis of the literary sources and Internet resources on this topic; empirical: questionnaires; data processing methods: qualitative analysis of the results.

Results and discussion. Nowadays the phenomenon of the Internet addiction is attracting the attention of scientists, psychologists, media. This phenomenon has been studied in the foreign psychology since 1990. The concept of "Internet addiction" appeared in 1992. The experts qualify such kind of addiction as a particular emotional addiction caused by technical facilities. The computer addiction is a form of addictive behaviour and is characterised by a desire to get away from everyday life by transforming of emotional and mental mood. At that moment, a man not only puts on the back burner the acute problems, but also the work of his mind slows down, and very often the individual and personal development completely stops [1, p.10].

In order to identify the level of use of computer and Internet resources: duration, frequency and reasons for using, the most popular resources among adolescents, their attitude to the Internet; we have carried out a study of the Internet addiction based on the State Gymnasium №8 of Vitebsk city among 50 pupils (58% of boys and 42% of girls), the average age is 15-16 years.

On the basis of the results of the study, at the moment 94% of respondents have a computer at home, and that fact greatly facilitates the access to the Internet resources, and also allows to spend more time for this type of activity as compared to those pupils who use the computer at friends’ (2%) or in specialised clubs (4%).

More often the respondents visit social networks (VKontakte, Odnoklassniki) – 56% and search engines – 26%, less often they visit entertainment, gaming and dating sites.

At the same time the need for use the Internet among the respondents varies:

- are indifferent – 14%;
- periodically there is a need to surf the Internet – 40%;
- there is a daily need to surf the Internet – 22%;
- can not imagine their life without the Internet, use constantly – 10%;
- use only if the need arises – 14%.

Increasingly, one can hear in the media about the negative impact of Internet resources on adolescents. According to the majority of respondents it has no effect on health – 44%; more than a third – 34% admits little impact; 8% notes health deterioration when the excessive use of the computer and the Internet has place, and remaining 14% finds it difficult to answer.

22% of respondents reported a decrease in communication with friends and family with the appearance of the Internet, 4% said that the Internet replaces the real life, 74% did not notice any impact on communication with others.

It is worth noting, that not only social networks, but also search engines are popular among pupils, and 80% of respondents said that the Internet helps them to understand difficult educational programmes, to find the necessary information quickly and in an accessible form. Only 8% of adolescents have noted the negative impact on their studies due to uncontrolled surfing in the Internet, the other pupils do not note the dependence between the use of the Internet and the success/failure at school.

Also the diagnostics of the Internet addiction in order to identify the excessive use of this phenomenon in the life of teenagers was conducted among the adolescents. So on the results, 32% of respondents use the Internet if necessary, and it doesn't have a significant impact on their lives. The amount of points of 62% of adolescents says about the serious impact of the network on their lives, and among 6% of adolescents the dangerous symptoms of Internet addiction are identified and the need for treatment of this problem by a psychologist is noted.

In this regard, it is necessary to specifically prepare pupil for life in the information society by enhancing educational work in the family and at school. Today there is an acute need for new methods to control and prevent the negative social and psychological consequences of informatization, to promote the formation of moral and volitional qualities of personality, attitudes, beliefs, moral concepts, habits, rules, and norms of behaviour in the information society.

Conclusion. Thus, at present quite a significant proportion of children and adolescents not only has a positive attitude towards computers, but also spends a lot of time working with them. This is due to several reasons. Among these reasons – the peculiar to children and adolescents high cognitive motivation, which is expressed in their craving for new things, things which are not yet known; the awareness of the unique capabilities of the application of modern information technology for learning, communication or entertainment; the independent performance of creative work in the frames of the projects which have a special (higher) interest, as well as the presence of typical for adolescents psychological problems and difficulties – for example, difficulties in establishing and maintaining relationships with others.

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METHODS TO STRENGTHEN THE EMOTIONAL IMPACT ON PUPILS WHILE TEACHING CHEMISTRY

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Chemistry it's a life that is worth comprehending.

Chemistry contains a great humanitarian potential, which includes philosophical, moral, civic, aesthetic and developing beginnings [1]. "Life is a series of chemical reactions," this statement seems excessive, but it clearly shows the important role of chemistry in the modern world. Often chemistry lessons at school are perceived by pupils as a duty, because it is not always clear why study this subject and where the acquired knowledge in chemistry will be useful later in life. It is important to pay attention to the value orientations of modern graduates, which reflect their individual personality and social feelings, individual psychological characteristics of personality.

The purpose of study is to form students' need to study chemistry, conscious awareness of chemical education.

Motive is experiences that encourage the commission of the act. Motive expresses the impact on the person of the objective world, which is reflected not only in mind, but also born with a certain attitude to reality. In motives approved and secured what is valuable to the individual so the motivational sphere is seen to be core in its structure. The needs, motives, goals and interests are specified in the structure of the motivational sphere [2]. Especially important factor contributing to the formation of students' motivation in learning chemistry is strengthening the of practical orientation of its content. Do not forget that chemistry plays a very important role in a human life.

Material and methods. The methods used in the research were theoretical and empirical.

It is important to focus students attention on social and moral aspects of chemistry, to "humanize" the material studied in class. For example, considering the phenomenon of radioactivity, the teacher introduces students to M. Sklodovskoy-Curie works, whose whole life is a brilliant feat of selfless work in the name of science. The motto was the words of her husband, a prominent physicist Pierre Curie: "Whatever happens, though parted soul with the body, we have to work." Only in 1902 they received about DG pure radium chloride. In 1906, as a result of an accident Pierre Curie died. However, M. Sklodowska-Curie, without losing optimism continued to work. She was a woman of great and generous soul, she organized the first widespread use of radiation for medical purposes, she trained more than 150 people working on the X-ray machines during the war. Her second Nobel Prize she donated to the fund to help the wounded. M. Sklodowska-Curie died of radiation sickness.

Results and discussion. Ecologically oriented chemical experiment also has a positive effect on developing among students motivation to study chemistry, contributing to the formation of ecological culture, which is the basis of respectful attitude to nature in general. This kind of experiment eliminates formalism in knowledge because the chemicals are not perceived by students as something abstract, but as part of their environment. One example of environmentally directed chemical experiment is the experience "acid rain". Teaching experience of many professionals experts show that significant interest among school children is caused by illustrations of relationships with literature, art and even music. For example, considering the sulfur compounds - sulphides, you can tell students about cinnabar (киноварь), which has been known since ancient times. For bright red colour the Indians called it "blood of the dragon". In ancient Russia cinnabar was one of the most widespread mineral paints: copyists of books wrote prompts with it. Cinnabar entered into the history of cosmetics. Ancient Egyptians used it as blush. The Incas of South America wore it as a eyeliner. However, it was always done once a lifetime in the day of the wedding. In China, this paint was used to make various confectionery products more beautiful and appetizing [3]. Having intrigued students with such material, the teacher arouses their interest in the study of the topic.

Conclusion. Thus the problem of the revealing of methodical conditions in emotional and value formation of pupils attitudes towards chemistry is seen by us as being a burning issue. This particular problem made us chose the relevant area of the started masters research.

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USE OF PROGRAMME ‘MYTEST’ IN ASSESSING STUDENTS` ACADEMIC ACHIEVEMENTS

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Nowadays the national higher school introduces innovations to optimise the students` cognitive activity in the learning process. This causes changes in the components` content of the functioning didactic system. The management of any didactic system is based on the principle of feedback, realised with the help of the evaluative-resultant component. Pedagogical practice shows that the content of students` cognitive activity in the learning process depends on the content, forms and methods of assessment and evaluation of students` academic achievements. Well-organised objective assessment is essential to improve the quality of training qualified specialists. The aim of our research is to ensure objectiveness and efficiency in assessing students` academic achievements.

Material and methods. Discipline ‘Discursive practice’ (specialisation 1-02 03 06 Foreign languages (with specifying languages)) was chosen as an example to carry out the research. The following research methods were used to achieve the raised aim: analysis of scientific literature, classification, generalization, analysis of the products of the activity.

Results and discussion. In our opinion, assessment is a component of the didactic system, aimed at the identification, measurement and evaluation of students` academic achievements. In the educational standard of higher education of the first degree [1] the following forms are offered to assess students` academic achievements: oral (interview, presentation, oral exam, etc.), written (test, quiz, essay, written exam, etc.), oral and written (exam, test, project method, business game), technical (e-tests, e-workshops, etc).

Taking into consideration the features of functioning competence-based didactic system in the national higher school, we have identified the following levels of assessment: memorisation, recognition, reproduction; understanding, interpretation, application; analytico-synthetic search; creative thinking, professional application [2]. In the process of assessing there is a close relationship between these levels that helps to identify the quantity and quality of students` academic achievements with the help of different forms of assessment.

In our opinion, to ensure the objectiveness and efficiency of assessing students` academic achievements the programme Mytest can be used. This computer programme is publicly available on the Internet and aimed at testing knowledge, collecting and analysis of obtained results. This form of assessment allows to use the following tasks to assess students` academic achievements: single choice, multiple choice, establishing the order, establishing the compliance, indication of the truth or falseness of the statements, manual enter of number (numbers), manual enter of text, the permutation of letters, filling gaps. The use of this programme provides the objectiveness of assessment because the teacher is not involved in the process of identification, measurement and evaluation, he only organises and monitories it. The essence of the efficiency is that the programme MyTest helps the teacher to assess the academic achievements` level of the whole group of students at a time, providing common requirements, saving time.

The opportunities of this programme can be used in the learning process to assess students` academic achievements on discipline ‘Discursive practice’. This discipline is aimed at forming linguistic competence of a specialist, professionally-prepared for teaching a foreign language. Let`s consider the content of the tasks that can be applied to identify, measure and evaluate students` academic achievements on the discipline according to the levels of assessment:

• single choice, for e.g. *‘Choose the word (A, B or C) which is the odd one out in each group*’ (level I); *‘Look at the text below and fill in the gaps using the appropriate preposition A, B or C’* (level II); *‘Read the text and choose the best summary’* (level III);

• multiple choice, for e.g. *‘Listen to the tape and choose the words you hear*’(level I); *‘Give synonyms (A, B, C or D) to the following words in the text using your active vocabulary*’ (level II); *‘Choose the topics from the given below which are discussed in the text*’ (level III);

• establishing the order, for e.g. *‘Put the following words into alphabetical order*’ (level I); *‘Order the words to make sentences*’ (level II); *‘Listen to the track and number these events in the order you hear them on the tape*’ (level III);

• establishing the compliance, for e.g. *‘Match the words (sentences) and pictures* (level I); *‘Complete the second sentence so that it means the same as the first one*’ (level II); ‘*Listen to the interview with N and match the questions with their answers*’ (level III);

• indication of the truth or falseness of the statements, for e.g. *‘Decide if the spelling of the words is right or wrong*' (level I); *'Decide if the explanation for the following words is right or wrong* (level II); *'Do you agree or disagree with the following statements according to the text?*' (level III);

• manual enter of number (numbers), for e.g. *‘Read the text and put the paragraphs in the right order*’(level III);

• manual enter of text, for e.g. *‘Define the noun expressing emotional state in each sentence*’(level I); *‘Using your active vocabulary give English equivalents to the following words and word combinations*’ (level II); *‘Complete the sentences using the facts from the text*’ (level III);

• the permutation of letters, for e.g. *‘Put the following letters into the right order to make up words expressing feelings’* (level I);

• filling gaps, for e.g. *‘Fill in the missing letters in the words’* (level I); *‘Complete the sentences with the right form of a verb from the list’* (level II); *‘Complete the text with sentences A-F below’* (level III).

Quantitative measurement and evaluation of students` academic achievements with the help of these tasks is automatically carried out by the programme on the base of the 10-point evaluation scale recommended by the National Ministry of Education. The contribution of the tasks to the mark is different according to the chosen level: I level – 1 point; II level – 2 points; III level – 3 points; IV level – 4 points. The analysis of the students` choice of tasks according to different levels helps to identify the quality of students` academic achievements.

The inability to assess students` academic achievements on the level of creative thinking, professional application (IV level) is the disadvantage of this computer programme. According to the functioning competence-based didactic system assessment of students` academic achievements should be focused not only on knowledge, skills for its application, but also creative thinking, professional skills. The tasks should be professionally-oriented, scientific, integrated with the future profession, formulated in accordance with the requirements of educational standards to the formation of professional competence in upbringing, methodical, scientific, administrative and innovation activity.

Conclusion. Thus, the use of the computer programme MyTest, ensuring objectiveness and efficiency, allows to assess students` academic achievements on discipline 'Discursive practice': the level of language aspects and types of speech activity proficiency. However, this programme does not allow assessing the ability of students in creative, professional activities, their willingness to search for solutions to new challenges associated with the absence of common algorithms.

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TO THE PROBLEM OF A SPECIAL SECONDARY EDUCATION STUDENTS' LEADING PSYCHOLOGICAL PROTECTION STRATEGY

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There is an opinion that eachperson is characterized bysome certain type of psychological defense. The difference in a psychological defense is caused by many factors, such as temperamentfeatures, nervous processes speed, socialization and adaptation level, social status. It is just the short list of thethings that can affect person's behavior model. There is a great amountof differenttypes of psychological defense. The first scientist who started to describe this topic wasS. Freud [1].

The psychological defense mechanisms concern not only the person's activity, but also his communication interaction with other people. It is known that the communication can posessboth positive andnegative character. When some ofthe interaction situationsareunpleasant for the person, the communication process joins the psychological defense strategy.

Material and methods. The research was basedon "Vitebsk state industrial and construction college". Young men and girls aged from 17 till 20 took part in the research. Total amount of the respondents is 24.5 of them are girls and 19 are young men. The examination procedure had a group form. Average pupils' age is 17.7. To elicit students' leading psychological protection strategywas used the diagnostic and dominant strategy of the psychological defense in V.V.Boyko'scommunication.

Results and discussion. Let's discuss the results of theyoung men ina special secondary education students' leading psychological defense strategy. 5 young men use the avoidant behaviour as the leading strategy ofa psychological defense. It makes 26.3% of the total number of the pupils who took part in the research. The aggression as a kind of apsychological defenseis more often used by 8 male respondents that make 42.1%. The peaceful strategy of a psychological defense is used by5 people that make 26.3%. The combination of peacefulness and avoiding behaviour as a psychological defensestrategy is only used by 1 young man that makes 5.3%.

Suchdefense mechanismsin person's mind providehis necessity in the protection against apprehension. They preserve a constantself-appraisal and habitual world image. It is necessary to understand that the defense mechanisms always act on the unconscious or semi-conscious level as their task is to limit some events that are going on in man's consciousness [1].

Conclusion. There are defense mechanisms inthe life activity of any healthy person. They represent some peculiar filters thatafter passing information througheither block or distort it in such way that it loses its originally menacing character for the person. The defense mechanisms can appear only when some information or someone's actionsdiffer from person's internal view of a situation and can disturb or cause internal apprehensionand anxiety [2]. Thus, it is noticed that the aggression is the most widespread strategy of a psychological defense betweenthe young men in this college. Further investigation ofa special secondary education students' leading psychological protection strategyis planned to continue.

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THE EDUCATIONAL PROCESS IN TERMS OF THE INTEGRATED TRAINING

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Problems of special education today are among the most important in the work of Ministry of Education, as well as the system of special correctional institutions. The social situation of student`s development in the conditions of private educational institutions is not conducive to the acquisition of new social relationships and preparation for independent life. The child is not possessed role behavior, he is helpless, because he isn`t adapted to the constantly changing conditions of society.

The student is not included in the social interaction that develops mobile behaviors and causes socially desirable changes in personality. Social development of the child, his social rehabilitation involves the incorporation process in the nearest environment. In special boarding schools living space of pupils is limited. World of internet is perceived as the only possible reality. Successful integration into society is difficult [3].

The purpose of this study – to identify the main organization features of educational process in the conditions of integrated training and education.

Material and methods. Problems of integrated education are studied by M.V. Shved, V.I. Oleshkevich, A.N. Konopleva, T.L. Leshchinskaya, N.N. Malofeyev et al.

To investigate this problem, such scientific methods and techniques as the analysis of statistical data, the formalization of the material, method of grouping were used.

The study was conducted on the basis of secondary school № 8, Novopolotsk.

Results and discussion. Tasks of adaptation the children with developmental disabilities to reality, the need to compensate the lack of social development, encourages the search for other ways of training and education, have led to a rethinking of the experience and the development of new pedagogical ideas and approaches.

Realizing the right of a child with special needs to receive an education in accordance with educational opportunities and adequate health among his residence (Law of the Republic of Belarus "On education of persons with special developmental needs (special education)" allowed to introduce the practice of learning a new form of organization of educational process – integrated training and education [1, 4].

Integration (latin "integer" – full) in the education system means creating a unified educational space, the convergence of general and special education, the education of children with special needs in conditions as close to normal environment with minimal restrictions. Integrated education is seen as the training and education of children with developmental disabilities in institutions of general education together with normally developing children [3].

According to the 2013/ academic year integrated training and education at the level of general secondary education was carried out in 208 special classes (1580 children) and 5377 classes of integrated training and education (11001 children) [2].

Speaking directly about school № 8, Novopolotsk, in 2013/2014 academic year there were enrolled 37 children with special needs in the 14 integrated classes (from 1st to 8th), and 5 children in a separate 9 form special class.

Training and education of students with disabilities has a correctional orientation, is carried out with use of information and communication technologies, tools and methods that take into account the specifics of students` psychophysical disorders.

Organizational forms of integrated training and education at the level of secondary education are:

• a special class;
• integrated training and education class of full occupancy;
• integrated training and education class of incomplete occupancy.

Acquisition of special and inclusive classes is carried out by the education authorities on the basis of the decisions of local Executive and administrative bodies, conclusions of correctional work center and agreement of the legal representatives of the child with the conclusion of correctional work center. The occupancy of special classes is [3].

Education process for children with disabilities in special and integrated classes built on the basis of educational and program documentation corresponding special, secondary or special school (curricula, teaching special education programs).

Conclusion. We would like to emphasize that integrated training and education occupies a special place in a number of actual problems of special education. Integrated training and education – a form of organization of special education, in which the training and education of children with special needs is carried out in educational institutions, that create special conditions for residence and education of such children.

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PROJECT WORK AT SCHOOL: PROS AND CONS

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The last few decades have witnessed a significant rise in popularity of project work at schools both in Russia and abroad. The reason lies mainly in the shift in educational philosophy from giving students ready-made sets of beliefs to developing their autonomy and self-study skills. Project work as a form of creative work done by a student or a group of schoolchildren has a great educational value and huge potential for learners' development. It encourages exponential growth of motivation and interest in studying, cross-curricular approach in learning, it develops children's social competence, creativity and inventiveness.

Material and methods. The survey of 246 learners carried out in Russian secondary schools revealed great interest in project work. Russian schoolchildren regard project work as a preferable variant of a school assignment done both in class and as an extracurricular activity. They name several advantages of project work over other school activities which can be divided into 5 groups:

1. learners' freedom at all stages of project work (as shown by such remarks as: "freedom of choice", "freedom of action", "you can do what you want and fulfil your wishes", "it is up to you what materials to choose to implement your ideas in practice", etc.);
2. active and creative nature of project work which provides opportunities for self-actualisation ("active learning", "to create something of your own is always more interesting than memorizing what somebody has told you", "it is an opportunity to show your worth", "it gives you a chance to demonstrate your skills and abilities", "it encourages inventiveness", etc.);
3. satisfaction of the learners' need for affiliation ("you get to know your classmates better", "the frequency of interactions with your classmates is increasing", "it unites everybody", "you find out your classmate's viewpoint on the topic which interests you personally", etc.);
4. the level of knowledge that learners achieve ("deep knowledge in a new area", "you apply the knowledge acquired from teachers and books without copying ready-made answers", "you work out

interesting ideas which can be put into practice", "you implement your knowledge in practice", etc.);

5. development of various skills and abilities ("it encourages creativity and inventiveness", "it develops imagination", "it teaches you to interact with different people", "you learn to respond to unexpected questions: it's important to understand what you're asked about and reply clearly", "it teaches you to prove your point of view", "it develops team spirit", "it trains your willpower when you try to achieve what you've decided to do", "it develops your sense of responsibility", etc.).

Results and discussion. Group project work is regarded as preferable by most schoolchildren (71% of respondents). When asked why they choose group work, schoolchildren give the following reasons:

1. a strong desire to investigate the problem from different points of view, i.e. to include as much material as possible and present it in a more interesting way in the end ("there is an exchange of ideas and each detail is thought out thoroughly", "when you work alone, nobody disturbs you but you can miss the most important points while in a group all flaws and weaknesses may be noticed");
2. an opportunity to split up tasks and duties between group members ("you personally do less work in a group when tasks are divided", "you enrich your experience with other people's knowledge and skills");
3. a desire to communicate and get to know your classmates better ("doing a project in a group is interesting because its instantly leads to numerous discussions and therefore unites classmates", "you can exchange ideas");
4. a belief that group work is easier but more productive than the individual one ("four eyes see more than two"; "it's easier to put the project together"; "it's easier to present the project", etc.).

However, there can be some other motives for choosing group project work, which may cause some negative side effects and lessen possibilities of learners' development.

In some cases a student's decision to take part in group project work may disguise their unwillingness to do any work at all or it may hide their wish to put minimum efforts into it. Group project work allows some schoolchildren to hide their lack of effort and fade into the crowd escaping the blame. Such behaviour demonstrates social loafing, i.e. the tendency for individuals to reduce the effort that they make toward some task when working together with others [1, p. 732]. This happens due to diffusion of responsibility in group project work. Students know that when their project is evaluated in the end, it is normally assessed as a whole (as one single project) and everybody in a group gets the same kind of reward – be it the same mark or grade or the same oral praise. That means that some students feel their individual contribution to a project will not be evaluated or considered in the end, and this feeling makes them put less efforts into work and "get a free ride". The negative side effect of social loafing is demonstrated by such students remarks as: "In group project work you can rely on your partner"; "I'm rather lazy but project work allows me to work with excellent students"; "Some people in our group did nothing"; "I had to do almost all the project by myself"; "It's me who has done the research around the topic and put it all together, but we've got the same marks".

There are some other reasons which make schoolchildren stay aloof from active participation in group project work. There might appear such a social phenomenon as groupthink, i.e. a tendency to avoid promoting viewpoints outside the comfort zone of group thought in order to minimize conflict and keep group cohesion [1, p. 324]. When project groups are initially formed, their participants usually know from their previous experience what to expect from each other. Some children might underestimate themselves or have a higher opinion of other group members. In this case they tend to rely on others and it leads to their low participation in project work. In order to avoid being seen as foolish or angering other members of the group, these children set aside their own ideas and doubts and keep aloof. As a result, individual creativity and independent thinking are lost, and it lessens the influence of project work on a child's personal development and growth. The following statements made by students prove this point: "I had quite a few interesting ideas which could have made the project better (as I understand it now), but I was afraid of being sneered at by more knowledgeable students, so I kept quiet"; "We had one plan and we tried to concentrate on it only; if we had discussed all our individual ideas, we would have had a complete mess"; "I'm not very good at Biology, so I tried not to interfere much"; "I'd like to make my next project on my own as I don't like to obey others."

Group project work may also encounter such a negative side effect as pseudo-activity, which spoils all its potential for developing children's skills and abilities. It occurs when students take the line of least resistance, i.e. they avoid taking serious action and choose the easiest solution to a problem. For example, they copy all the material from the Internet or from some rare book (sometimes even without reading it) or take a ready-made project from some people they know in another school or even town. It may be the case with individual project work, but it often appears in group situations as well. Some schoolchildren have no cognitive needs but they do have very strong esteem needs, for example, they want to achieve a higher status among their classmates. In this case their group mates who aren't so confident can be easily persuaded to do what they suggest. This strategy seems optimal as it saves time, energy and resources. For example, some participants of group projects make such remarks: "It was quite difficult to present our project in class. We had got some help from Ann's mother and did not really figure out what it was about"; "It's a pity that we created the project on our own but we got the same mark as the group that downloaded everything from the Internet".

Conclusion. Therefore, in order to actualise the potential of project work for learners' development it is important to take into account students' motives for choosing individual and group project work and try to neutralise negative side effects.

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THE CORRELATION OF INTERFERENCE RESISTANCE AND SELF-REGULATION AT ATHLETES

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The study of human behavior in terms of the interference was the subject of research in various fields of human activity, including sports. The solution to this problem is devoted to the works of such scientists as: U.A. Kiselev, A.Z. Puny, I.A. Grigoryants and B.N. Smirnova, who proposed the following classification challenges (interfering signals) in the sport: «cognitive», «emotional», «social», «physical», «technical» and «external environment». As the interference resistance of athletes, E.V. Silich and E.V. Melnyk are consider the most significant and less significant for them psychological difficulties. They developed a questionnaire «Interference resistance of athlete», based on the above classification of psychological barriers in sport. [2]. U.V. Jakovich, at studying interference resistance, defines it as a person's ability to resist the effect of various factors and to ensure high effectiveness of the athlete when exposed to different interference conditions of the competition [4].

Many authors (A.F. Fendrich, L.P. Matveev, U.A. Kiselev and others) are relating the concept of the interference resistance with the reliability. L.P. Matveev was believed that the reliability of the athlete is a complex result of improving skills and abilities, which guarantees the effectiveness of actions taken under the influence of various interferences. [1]. U.A. Kiselev determines the reliability of competitive activity as a high probability of realization results on the competition, to which the athlete is ready. There are two important moments in the definition of interference resistance and reliability that link these concepts are the resistance of a person to interference, which ensures high efficiency of its activities. In turn, one of the components of mental reliability is developed quality of self-regulation [3].

B.B. Kosova, O.A. Korobkina, V.I. Morosanova and others indicate that the interference resistance is closely linked with the emotional stability of the athlete, which in turn can be achieved through the self-regulation of its activity [1].

Material and methods. The study was conducted on the basis of the following institutions: Vitebsk state College of Olympic reserve, VSU named after P.M. Masherov and health care institution «Vitebsk regional clinic sports medicine».

The study involved 106 athletes aged 17-21 years, among them 81 young man and 25 women with different skill in such categories of sport as:

1) martial arts (judo, taekwondo, wrestling, karate, Greco-Roman wrestling, weightlifting);

2) cyclic sports (water polo, swimming, athletics, shooting, biathlon);

3) athletic games (hockey, football, basketball, volleyball, handball).

For explore the potentially most significant and less significant psychological difficulties, which allow determining the overall level of interference resistance of athlete, was used the questionnaire «Interference resistance of athlete» developed E.V. Melnyk and E.V. Silich. [2]. Was used questionnaire V.I. Morosanova «Style of self-regulation of human behavior» for study the level of development of individual systems of conscious self-regulation voluntary activity of the athlete.

Results and discussion. In the result of correlation analysis (Spearmen's rank-order correlation) was found the interrelation of the general level of interference resistance with the general level of self-regulation ($r= 0,27$; $p \le 0,01$). Thus, the ability of the athlete to resist the effect of various factors and to provide high efficiency actions in the conditions of competition depends on the formation of individual systems of conscious self-regulation voluntary activity.

In addition to the established correlation were studied gender differences in noise immunity and style of self-regulation behavior athletes (using the nonparametric test Mann-Whitney). So, there were installed statistically significant differences ($p \le 0,01$) between athletes-men and athletes-women for less significant psychological difficulties («Cognitive», «Emotional», «Social», «Technical», «External environment»); for the general level of interference resistance, for regulatory-personal property («Independence»), and regulatory process («Planning»), which is dominated by athletes-men.

The men are capable to more consciously plan their activities, to organize work to achieve extended goals, to monitor progress, to analyze and to evaluate interim and final results. The athletes-men are more resistant to challenges, barriers and different interferences: intrusive thoughts related to the upcoming competition; thoughts of failure. They are also more resistant to technical difficulties (the violation, or loss of coordination) and to the difficulties associated with environmental conditions (visual stimuli, the draw). Clearly comparative analysis by gender is presented in figure 1.

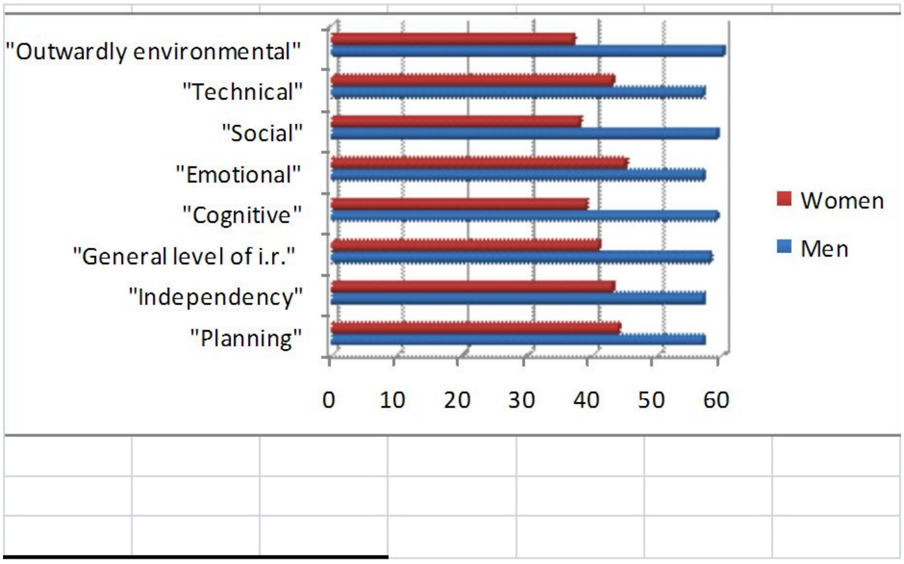

Figure 1 - Comparative analysis by gender

Conclusion. Thus, it can be argued that the interference resistance is closely linked with the emotional stability of the athlete. A variety of adverse mental states can to negative influence on the activities of athletes. Only athletes with the high interference resistance and the developed skills of self-regulation can resist the influence of these factors. [3].

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TECHNIQUES TO OVERCOME PSYCHOLOGICAL BARRIERS IN AN ENGLISH CLASSROOM

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The ultimate goal of English language teaching is to develop the learners' communicative competence which will enable them to communicate successfully in the real world. Very often psychological barriers prevent students from speaking English during lessons and it stalls the process of education. Overcoming of psychological barriers, combined with the methodology of communicative language teaching (CLT), can give teachers guidelines on which to base activities. CLT is a powerful theoretical model in English language teaching and is recognized by many applied linguists and teachers as a useful approach to language teaching.

The following are some of the CLT activities that we suggest to use with the students of non-English specialities. Richards J. distinguishes between meaningful and communicative activities, the main difference being that in a meaningful activity the language produced by the students is predictable even though it has meaning. However, in practice, the language produced by people in the real world is not predictable. The purpose of the article is to suggest activities for production unpredictable language activity which can be considered communicative according to Richards' criteria.

Material and methods. The experiment was held among the students of all non-English specialities in Vitebsk State University named after P.M. Masherov. The general quantity of students was 63. The method of work in groups was used because it helped to create an active students' participation at English lessons. First of all, students are put into groups of four. The four is further divided into two pairs. The second variant can be when students are in pairs to start with but later will form groups of four and then different groups of four, so the teacher needs to mentally or graphically divide the students into groups of eight.

Results and its discussions. Each pair receives a half completed crossword. The two halves make up a complete crossword. There are no written clues. The two pairs takes turns explaining their words, and listening to the other pair's explanations, thereby completing the crossword. This activity places importance on effective communication as students must somehow explain to their partner-pair what the word is without using Russian or the word itself. It is also helping to increase communicative competence as it practises the strategy of talking around words when the specific English word is unknown.

Each pair is given a piece of English to read. Each pair of the group of eight has a different passage, so there are a total of four different passages. The pair reads their passage together, checks any unknown words and tries to remember the main points. Each pair then turns their paper face down and tries to recall in English with their partner the main points. They are allowed to check their paper once more before all the papers are collected by the teacher. The pairs are put into groups of four. Each pair tells their new partner-pair about what they read. If some groups finish quickly they should try to recall their partner-pair's information. The pairs then form a new group of four with a new partner-pair. The new group of four now knows a total of four pieces of information. Each pair tells their new partner-pair their own information plus the information of their previous partner-pair. The logistics are tricky but worth the time taken to set up the activity.

This activity places importance on meaning as each pair must convey the main meaning of the passage they read. Authentic texts can be used as the passages to be read, or can be slightly adapted according to the level of the class. Effective communication is sought as the students try to explain the information that they have read.

Start the activity in pairs. Students are given a target time, e.g. 3 minutes in which to talk about the given topic. They must continue talking until the 3 minutes is over. Assign students as A or B within pairs. Ask all the A students to stand and move one place so everyone has a new partner. Increase the time to 4 minutes and repeat the activity. Continue this four or five times or even more, each time increasing by one minute or increasing every other time by one minute. Higher levels can have longer times, and for all levels, as the weeks go by, the starting time can gradually increase.

This activity assumes that learning will take place by interacting in the target language. As the students talk about the topic for increasing lengths of time and interact with different people, they will get fresh ideas for questions they can ask and will pick up new vocabulary from their different partners. Students' own personal experiences are important elements as the students are often talking about themselves or talking about the topic with relevance to themselves. They are exchanging real information and are usually genuinely interested in what their partner is telling them.

There is a technique like role plays. Practice functional situation such as ordering in a restaurant, booking a hotel room, and visiting a doctor by using role plays. In pairs, assign roles and allow some time to think about what they will need to say. A couple of minutes is sufficient. This should be thinking time not writing time. Have them act out the role play, changing roles when finished. The teacher should monitor carefully, noting where problems have occurred and where new language is needed by the students. Write this up on the board and point it out to the students. Change partners and practise again. Repeat once more if time allows.

This activity allows students to draw on their personal experience of these situations in their life. It focuses on meaning and effective communication as the students must just achieve their goal without focusing on accuracy. There is a dialogue but it is not memorised and the function is the focus. The students can see how this would be useful outside the classroom.

There are various pitfalls that can ruin a lesson using communicative activities. It is important for teachers to anticipate these problems, and to plan their lessons so that these pitfalls can be avoided. Below are some common pitfalls and simple ways to avoid them.

The main pitfall of trying to use communicative activities in classrooms is that the students will often revert to their native language, especially at the point when they become genuinely interested in what they are talking about. The best way to get around this is to have a "No Russian" rule which is used from the first day and which is strictly (but kindly) enforced. If the teacher thinks some parts of the lesson absolutely need to be in the native language then these should be the special parts.

In the Moving Partners activity when students have to talk for a given amount of time, some students may simply stop speaking after one minute and think that is adequate. Others open up their dictionary as soon as they don't know a word and have their head in their dictionary for the next minute or more. Others may have problems continuing the conversation due to a lack of conversation skills even in their native language. Some students may have a fear of making a mistake which leaves them tongue-tied. Five rules are needed here. These are No Silence, No Dictionaries, Ask Follow-up Questions, Give Long Answers and Mistakes are Okay. The first two rules are self-explanatory. Teachers may want dictionaries used at some points but during the actual speaking activity (not the preparation) this rule should be strictly enforced. Follow-up questions and long answers will need practising before these rules can be introduced. Follow-up questions can be introduced easily with a Have you ever...? activity. After students get a "yes" answer from their partner they must ask three follow-up questions. Long answers can be introduced easily in a Do you like . . . ? activity. Students can't answer with a simple yes or no, but must add to their answer. Once these two techniques have been practiced in class, the rules can be added to the other class rules. The Mistakes are Okay rule helps students to understand that when communicating in English, it is acceptable to not speak perfect English and to make some mistakes.

Conclusion. Thus, communicative activities can be used successfully with Russian students who may have had negative experiences of English, and who may not like English. Although there are many pitfalls to introducing communicative activities, these can be overcome through establishing class rules which are enforced by a class participation scoring system. This scoring system also serves to increase motivation even among weaker students.

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THE BELARUSIAN MULTIGENERATION FAMILY: FAMILY'S VALUES AND RELATIONSHIPS

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Family for the child is the primary surroundings in which he lives, grows and develops. Family education, family composition and position of the child within the family are the pillars of development of the child's personality. The family not only provides the conditions for the development of the child, it actively develops social position of each of its members. Influence of the family in shaping a child's personality is based on mechanisms of interiorization, identification and formation of identity, unity consciousness and activities of child and family, as well as the significant adults (L. S. Vygotsky, A.N. Leontiev, M.I. Lisina, D.I. Feldstein, D.B. Elkonin, etc.). In the family is bringing the child to social values and roles.

Families' values have an important role among the values of a culture of society. The value of the family, which belongs to a particular society, to create an overall picture of priorities and values characteristic of that society. The family is regarded as the repository of cultural values, families' values and traditions that it in the spiritual, moral, professional, creative work enriches and passes the new generations.

Families' values are formed by intellectual, physical, spiritual, moral, aesthetic, ethical, labor education kid. Forming of families' values is closely connected with the upbringing of such qualities of the child's personality as goodwill, desire to do good deeds, tolerance for shortcomings and mistakes of others, the ability to forgive, philanthropy, respect, responsibility for their decision, honesty and truthfulness, fairness, the ability to see their weaknesses, recognize errors, sensitivity, compassion, responsibility, discipline, diligence, careful attitude to the work of another, conscience, shyness, ability to listen to the voice of conscience. One of the values of family relations is the harmony of relations. O. Karabanova (2004) believes that compliance with the requirements of, which is a harmonious family, can be attributed to the values of family relationships.

Material and methods. Structure of modern multigenerational family often includes dad, mum, grandmother, grandfather (sometimes grandparents, ancestors) and children. Adults are responsible for the creation of a favorable microclimate in the family and are an example of the behavior for the child. In today's young family values in relations are increasingly respect, acceptance, support, love, liberty, intolerance to the detriment of their interests, social prestige and economic prosperity. Grandparents considered families' values mutual understanding, mutual respect, love, openness, honesty, decency, compassion, trust, warmth in family relationships. Family relationships, in turn, are regulated by the rules of morality and law, regulations, generally accepted in society. The older generation is the custodian of family traditions, moral and spiritual values and passes the experience for future generations [2].

The go-ahead study of families' values in modern Belarusian family held in 2012, took part the Belarusian family. Each family includes parents, grandparents and their preschoolers 5 years of age. The respondents were invited 90 issues on the basis of the Scale of a family environment, designed to assess the social climate in the family (S.Y. Kupriyanov, 1985). The study examined:

- the family relationships (indicators of relationships);
- the areas of personal growth, which emphasizes the importance of the family (indicators personal growth);
- the main organizational structure of the family (indicators administering family system) [1, p. 63].

Scale of a family environment (Table 1) includes ten scales relevant to the characterization of a family environment: cohesion (C), expressiveness (E), conflict (C-t), independence (I) orientation to achieve (OA), intellectual-cultural orientation (ICO), focus on activities and sports (AS), moral aspects (MA), organization (O), control (C-l):

Table 1

The scale of a family environment

Scale	Family No. 1	Family No. 2	Family No. 3	Family No. 4	Family No. 5	Overall average
C	5,4	4,6	6,3	5	5,8	5,42
E	7,8	7,5	8	7	6,2	7,3
C-t	4	4,5	3,5	3	4,5	3,9
I	4	4,5	3,8	2,5	4,5	3,86
OA	4,6	4,5	5	4	5,5	4,72
ICO	5,2	3,3	5	3	3,3	3,96
AS	6,4	6	4	5,5	5,3	5,44
MA	5,6	5,5	3	6	4,5	4,92
O	6,2	4	5,3	6	4	5,1
C-l	6,4	4,5	6	8	5,5	6,08

Results and discussion. When analyzing the data revealed that most families consider important in family relations expressiveness (E)-7.3 is the overall average relationship between family members.

Grandparents and young parents preferred equally open to act and express their feelings. Poll results show a high level of cohesion (O) in the relations between family members of all generations-5.42 that stresses the importance of family values such as caring about each other, mutual support, sense of belonging to the family. With the lowest overall rate scale conflict (C-t)-3.9, which showed little expression of anger and aggression, or desire to avoid conflict situations and «smooth out sharp corners».

Analysis of the replies reflect a high rate of family management: control system (C-l)-6.08 replies. Ancestors and young parents, despite the age difference showed a high degree of subsidiary family organization, rigidity of family rules and procedures, monitoring each other's family members. However, there is a difference in degree of importance for each individual family order and organization in structuring a family activity, financial planning, clarity and certainty of family rules and responsibilities – the average organization (O)-5.1.

Of particular interest are the indicators of personal growth of family members. In analyzing the responses revealed that significant in the family is the focus on activities and sports (AS)-5.44. Note that figure because more often than young parents. Moral aspects (MA) more relevant for grandparents than for young parents-total-4.92. All families are different indicators of achievement orientation (OA)-4.72 is the degree to which individual activities attached to the nature of the achievements and competition. Low overall intellectual-cultural orientation (ICO)-3.96, indicating the varying degrees of activity of members of the family in the social, intellectual, cultural and political spheres of activity. The lowest level of independence (I)-3.86, indicating little willingness, as parents, and young parents to assertion, autonomy in considering problems and decisions.

Conclusion. A comparison of scale makes it possible to identify values that affect family relationships. Analysis of mismatch response enables family members to see, than their similarities, differences and complementarities. The analysis results showed that in each and every Belarusian family have their families' values and traditions. However, the opinion of the progenitors of the values of family relations in most cases coincides with the opinion of young parents.

Thus, the relationship between generations is the unity of views on the family values that are passed from generation to generation, including from grandparents to grandchildren. The older generation in the family is the link between past, present and future families.

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PSYCHO-PEDAGOGICAL ESSENCE OF COMMUNICATION COMPETENCE IN A MEDICAL UNIVERSITY

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Currently, the system of medical education is developing in the direction of improving the quality of training of future specialists. On the one hand, this process requires on the formation of professional knowledge and skills, and with another hand there are professionally significant qualities of personality [1, p. 36-37]. Competence approach stands as the main requirement for preparing of the medical profession. Special place in the system of higher medical education implementation takes formation of communicative competence. Today there is a contradiction between the need of the medical profession with a high level of communicative competence and lack of training of students in this direction. However, the problem of formation of communicative competence of the physician as an independent subject of scientific research has not yet found sufficient development in psychological and pedagogical literature [4]. However, communication between doctor and patient is one of the most important factors that is affecting the success of the treatment. For effective interaction it is insufficient to be able to ask questions, you need to have knowledge in the field of ethics, psychology, pedagogy, sociology and ethics.

Whether patient by his behavior promote recovery or not, depends primarily on the ability of the physician to choose the tactics of communication adequate to the situation of the patient; its ability to build trusting relationships, skills available to explain, reassure, to influence the word [3].

View of the above it can be concluded that the study of the essence of the problem of communicative competence of physicians becomes relevant to improving the quality of training of medical students. In this regard, we investigated the level of formation of communicative competence in medical students due to the profile of medical specialty.

Material and methods. The solution put forward the tasks required to develop a set of research methods and techniques. The structure of the involved research methods included: observation, interview, survey, testing.

Object of study: professionally significant qualities of medical students, providing a communicative framework for the implementation of professional activities.

Subject of research: communicative competence in professional and personal formation of medical students.

Among the investigated parameters attributed sociability and indicators of social and communicative competence.

The study involved 122 students of the Belarusian State Medical University (BSMU). In this case, all the subjects were 4 groups of respondents: the first group - the students of medical faculty (MF -27 people), the second - Pediatrics students (PF - 28 people), the third - Dental (DF - 26 people), the fourth group was represented by students health prophylactic faculty (HPF - 41 people).

Results and discussion. *For the study of communicative competence used the method of "Diagnosis communicative social competence" (CSC in Factor A).* As a result of the study it was found that more than half of respondents (61%) have a high level of *communicative social competence* (CSC). They are able to easily establish contact on the basis of respect and commitment to the other party, are also characterized by a high level of self-confidence, are able to express their opinions. In 38% of the subjects were identified average *communicative social competence (CSC)*, which is characterized by openness, ease and sociability. 1% of the respondents identified a low level of *communicative social competence* (CSC) testifying uncommunicative and withdrawn.

Comparing the expression level of communicative social competence (CSC on Factor A) in representatives of different departments showed that the low level of communicative abilities of the students expressed PF (3%); average prevails in the DF (46%) and MF (43%); high level of communication skills is most pronounced on the FPM (68%) and MF (67%).

The obtained data that at the medical faculty (MF) dominates the high level of communicative social competence can be explained by the fact that students of the medical faculty, unlike other professionals in the provision of health services, are the most durable and regular communication with patients and their relatives in course of professional interaction. There are doctors of high demands by communicative competence in this category. They must not only psychologically correct build relationships with patients, but remain within the professional role in these relations.

Overall, despite some differences interdepartmental studied parameters, it should be stated that more than half of medical students (61%) have a high level of CSC. These students are the good conversationalist, able to listen, understand, appreciate and accept the position of another, select the verbal and nonverbal means of communication in accordance with its aims and objectives, friendly, emotionally responsive, communicative. There are professionally significant personal qualities, that combined with a good special training to successfully perform medical activities.

It used test "Assessment of the level of sociability" (VF Ryakhovsky) to determine the level of sociability among students.

In the course of the study it was found that 46% of respondents have a high level of sociability, indicating that this category of students is able to easily be contacted; they are talkative, love to speak on various issues, willing to meet new people, love to be in the spotlight, no one denied requests, though not always able to meet them and try to participate in all discussions. In 52% of the subjects had been diagnosed an average level, which is characterized by openness, ease and sociability. And only 2% of respondents had a low level at which pronounced unsociable and isolation that the new work and the need for new contacts eliminate them from the balance.

Thus, the students of the medical university has a high (46%) and middle (52%) level of sociability, through which can be easily adapted to the new environment quickly find new friends, constantly seeking to expand their circle of acquaintances, engage in social activities, help family, friends , take the initiative to communicate, able to make an independent decision in a difficult situation. They do all things according to internal aspirations.

In general, it should be stated that more than half (61%) of medical students have a high level of development of communicative competence and are characterized by:

- pronounced need for communication and establishing productive contacts with people;
- the ability to control themselves and manage their emotions and expression conditions.

Conclusions. Thus, communicative competence is one of the important components of the professional, is need to be developed in the process of training future doctors. That is why the diagnosis professionally significant qualities of medical students in the early stages professiogenesis and subsequent development in the process of independent work (participation in training and development programs) performs a significant factor in improving the communicative competence of a doctor in the future professional and personal formation.

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THE TYPE OF SUBJECT POSITION IN LEARNING AS A MEARSURE OF THE SUCCESS OF PUPILS ADAPTATION IN SECONDARY SCHOOL

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Identifying the appropriate criteria and tools for assessing the success of adaptation of younger students to Form 5 is an urgent problem for both practical and academic psychologists. In the context of qualitative new social situation at the adolescence age it's the characteristics of the student's subjective position that can be regarded as the supreme criterion. It is generally agreed today that primary school age and adolescence are the main periods for development of the subject position in learning.

The primary to secondary school transition period offers special challenges and opportunities for developmental researchers of individual variation of the formation of the subject position in learning [3]. During this transition period, pupils must utilize their previously developed resources to counteract any issues that arise as change invariably brings about new challenges. Our recent research has shown that subject position in learning is the individual feature that may act as protective or harmful factors of transition and supreme criterion of adaptation in secondary school at the same time [1; 2].

Subjective position is considered as active conscious attitude of student towards education. It can be described by the level of reflexivity of learning, emotional attitude to various aspects of school life, personal awareness of studying.

Material and methods. For studying these peculiarities we have developed and tested a clinical interview technique which allows to differentiate students according to the level of different aspects of subject position in learning. The participants in this study were 58 students (29 girls and 29 boys), recruited from an 2 schools in Brest, Belarus. Two samples at the end of 4 and 5 grade were made.

Results and discussion. A typological analysis of students on the border of primary school age and adolescence has been conducted on the basis of empiric study data. The phenomenological indicators of subjective position in learning was thoroughly investigated and put on factor analysis. Four types of students have been identified; each of them has been named to that to reflect the main characteristic of the subjective position in studying.

«Negativists» are characterized by the negative attitude towards learning because of the lack of personal awareness of studying. The regulatory function of reflection in the sphere of self-awareness is blocked by affective processes. For these pupils learning seems to be of no use and they want to reduce or simplify school program, teacher's demands. They are «pragmatics» who differentiate various lessons by the level of attractiveness and importance (under childish point of view). Negativists can be differentiated by the intensity of the display of negativism. This can be illustrated by the next statement: «I wish to destroy my school…I want summer never ends… I think school is a

waste of life. I hate it. Completely. There's nothing good about it for me… I want to cancel math lessons because I have low marks».

The origin of this attitude is associated with child family's values and conflicts with teachers.

«Performers of the role of pupil» are characterized by the «automatic» taking the school rules in general outline without trying to find the sense of learning. They don't have clear attitude to different aspects of school life. Thus, for such a type of students only those lessons appear to be important that provide knowledge and skills, which can be applied in definite life situations. For example 10-years-old Kate can think of no substantial school reform. «It seems that everything is prepared by adults... I like going to school because I see my friends' everyday».

The fourth type of students is a border-line case and is characterized by incompletely appropriated phenomenon of «must» and personal extra-class aspirations. *«Golden»* students demonstrate high interest in learning, informed attitude to various lessons and subjects. The main difference from the representatives of the latter type is the absence of disliked subjects. All subject matters are perceived by the student as having relevance for his own purposes. Vika takes a pride in learning: «I like to go to school. I like to learn to have more information and these information will be so useful to me in the future. Friends are there with you, they will always help you to learn. And teachers are so nice to me». Also a typical feature of «golden» pupils is an extra-situation activity and clear interest in learning beyond the school curriculum.

«Introspect» students by contrast with other type have a differentiated attitude towards different lessons. They are able to divide their personal emotional attitude to the lessons from its objective value, and are more spontaneous and use higher levels of thinking. The process of study for these pupils has a personal value. They may not accept standing all school roles. But in any case for this type of pupils, learning is important kind of activity. This trait becomes apparent at the following example. Danik: «In my opinion, good teacher is able to console, reconcile pupils. At the same time I suggested that teacher should be impartial or else pupils will become stupid and lazy. Right from the start of the education process, we should be trained to be disciplined».

Also intermediate types were occasionally found.

Conclusion. Research was focused on individual aspects of position in learning in order to determine features that may act as protective or harmful factors of their schooling career. Described typological is especially useful for teachers in understanding differences in pupils' learning position and for making pedagogical support programs for teenagers. We feel that our study enhances academic understanding of the factors of adaptation in secondary school and practical supporting of pupils during this period.

The research of stability of the individual type of subject position in learning during adolescence deserves further attention.

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POLYCULTURAL EDUCATIONAL SPACE AS CONDITION FORMATION OF THE IDENTITY OF PUPILS

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Plural introductionsEducational processes are carried out in space of joint activity of various subjects of society. According to K. Mankheym, "… education is one of the most powerful social factors influencing behavior of the person and as that, we want it or not, always serves the social purposes and is consciously directed on formation of certain types of the personality" [6, c. 52].

So far the term *"multicultural educational space"* is entered into the scientific thesaurus. Having generalized theoretical provisions, G.V. Mironova defines multicultural educational space of teacher training college as system of educational, information and education environments, everyone them which the essence reflects, structure and functions of spaces. Everything together they make uniform multicultural educational space [7].

Material and methods. The multicultural educational space realizes educational functions through improvement of teaching and educational work in educational institutions of polycultural regions. The content of education is supplemented with the multicultural component allowing the school student to acquire such basic concepts and categories as civic consciousness, identity, originality, uniqueness, cultural tradition, spiritual culture, ethnic identification, national consciousness, the Belarusian and world culture, cross-cultural communication, cultural convergence, culture of interethnic communication, the conflict, culture of the world, mutual understanding, a consent, solidarity, cooperation, a non-violence, tolerance and etc.

Vision of the organization of multicultural educational space is based on *multicultural approach*. It is necessary to understand the structured system of pedagogically expedient spaces including sets of environments as multicultural approach of the organization of multicultural educational space. The multicultural educational space is created by the integrated operating conditions of spheres of culture and education, ethnic and world.

The personality developing in multicultural educational space develops as the multicultural personality: *active* (activity as accumulation of experience of real socially significant affairs, participations in collective affairs); *civic-minded* (civic consciousness as competence, both interest, and participation in life of society, concrete socially significant affairs, readiness for independent initiative actions, management by itself, own life and activity); *moral* (moral as internal installation of participants of educational process to work according to the conscience and free will).

The multicultural educational space is filled with the multicultural contents promoting formation of multicultural competence of school students: *social and civil* (as sets of knowledge in the field of history, social sciences, sociology, the right, economy, the fundamentals of political science allowing the personality to be guided freely in life of civil society it is correct to define ways of the behavior and vital plans); *welfare* (as sets of knowledge in the field of literature, cultural science, the arts allowing the personality to be guided freely in modern community of people it is correct to define ways of the behavior taking into account modern social world realities); *ethnocultural* (as sets of knowledge in the field of ethnic cultures (folk arts, literature, traditions, etc.) as the, and others, allowing the personality to be guided freely in life of multicultural society, it is correct to define ways of productive interaction, multicultural behavior with the people belonging to various ethnocultural groups).

In multicultural educational space personal and psychological new growths are formed: *ethnotolerance* (as destruction of ethnic stereotypes, positive attitude towards other ethnoculture, prevention of discrimination on ethnic signs); *ethnic identity* (the ethnic awareness, the ethnic self-name ethnodifferentiating signs); *ethnic installations* (understanding of object and knowledge of it, an assessment, feelings in relation to object, regulation of own behavior).

Results and discussion. In a situation of reforming of modern education when all are more strongly shown the diversification processes connected with change of quantitative and proportional structure of representation of ethnic groups in polycultural societies in various regions of Republic of Belarus many of them undergo deep transformations. Indicators of such changes is set of universal values as integral part of the majority of modern national education systems, and also the general scientific perspective uniting pedagogical theories of the different countries and considering integration approaches in their design

The multicultural educational space is under construction on the basis of humanistic values and a priority of legal, civil society. It is urged to serve education of the multicultural person ready to dialogue of cultures on the basis of harmony, integration, cross-cultural interaction; socially active, having personal civil a position; knowing the rights and the rights of others and able to defend them, having own opinion and able it to defend; ready to integration into polycultural society.

The supreme value of multicultural educational space is not simply the identity of the pupil, and people of a certain civil society and ethnos, with the developed personal and civil culture, and the main sense and the purpose of multicultural education are connected with its development, an increment of own culture, education of the multicultural personality capable to be guided in the modern world, to choose reference points for the development, to work according to world outlook representations, structurally to interact and communicate with people in polycultural society on the basis of the positive attitude towards culture and to other cultures.

In the conditions of multicultural educational space important is a finding and preservation of own ethnocultural identity, formation of ethnotolerant qualities of the personality, positive ethnic installations as indispensable condition of successful integration into polycultural society.

Conclusion. The multicultural educational space represents complete system; all types of the spaces included in uniform system provide development of social experience of ethnocultural interaction of people and an increment of individual experience. The multicultural educational space acts as external social influence, the fundamental condition determining multicultural behavior of subjects of education.

So, we will understand the multicultural space of educational institution presented by complete system of a number of spaces which borders included sets of environments the result of interaction with which provides formation of the multicultural personality capable to be guided in the modern world as multicultural educational space, to choose reference points for the development, to work according to world outlook representations, structurally to interact and communicate with people in polycultural society; capable to successful integration into polycultural society

The multicultural educational space acts as external social influence, the fundamental condition determining behavior of the identity of the school student.

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CONFLICTS IN THE TEACHER – STUDENT INTERACTION

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Conflicts present a current issue in the school environment. Depending on the interacting parties to the educational process, we determine the following types of conflicts: student – teacher; student – student; student – parents; student – administrator; teacher – teacher; teacher – parents etc. The most widespread conflicts in the school environment are those between teachers and teenage students. According to A.Ya. Antsupov, this is due to the fact that a teacher often communicates with the grown up students the way he does with primary school children, which does not correspond to the age peculiarities of teenagers, first of all, their self-image – the ambition to be on a par with the adult [1, p.41-42]. S.V. Sarychev and I.N. Logvinov associate the bad temper of teenagers with the fundamental changes in the attitudes of the latter to themselves and the world. Self-perception as an individual, for the most part, equal to adults combined with the eagerness to confirm their maturity, prove their self-sufficiency and independence; a teenager forms their own system of values and estimates, the need to assert their views [2, p. 51].

The "teacher – teenager" conflicts are considered most dangerous as the parties to the conflict are equal neither in their role (position) nor their personal enhancement. Teenagers lack life experience and critical attitude to the situation; therefore their conflicts are more emotional and sometimes even painful.

Material and methods. To find out the causes of conflicts between teachers and students and get the idea of the main factors that aggravate or relieve teenage temper, we conducted a survey and

"Draw an animal" research with 50 teenage students. The survey results revealed the "problem area" in the "teacher – student" diad.

Results and discussion. The "Draw an animal" research was conducted as follows: the students were asked to draw an animal they associate themselves with. Psychologists that animals belong to several types: intimidated, intimidating and neutral (like a hare, a lion, and a cat). The choice a particular animal reflects the teenager's attitude to their own personality and to their ego, their self-positioning in the world, etc. The research showed that 32% of the students drew a cat that illustrates normal and reasonable self-esteem, even temper and standard level of thinking; 13% preferred the "dog", which indicates the students' altruism and their willingness to help others; 8% of the students chose a predator bird (an eagle, a falcon, a hawk, a kite), which indicates a certain degree of aggressiveness – such students are more hostile toward others, proud, striving for leadership and power. The other students preferred unconventional responses: a crocodile, a dragon, a monkey, an ox and others.

The survey data showed that students consider conflicts between a student and a teacher (49%), between students (37%) and between teachers (14%) most common of all conflicts in the school environment.

We cannot but mention the students' answers to the following question: "How often do you enter into a conflict (dispute) with the teacher?" 22% of the survey participants answered "never", 62% – "seldom", 14% – "often", and 2% – "always". The data obtained confirmed the fact that the majority of teenagers had entered into a conflict with the teacher at least once. According to 62% of the teenagers, school conflicts are started by teachers, 30% blame the student, while the others preferred other options.

Besides, the students were offered to nave the cause of their conflict with the teacher. 44% of the teenagers named a "bad mark for the answer", 20% of the students entered into conflicts because of an offensive joke played by the teacher or the teacher's criticism. 15% considered their "misconduct and behaviour" being the main cause, 7% of those asked regarded misunderstanding as the main source of conflicts, while 13% of the teenagers were undecided.

The data indicate that the prevailing kinds of conflict in the school environment are those of activities and actions. Conflicts of activities often occur with students experience learning difficulties, or when the teacher has not been teaching the class long and the relationship between the teacher and the students is limited to academic studies. Conflicts of actions occur when the teacher tries to correct the students' behaviour, sometimes evaluating the actions lacking information about their reasons.

When asked if they are aware of the things they should do to avoid conflicts, the students answered as follows: 33% of the students believe that first and foremost they should follow the school requirements, 25% of the students consider student's diligence in class a ticket to success, 11% of the students regarded evasion as the best way to avoid a conflict, 8% of the students believe that "no matter how a student behaves, a conflict is unavoidable", 6% of the students prefer "just keeping silent", while 31% of the students were undecided.

To find out whether students know how to resolve conflicts, they were offered the following question: "How do you usually resolve your conflict with the teacher?" 27% have to obey the teacher to settle the situation, 24% prefer cooperation tactics (agree with the teacher on something that suits both parties), 23% avoid the discussion, 9% of the teenagers mentioned that the teacher was the first to avoid the conflict, and only 6% of the students compromise (negotiate reciprocal concessions).

Since a conflict is always accompanied with a certain emotional state, it was important to know what feelings teenagers experience afterwards. 15% of the teenagers surveyed experience negative emotions (hostility, revenge), 14% felt resentment, pain and injustice, 12% of students feel indifferent, 11% are filled with anger, 10% experienced positive emotions – relief, joy and ease, 4% feel guilty and 4% had the feeling of contempt, while the others were undecided. The findings suggest that school conflicts are not always resolved positively, teachers and students fail to find a sound solution to conflict situations, since the correct conflict resolution should not leave any trace of negative emotions and experiences.

Conclusion. The results of the study lead us to the conclusion that conflicts between teachers and students are the hardest to solve and the most common in modern comprehensive school. The data obtained confirmed the communication problems between the teachers and teenage student: students' failure to comply with the teachers' requirements, students' inability to choose the tactics of behaviour, ignorance of the effective communication rules and conflict resolution techniques – all this leads to destructive relations between the parties to the educational process. Therefore, it is important to teach teenagers the techniques of relieving emotional tension and reducing negative emotions, develop the ability to understand the emotional state of other people and adequately express your own emotions, teach self-possession, behaviour control and effective communication.

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ACTIVITY AS A SIGNIFICANT FACTOR IN THE PSYCHOLOGICAL ADAPTATION OF PEOPLE WITH DISABILITIES

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The fundamental need for self-realization can be distinguished among the variety of needs of the individual. It is the desire of an individual to realize their personal potential (reserve of vital energy, inclinations, abilities) [1]. It should also be noted that, according to E. Fromm "a man has an instinct of overcoming, one of its manifestations is the search activity aimed at changing the situation and that involves some evolutionary software strategies in the interaction of the subject with different situations" [2].

The obstacles to self-realization that a person can come across with, provoke a negative mental state and lead to a personal crisis. Here it should be remembered that according to R. Lazarus´s and S. Folkman´s transactional model of stress, stress and emotions are the result of interactions between environmental processes and human health. The relative meaning of emotions (threat, loss, challenge, benefit) depends on the context and personal assessment of the situation and the interaction of these two factors, the so-called "stream of actions and reactions" [3].

Limitations in the physical realm, caused by an injury or a disease, provide a person with a difficult task of adapting to the conditions, limitations and return to a state of psychological comfort and well-being. In many cases, to achieve these goals non-constructive psychological defense mechanisms aimed at easing the psychological discomfort are used, despite the fact that these mechanisms create only a single reduce stress and lead to a distorted perception of reality and yourself. Such methods of adaptation as coping strategies, which are designed for the future, linked with a realistic perception and the ability of an objective attitude to oneself are ignored.

Based on the foregoing, we have set a goal: to identify conditions for successful overcoming of negative mental states in a situation of physical disability and to develop a program of psychological rehabilitation for people with disabilities, aimed at overcoming the negative mental states by seeking opportunities for personal self-realization with the use of active coping strategies.

Material and methods. The object of our study conducted on the basis of the state establishment "Vitebsk regional territorial centre of social services for veterans and persons with disabilities", was ten people with injuries to the musculoskeletal system of varying severity.

In our study we the following methods are used:

1. The survey method using D. Amirkhan´s technique of "Indicator coping strategies" in the process of N.A. Sirota´s and V.M. Jaltonsky´s adaptation and L.I. Wasserman´s methods of measurement of neurotic level.

2. Quantitative and qualitative data analysis while the processing and interpretation of the results.

The problem of coping behaviour of people with limitations in mobility, has its own peculiarities: these constraints become insurmountable obstacles in the implementation of goals in their life, because a person does not see the possibility of realization of their activity and, as a rule, uses the passive coping strategy. At the same time, our research based on D. Amirkhan´s techniques of "Indicator coping strategies" in the process of N.A. Sirota´s and V.M. Jaltonsky´s adaptation [4] and the technique of L.I. Wasserman´s methods of measurement of neurotic level [5] showed that those who use active coping strategies overcome the negative mental state very successfully.

Results and discussion. The results has showed that those who use active coping strategies overcome the negative mental state very successfully, because the presence of a strong positive correlation that exists between the passive strategy of “avoidance” and neurotic level was evident that using this strategy can successfully adapt. At the same time, a significant negative correlation existing between the neurotic level and an active strategy "Solution", which may indicate that the person using this strategy succeeds in overcoming negative mental states and actually reaches that level, which can be called a successful adaptation [6].

According to the results of the study we have developed and implemented a program of training with elements of social-psychological training "Objective, resources, motivation” on the basis of the Center of psychological assistance in VSU named after P.M. Masherov. Qualitative analysis of data obtained through questionnaires and during the conversation with the participants after the conference allowed us to say that in the course of employment there have been some changes in their consciousness that showed positive dynamics in overcoming negative mental states. There has been noticed some adjustment and restatement of their old and the definition of new goals in their life, and, what the most important is that they has searched and analyzed the resources needed for their implementation, which ultimately provided the participants with the guidelines in the implementation of their activity. In addition, we have carried out some individual work with people with disabilities, which was a revaluation of the previous experience, the discovery of new resources, that allowed them to switch to the use of active coping strategies and thus to improve their physical and psychological well-being, to become closer to the feeling state of psychological comfort, obtained largely by overestimating their capabilities.

Conclusion. Thus, the research and testing program of a psychological adaptation showed us that switching to the use of active coping strategies helps to overcome the negative mental states in terms of physical disabilities, and thereby helps the process of psychological adaptation of a person under these conditions, since the discovery of ways to implement their activity helps to get rid of psychological discomfort caused by withdrawal from solving real problems and based on false resources, which ultimately helps him / her to improve his / her physical and psychological health and to get closer to the feeling state of psychological comfort.

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FORECASTING OF LEARNING PROCESS QUALITY: METHODS AND TECHNIQUES

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In modern conditions pedagogical design and forecasting are becoming the dominant technologies in education quality management and account for its performance, effectiveness and “outrunning” nature. According to the concept of Total Quality Management, 70 % of management success is associated with these technologies. Forecasting is the invariant component of pedagogical design. It makes it possible to identify potential "risks" of the poor quality and potential ineffectiveness of a future learning process in advance, to estimate the degree of their probability and, to minimize their impact. Thus, forecasting ensures the quality of the results of pedagogical design (educational standards, training projects, etc.), which is one of the main factors in learning process quality at high school, and of higher education quality in general.

Analysis of research and training projects shows that they are often created without preliminary scientific justification, without recording and in-depth analysis of background factors, without problem analysis of the context and taking into account its dynamics; that they do not undergo prognostic quality assessment. Forecasting is dropping out of the structure of pedagogical design, and this is becoming one of the reasons for the poor quality of learning process projects, and hence low quality of the education process and outcomes. This situation is due to the fact that the issue of using forecasting as a technology in learning process quality management has not been studied enough; the nature, specificity and technology of didactic forecasting have not been determined and, its standards, algorithms, methods and tools have not been developed yet. That is why the theoretical justification and technological maintenance of didactic forecasting and its "legalization" in the structure of pedagogical design and education quality management are becoming especially important and relevant.

Material and methods: content analysis, critical reflection, generalization and systematization of the results of interdisciplinary research in the field of prognostics.

Results and discussion. From our perspective, didactic forecasting is the invariant component of pedagogical design, and the technology used in learning process quality management. It is a specific type of science-based system teaching activity, aimed at the permanent interdisciplinary modeling of probabilistic scenarios in learning process implementation, the use of which in design and management will provide the best quality and efficiency in the future learning process. The value of forecasting is that it not only allows us to identify potential problems and determine the most probable scenarios in learning process implementation; but also to evaluate their possible effectiveness, estimate the consequences of various management decisions, define optimal scenarios in learning process implementation, which provide the achievement of maximum coincidence of learning objectives and outcomes, and on this basis to develop specific recommendations to ensure optimal quality of design results, and to improve the quality of the education process and outcomes in the future.

From our point of view, the dominant method of forecasting learning process quality is an expert method – a method of obtaining prognostic information on the basis of the identification and specialized processing of the opinions of specialists included in a representative group of experts. This is due to the:

– existence of variant semantic shades of the concept "learning process quality";

– dependence of learning process quality on numerous often contradictory factors, some being subjective, the effect of which is almost impossible to take into account;

– existence of variant scenarios, ensuring learning process quality, because of the current polyphony of educational approaches, variability in defining objectives, content and methods of learning process;

– lack of universal criteria and indicators of learning process quality, the need for their permanent updating according to the dynamics of socio-cultural and educational contexts;

– lack of opportunities available for assessing learning process quality quantitatively (it cannot be measured and standardized), for using formalized methods of forecasting learning process quality; the need to use mainly qualitative methods of assessment.

Forms of expert method implementation	Forecasting techniques
Step 1: Critical analysis of prognostic background: *1.1 Identification and systematization of factors affecting learning process quality*	
Analytical expert assessment (individual extramural form)	Publication method, statistical and logical extrapolation, self-esteem of the degree of influence of argumentation sources
1.2. Assessment of the nature of the influence of different factors on learning process quality	
"Brainstorm" (collective intramural form)	SWOT-analysis
1.3. Assessment of the degree and duration of the influence of different factors on learning process quality	
«Delphi's method» (individual-collective extramural form)	Methods of mathematical statistics (ranking, direct evaluation method, method of paired / sequence comparison, the median, the upper and lower quartiles, the coefficient of concordance), matrix method
1.4. Construction of prognostic background models	
Analytical expert assessment (individual extramural form) + synoptic method (collective intramural form) / method of expert committees (collective intramural form)	Scenario method, evaluation of relative importance of prognostic background models
Step 2. Quality assessment (expertise) of learning process projects	
Method of expert committees (collective intramural form), analytical expert assessment (individual extramural form)	Matrix method, facet method
Step 3-4. Construction of descriptive and normative prognostic models of learning process quality	
Analytical expert assessment (individual extramural form) / method of expert committees (collective intramural form)	Scenario method, matrix method, methods of mathematical statistics (ranking, direct evaluation method), verification (indirect, by an opponent, by a competent expert)

One of the necessary conditions for ensuring the quality of didactic forecasting results is the selection and use of objective-adequate forecasting forms and techniques. The accuracy of prognostic models constructed as a result of forecasting depends upon the quality of the forecasting tools. We have identified the most appropriate forms and techniques of expert method implementation for each step of didactic forecasting. They are presented in the table below.

Conclusion. From our point of view, the presented methods and techniques have significant prognostic potential, and can be widely used by practicians (training project designers, experts and education managers) for forecasting the learning process quality in higher education establishments. We believe that rapid implementation of the above-mentioned tools of didactic forecasting in the sphere of education management will ensure the quality and effectiveness of the learning process, and therefore will contribute to the improvement of higher education quality.

THE PROBLEM OF STAFFING IN INCLUSIVE EDUCATION

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At the present stage in the Republic of Belarus pays great attention to the expansion of educational space, the inclusion of all children regardless of their abilities, capabilities and social status. At the legislative level, this is reflected in the Code of the Republic of Belarus on education, where the main directions of state policy in the sphere of education are «ensuring access to education, including persons with special needs in accordance with their health and educational opportunities at all levels of basic education and in obtaining additional education». In article 3 of the Code of the Republic of Belarus on education "the State guarantees of the rights in the sphere of education, stated that "persons with special needs in education is the correctional-educational assistance and special provisions are made for education taking into account the peculiarities of psychophysical development"[1].

These benchmarks the development of a national system of education is fully consistent with the goals and objectives of inclusive education, understood as education, which gives each person an equal opportunity to engage in a holistic educational process and provides equal opportunities for socialization. Another P.S. Vygotsky pointed to the need to establish a system of training in which the child with features of psychophysical development would not be excluded from the society of children with normal development. He noted that the main disadvantage of special schools is narrow circle of the school community in which all adapted to the defect of the child, does not introduce it in real life. The main task of teaching a child with disabilities, PS Vygotsky saw in the integration of it in life and compensate for the lack of any way.

Material and methods. For the development of inclusive education in the Republic of Belarus of children with special needs has a number of prerequisites: established integrated training and education, a barrier-free environment created in a number of institutions that create the system of training teachers, the extensive work on the formation of a tolerant attitude towards people with special needs.

The transition to inclusive education leads to the creation of special conditions for education of children with special needs in institutions of basic education. One of these conditions is sarigumba school environment that ensures a successful emotional and psychological status of each participant of the educational process.

In the field of inclusive education there are three interdependent problems. The first is, that the proportion of children who have features in psychophysical development, turn out to be socially isolated. Teachers are not always aware of the method of forming constructive interpersonal relationships in the team, which consists of such children. As a consequence, the problem of formation of competence of children with disabilities. With limited social interaction these children do not acquire the necessary positive experience in different situations. The third problem, which largely depends on the efficient solution of the first two, associated with staffing the development of inclusive education.

Results and discussion. Currently pedagogical universities are quite skilled training. A distinctive feature is its focus on competence-based approach, according to which the expected result of the educational process is not a system of knowledge, abilities and skills, and the set of key competencies: academic, social, personal, professional. Complexity in inclusional process observed in teachers of previous generations, because during their training, this issue was not given attention. Such teachers are often confused on what the class will be taught a child with special needs; they recognize that it is difficult to arrange the training. Accordingly, the system of postgraduate education is the preparation of teachers to work in an innovative environment, i.e. ensuring their readiness to act in situations that do not require reliance on past experience. The purpose of pedagogical activity is the formation of the development situation of the child's personality, and not just the transfer of knowledge-level information.

Conclusion. Thus, the success of inclusive education depends on the expertise of its carrying out. Conversion training should be not only in content and methodology, and the most important thing in professional positions, based on respect for the dignity of each child.

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INFORMATION-COMMUNICATION TECHNOLOGIES AS A MEANS OF PRACTICAL TRAINING PERFECTION IN THE SYSTEM OF FUTURE CHEMISTRY TEACHER PREPARATION

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In the system of vocational training of a future chemistry teacher the important role belongs to practical training. Representing a component of teaching and educational process in the system of professional skills and abilities masterity, practical training is important form of purposeful creative activity of a student.

In a course to practical training students can learn and estimate the degree of their readiness for independent work at school, stimulate their pedagogical skill, accumulate professional experience which is necessary for the future activity as a teacher of chemistry.

Goal of research is to show the possibilities of students' practical training in chemistry with information-communication technologies application.

Material and methods. Program platform Moodle on the basis of server VSU named after P.M. Masherov.

Results and their discussion. The main objective of practical training is mastering by students of the basic functions of pedagogical activity of future chemistry teacher by sdudents, independent and creative application of theoretical knowledge in practice, the use of the newest educational technologies in work at school [4].

The tasks of practical training performed by chemistry students are the following:

1) deepening and fastening of theoretical knowledge and skills, and their practical application at chemistry lessons;

2) designing, forecasting, realization and estimation of teaching and educational work;

3) development of methods and forms of control and self-control, an estimation of educational process, its efficiency;

4) mastering the ways, criteria and indicators of marking [5].

Being at a practical training, students should seize following functions: communicative, information, developing, organizing and research [4].

The use of information-communication technologies (ICT) opens new prospects and possibilities for the organization of students' practical training in chemistry. The use of computer programs allows pupils to observe those phenomena which are invisible at ordinary chemistry lessons. The Primary goal of a teacher of chemistry consists in integrating information knowledge with a chemistry course. Such integration allows students to make studying of chemistry more mobile, adapted for requirements of a modern lesson.

Information-communication technologies is a set of methods, devices and the processes used for gathering, processing and distribution of the information and their usage at a lesson [1].

Use of ICT at chemistry lessons has a number of advantages:

· Presentation of giving information (pupils have possibility to see and study a spatial structure of molecules);

· Presence of demonstrations of those chemical experiments which are hazardous to health of children (for example, experiences with poisonous substances);

· Use of video- and audiomaterials that makes a lesson of chemistry clearer, more visual, more interesting [5].

The use of ICT in process of practical training in chemistry assumes that the student is able:

· To process the text, graphic, digital and sound information by means of corresponding processors and editors for preparation of didactic materials (table, variants of tasks, schemes);

· To organize work with the electronic textbook at a lesson;

· To create presentations in MS Power Point and to show presentation at a chemistry lesson;

· To apply educational software (training, fixing, supervising);

· To organize work with pupils on search of necessary information on the Internet directly at a lesson [1].

Thus, the use of ICT at chemistry lessons is a creation of multimedia scenarios of lessons, demonstration of computer models, the animation experiments, simulating chemical experiments, a step-by-step illustration of the problems decision, carrying out of computer laboratory works, control over the level of knowledge, the organization of project and research activity of pupils [2].

In this connection we have started working out the blocks in program platform Moodle and we are planning to create 4 blocks:

I block – «Management of practical training»: bases of schools, practical training terms, interview with teachers, lessons schedule, the requirement to necessery documentation.

II block – «Practice organization»: the current report of students on practical training, electronic plans of lessons.

III block – «methodical help» to students, includes literature, electronic textbooks, presentations, workings out lessons, experiences, video experiences, video lessons.

IV block – «Control on practical training»: the report, the short characteristic of schools where practical training took place, impressions about practical training, results, wishes, a forum.

Conclusion. The use of ICT at the organization of practical training by chemistry students promotes the increase of educational process efficiency, a presentation of theoretical material in the visual form, avoidance of difficulties at work with printing materials, increase of the level of their methodical preparation.

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ROLE OF FOLKLORE IN MORAL AND LABOUR EDUCATION OF PRESCHOOL CHILDREN

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The revival of folk pedagogy is the priority in the educational policies of the national education system. This is due to the fact that its enormous pedagogical potential enables positive solutions of many problems of modern society: the formation of a stable ideal, moral and physical health of a man. The state policy of the Republic of Belarus, which is focused on getting into the world educational space, considers as a priority the formation of personality, capable of naturally involving into the world culture and civilization, basing on ethno-cultural basis. According to the instructions of the state leadership, the Ministry of Education of the Republic of Belarus proposes a set of measures to revive the folk pedagogy, actualizing the task of the scientific research on folk pedagogy. All this makes a significant and timely attending to the problem of implementation of certain tools and methods of folk pedagogy in educational system, including preschool education.

An advancing intervention of Western subculture and the changed conditions of human life make difficulties in the moral and labour formation of personality. At the same time, the rich potential of folk pedagogy, which has proven age-old practice of educational experiences to form new generations, is remaining unclaimed.

Since the beginning of time a man needs a moral support, moral guidelines, ideal. God, biblical moral and religious commandments, moral code of the Soviet citizen which at the time served as an ideal, they were a controller of morality. The historically predefined human need for certain moral guidelines, for base on the universal values according to national circumstances, comes into conflict with the real life, where the younger generation often occurs with blurred moral ideals, the lack of a moral core.

One of the main criteria of morality among the people was and is a man's attitude toward labour, his diligence and skill. The people saw their happiness in labour, raised in labour, for labour and through labour. The diligence and honesty, which occurred in our ancestors, appeared not just in the process of performance of labour functions, but they were a result of their rich spiritual and moral life [3].

Over a number of centuries, the people have formed a stable ideal, a comprehensive view of the moral requirements for personality, a kind of norms and rules of morality, enshrined in oral folklore.

The goal of research: to justify theoretically the role of folklore in the moral and labor education of preschool children.

Material and methods. Material the Ethnopedagogical studies (including dissertations) in moral and labor education materials Belarusian ethnography and folklore. The methods – the method of scientific ethnopedagogical research analysis method ethnopedagogical and folklore material, analysis of known heritage of the Enlightenment, can reveal the educational potential of the Belarusian folk pedagogy.

Results and discussion. At the present time the ethnopedagogization of preschool education is clearly visible. An example is the appearance of special researches related to ethnopedagogical orientation of preschool education (L. M. Zaharova, 2011), special attention is paid to moral education of children of preschool age (A. E. Shamkhalova, 2006; O. V. Leonova, 1996), to labour education of preschoolers (S. Ya. Karasova, 2005; M. I. Dedyukina, 2004). Among the means and methods of folk pedagogy implemented in the education of children, the scientists point out the folklore (M. V. Abdrakhmanova, 2004; R. M. Aliev, 2003; A. H. Dzamyhov, 2004; G. N. Pivneva, 2004) [6].

In the thesis works of the Belarusian authors on the formation of personality of children of preschool age, there is also focus on folk pedagogy and its the most important means – the folklore in the works of teachers (O. N. Antsiperovich, L. N. Voronetskaya, A. A. Grimot, A. P. Orlova) and folklorists (O. M. Alekhnovich, G. A. Bartashevich) [6].

The problem of moral and labour education of children was the subject of attention of many standard authors of foreign and domestic pedagogy: D. I. Vodinsky, I. F. Herbart, J. A. Komensky, John Locke, A. S. Makarenko, I. P. Pestalozzi, N. I. Pirogov, J. J. Rousseau, V. A. Sukhomlinsky, L. N. Tolstoy, K. D. Ushinsky, I. F. Kharlamov and others.

The known teachers pointed to a huge role of education in early childhood. K. D. Ushinsky wrote that "a man's character is mostly formed during the first years of his life, and what lies in the character during these years – lies firmly, it becomes the second nature of the man. Everything what man digests in the future never has the depth of everything learned in childhood" [1].

Among the spiritual values of mankind the folklore occupies an important place – the folklore, which is the standard, unsurpassed model of content and standards of all kinds of folk art. In the folklore there is a reflection of the moral demands on the individual, the moral norms and rules, a deep respect for the labour as the main value of human life. The people composed songs, epics, tales and proverbs, in the perception of the meaning of the content of which children have a moral and ethical feelings and associations which are not directly expressed in the work of art, through which the educational objectives are achieved.

Back in the late XIX – early XX century the fairy tales were universal and daily in the life of Belarusian people. The worldview and ethical beliefs of the workpeople were formed under the influence of folk tales. For example, the words of the researcher of folk tales A. K. Serzhputovsky about it: "Under the influence of short stories, tales, proverbs, and other products of folklore all kinds of worldview are produced: all worldly wisdom and ethical ideas ... proper to man need to find answers to life's questions gave rise to love to stories, fairy tales and other works of folk art among commoners" [5].

The modern researchers also note the educative significance of Belarusian folk tales. In particular, V. V. Kozlov says: "The importance of shown in the Belarusian tales social and moral issues, their resolution in the spirit of the best freedom-loving traditions and principles, the limitations of form and content of fairy tales, their aesthetic and ethical credibility, turn the Belarusian folk tales into a sort of "moral code" which approves the advanced democracies ideas and views" [2].

The superstitious beliefs also play an important role in the moral education of the people. The ethnographer, teacher and folklorist N. Y. Nikiforovsky at the end of the XIX century noted the wide spreading of folk sayings: "The sayings, beliefs and all the legends of this type are not less valuable than the fairy tales, songs, proverbs, riddles; but, being traditional, the sayings and beliefs are more daily and mundane than, for example, tales and songs" [5].

The proverbs and sayings are a kind of encyclopedia of life of people in different historical epochs. The proverbs and sayings help to form positive personality traits, according to the national ideal: humanism, kindness towards the people ("It is better not to be born than to be a bad person"), education ("Not the beauty adorns a man, but the character"), truthfulness, conscientiousness ("The person is not the one who has the money, but the one who has no unrighteousness"), the friendly attitude towards the people ("A bird is strong due to wings, and a man is strong due to friendship"), respect for elders ("Love the parents, respect the old people"), diligence ("If you don’t like to work you won’t be a man") [4, 48].

In short folk sayings there are always instructiveness, didacticism, judgment, moral lesson that comes easily to mind, and determines the behaviour, doings, actions through concrete, visible, bright and clearly presented images. It makes the folklore the effective means of solving the problems of moral and labour education of preschool children.

Conclusion. The research of state of knowledge of the problem of moral education of children in ethnopedagogical works using the methods of scientific ethnopedagogical research of theoretical level made it possible to state: the problem of moral and labour education in ethnopedagogics is prioritized; nowadays the ehtnopedagogization of education, including pre-school education, is becoming actual; among the performed researches, the works based on the material of folklore, including directly related to the implementation of folklore in the moral and labour education of preschool children, have a specific place. At the same time, the absence of special researches of a regional nature, subject to the orientation of the Ministry of Education of the Republic of Belarus for the revival of the Belarusian folk pedagogy, as well as an increased need for moral improvement of society, attracts attention to work on the problems of moral and labour education of children of preschool age through folklore.

The analysis of works of well-known foreign and domestic educators of the past and present, as well as ethnopedagogical works suggests: the folklore possesses inexhaustible educational opportunities; the folklore is a quintessence of the moral code of Belarusians, being an effective means of moral and labour education, it contributes to the formation of moral personality traits (honesty, truthfulness, modesty, diligence, teamwork, respect, kindness and others). All the above confirms the crucial role of the folklore in the moral and labour education of preschool children.

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PROFESSIONAL SPECIALISTS TRAINING IN THE SOCIAL WORK SPHERE: FOREIN EXPERIENCE

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Social work is a professional and academic discipline that seeks to improve the quality of life and wellbeing of an individual, group, or community by intervening through research, policy, community organizing, direct practice, and teaching on behalf of those afflicted with poverty or any real or perceived social injustices and violations of their human rights. The skills needed by social worker include relationship building with clients, interviewing, problem solving, and referral to other organizations (in this case, a support group). Social workers also need to have research and grant-writing skills, program development and fund-raising skills, and knowledge of how to handle ethical and legal issues**.** The aim of the research is comparing the features of the education and training of future specialists in social work in our country and abroad and use foreign experience, adapting it to our conditions.

Material and methods. The object of the research are students of the faculty of social pedagogics and psychology VSU named after P.M. Masherov (126 respondents). Methods: psychodiagnostic methods (questionnaire survey), analysis of documents (curriculum); statistical methods of data processing,

Results and discussion. Social work education in the USA includes two-year associate programs and undergraduate and graduate education.

During the past 3 decades, a number of community colleges and technical schools in the USA have begun offering 2-year associate programs related to social work education. These programs provide training for a wide range of associate degrees with such titles as: Social Work Aide/Social Service Associate/ Social Service Technician; Probation and Parole Aide; Mental Health Associate/Mental Health Aide; Human Services Technician/Human Services Aide; Child Care Technician/Residential Child Care Aide; Community Service Assistant/Community Services; Technician/Community Social Service Worker.

Many of these programs are accredited by the Council for Standards in Human Service Education.

The programs must demonstrate the rigor of their courses in order to be accepted. Associate degree credits are transferring to 4-year institutions with increasing frequency. As yet, associate degrees are not accredited by the Council on Social Work Education (CSWE). This Council reviews social work baccalaureate and master’s programs throughout the United States to determine whether individual programs meet the standards to warrant accreditation. Standardization of associate programs in social work probably will not be achieved unless CSWE decides to review associate programs for accreditation.

There is a trend in colleges and universities in many countries to «internationalize» the curriculum. Students need an understanding and appreciation of the diversity that exists internationally. Social work educational programs in the United States are increasingly seeking to foster an international perspective for social work majors. This is being done through student exchange programs with other countries, faculty exchange programs with other countries, study-abroad programs (including internships) for social work majors, and new curriculum content on social problems and innovative services in other countries. The Educational Policy and Accreditation Standards (EPAS) of the Council on Social Work Education specifies that social workers recognize the global interconnections of oppression and are knowledgeable about theories of justice and strategies to promote human and civil rights.

The Council on Social Work Education also has a Commission on Global Social Work Education. It is composed of educators from around the country who are actively involved in teaching international content and initiating cross-national exchange programs.

Secondary objectives for baccalaureate programs include preparation of students for graduate professional education in social work and preparation for intelligent, informed citizenship that brings an understanding of a wide range of social problems, intervention techniques to resolve such problems, and an understanding of social welfare concepts [1, p. 278].

Master of Social Work (MSW) programs as a rule require 2 years of academic study. However, a number of graduate programs are granting advanced standing to students holding an undergraduate major in social work. Advanced standing (up to 1 academic year of credit) is given on the basis of the number of «core» courses taken as an undergraduate. Core courses are those that are required in both undergraduate and graduate programs and include classes in social welfare policy and services, social work practice, human behavior and the social environment, social research, and field placement. The Council on Social Work Education has an accreditation standard that states: advanced standing is awarded only to graduates holding degrees from baccalaureate social work programs accredited by CSWE, those recognized through its International Social Work Degree Recognition and Evaluation Service, or covered under a memorandum of understanding with international social work accreditors. Because of the professional preparation focus of graduate programs, fieldwork is an important component of all MSW programs. Students spend an average of 2 to 3 days per week at an agency while receiving intensive supervision.

Professional specialists training in the social work sphere began in VSU named after P.M. Masherov since 1997. Students, who participated in the survey were asked to evaluate how effectively the process of formation of professional competence of future specialists in social work in VSU. 55% of 3rd year students noted that the process of formation of professional competence of future specialists in social work is carried out on average, 19% said the efficiency of the process of formation of professional competence, and only 7% said the ineffective work of the University in this direction. In turn, the question of what prevents the training institution of the competent specialist in social work, the answers were distributed as follows. 39% of respondents 5 course believe that high-quality training in the Institution prevents failure of hours spent on practice students, 21% - unconscious choice of profession students. 18,3 percent of survey participants agreed that as a factor impeding the preparation of competent professionals, low social activity of students, as well as inadequate logistics (11%). An important aspect is the acquisition of scientific pedagogical staff with basic vocational education in the field of social work. Effective staff training is master's degree, which at the faculty of social pedagogics and psychology VSU provides training in the field of «Psychology» and «Pedagogy». More than 25 graduates of the faculty have master's degree in these trades, and 14 graduates of the faculty work at the University, and many of them have defended their dissertations and 6 graduates of the faculty are trained in postgraduate study of various Universities of the country. At the faculty of social pedagogics and psychology VSU named after P.M. Masherov there are 30 full-time teachers, including 2 doctors of pedagogical Sciences, 4 candidates of pedagogical Sciences, 2 candidates of biological Sciences, 1 candidate of historical Sciences, 3 candidates of psychological Sciences.

Conclusion. Although there is some variation in the format and structure of master's programs, almost all of them have the following two components: part of the program has a generic social work practice focus. Courses taken to meet this generic practice focus are similar (and at some schools identical) to the core courses of an undergraduate program. Some schools offer this generic focus during the first year, a few offer it during the first semester, and others have course content in this area for both years. For the second part of the program, the student selects a concentration area from several available options and then takes courses in this study area. There is considerable variation among graduate schools in the concentration options that are offered. Some of the concentration options are policy analysis, planning, research and administration, community organization, direct practice with individuals and small groups, direct practice with large groups, program development, community mental health, family functioning, health care, clinical practice, inner-city neighborhood services, social work in school systems, child welfare, consultation, aging, and crime and delinquency.

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SPECIFICS OF USE INTERNET RESOURCES IN TEACHING GRAPHIC DISCIPLINES

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The rapid development of information and communication technologies has led to the active integration of standard learning tools with Web- based applications to each organization, including educational institutions. These Web-based applications can be social networks, familiar to all, emails, blogs, as well as multimedia presentations, video tutorials, virtual departments and laboratories, computer simulation games, etc. All this creates a certain kind of infrastructure, named as Educational Portal (EP).

Materials and methods. The EP can be defined as an informational and educational resource, performs analysis, processes and delivers the information. The EP is designed to provide comprehensive support to all participants of the educational process.

There are the following types of EP:

– public type, for example, Google, Mail, Yandex, etc. These portals are designed for very large audience; they are general in nature (news, culture, economy, education);

– specialized type designed for a specific group of people (company, university, group).

The considered EP refers to the specialized type. Users of such portals (like teachers, students of different forms of learning and scientists) have access to certain applications 24 hours a day by using a personal profile through the Internet service regardless of their location.

Using the EP in practice in an educational institution, you can:

– use text learning tools that are already used in the educational process, as well as multimedia capabilities, the Internet facilities (hypertext links and hypermedia systems);

– monitor the students' ability, as well as their level of knowledge, skills, level of training in a specific discipline;

– apply the possibilities of remote consultancy, collection, storing and processing of educational information, etc.;

– orient students to the self-study of the material, self-discipline and self-development.

Results and discussion. In this year the creation of the new information environment for providing the educational process and monitoring of its results on the basis of computer technology is one of the innovations in Educational Institute «Polotsk State University». This direction is planned to be developed through the EP created on the basis of the repository of the Scientific Library, which provide students with access to educational, methodical and other reference materials on the subjects studied by the Internet. Access to information is divided according to the faculties, special items and groups.

Creating an information base on the graphic disciplines takes place in two directions: the usual system of education (full-time and correspondence courses) and more complex system of education, including new distance learning.

Both directions include the selection and study of relevant information, its presentation in the proper form, the choice of the methods and forms of organization of the educational process and the construction of the finished holistic specialized courses. Using of the greatest number of species and forms of educational information and communication resources will improve the quality of the presented information and as a result improve the process of education.

A student should clearly understand his training schedule in a particular semester for the successful organization of training in graphic disciplines. For this, the following components of the educational complex makes in each discipline on the EP: curriculum; lecture notes; guidelines for the implementation of the calculated and graphic works; examples of the calculated and graphic works; database of screening tests; questions for the tests and examinations; recommended reading; supporting materials.

During the learning cycle of graphic disciplines an important feature is the presence of feedback, which can be organized as follows: consultation when choosing the correct solution of the tasks; directly help in solving or prompt; confirmation of the solution of the tasks, demonstration of the solution; mid-term control of knowledge.

Just an important advantage for the students in the study of graphic disciplines based on the EP is the opportunity to learn the material at a convenient time and at their own pace, go back again and again to the examples of tasks solutions, consolidate the knowledge gained through training, and improve self-control. And for the teachers this is the opportunity to use the material stored on the EP regardless of the form of classes (lectures, seminars, consultations, laboratory and practical training), as well as opportunity for self-education, intermediate and final control.

It would be appropriate to involve the students of all forms of education to the scientific work. For this on EP should place the following materials: information about the teachers and students involved in research projects; names of possible research projects in the graphic disciplines; annotations and abstracts; reviews, comments, ratings of entries; links to electronic libraries with scientific research; electronic journals and conference proceedings; scientific literature.

Conclusion. In conclusion, we can say that the use of EP in the education system allows to present educational material in the interesting and relevant form, to collect, store and process the received data, make the control of knowledge. With regard to the graphic disciplines, we consider it appropriate to use the EP in education, because students get access to the most relevant and scientifically new information that is usually not included in the traditional paper publications, including the latest tutorials, manuals, recommendations and additional materials to conduct laboratory employment. Thus students increase the level of knowledge and skills.

EXPERIMENTAL TASKS AS A WAY TO PROMOTE INTEREST IN PHYSICS AMONG STUDENTS

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Experiment is one of the most important teaching methods. Its special role in teaching physics corresponds with specific nature of this science, so experiment serves as a base of study nature’s phenomena. A lot of outstanding scientists pointed out that physics must be studying on experimental base. Physical experiment allows demonstrating visual laws of physics and making presentation more plain and intelligible. Thus, the physical experiment contributes to the development in students of secondary schools culture of analytical thinking in solving problems. One of the major problems of the modern school is the lack of methodological support of the educational experiment in the process of learning physics in school. This problem prevents the full use of teaching physical experiment in the organization of educational activity of students. In this connection special importance is the search for new effective ways of organization of independent cognitive activity of students. One of the solutions to the problem may be the development of a set of experimental tasks in physics for students 6-11 years of high school. The value of experimental tasks is that they increase student engagement in the classroom; contribute to the elimination of formalism in the knowledge and skills of research activity [1].

Material and methods. The results of the survey, which was attended by 72 teachers of physics Grodno region with different teaching experience and qualification categories, showed that the vast majority of teachers believed the educational experiment required component of the process of learning physics. All respondents spend on the lessons of physics demonstration experiment and the front of the laboratory work, frontal experiments are performed 18% of the surveyed teachers, extracurricular experiment - 15%, solving experimental problems - 8%. Analysis of the results of the survey revealed that 57% of the teachers rarely (2 times a month and rarely) use the physical experiment in the educational process; 27% frequently (on average a few times per month); 16% - almost every lesson [2, p. 32].

Physical experiment in the school applies the following types: a demonstration experiment, which is conducted by the teacher; the front of the laboratory work done by students during the study program material; the front of the laboratory work; experimental tasks; extracurricular physical experiences (workshops, conferences) and homemade experimental work. This classification was developed gradually: in the beginning was only a demonstration experiment, then (in the late nineteenth century) had the idea frontal physical experiment, which was finally realized in school only in the 50-ies of the twentieth century, then, in a couple of decades later, was introduced into school physical workshop. And now school physical experiment is not something frozen in time, given that it develops in a variety of ways. There are new devices, methods, demonstrating etc. develops a technique used in the experiment is the experimental technique that makes some additions in the above classification.

Experimental tasks.

Experimental tasks include such physical tasks, formulation and solution of which is organically linked to experiment with different dimensions, the reproduction of the physical phenomena, observations of physical processes. Most of these tasks are built so that in the course of solving the student first made suggestions, explained speculative conclusions, and then tested them by experience. Such a construction causes the disciples of great interest to the task and with the right solution very pleased with their knowledge.

Experimental tasks can be divided into the following types.

Tasks in which to get the answer or have to measure the required physical quantities, or use the nameplate data of equipment, either experimentally verifies these data.

Tasks, in which students self-set dependence and the relationship between specific physical quantities.

Tasks in the condition which describes the experience and the student must pre-say its result.

Tasks in which the student must use its devices and accessories to show a specific physical phenomenon without instructions on how to do it, or to collect the electrical circuit, to construct the installation of the finished parts in accordance with the conditions of the problem.

Task eye on the determination of physical quantities with subsequent experimental verification result.

The problem with the production of content that address specific practical issues. The value of experimental tasks that they increase student engagement in the classroom, contribute to the elimination of formalism in knowledge, skills research nature, form critical approach to the evaluation of measurement results.

Example of experimental task [3].

“Properties vapors and liquids” in the 10th grade.

For gradual development of knowledge systems in the study of the properties of steam, understanding of concepts such as saturated, unsaturated pairs of physical processes: evaporation and condensation using the established dependence of pressure on temperature, students are challenged experimental task observations of physical phenomena.

The purpose of the assignment is to observe on the experience of the transition unsaturated vapour in saturated with changing pressure and temperature. Students first make sure of the mechanism of evaporation of a liquid in an open test tube, and then see partial condensation of saturated steam (the appearance of fog in vitro).

Continue to be a problem: what will happen to the liquid in a closed test tube?

Experimental task.

Theme: "Observation of the transition unsaturated vapours in saturated".

Apparatus and materials: test tube with a stopper, a glass of cold water, matches.

Repeat the notion of saturated and unsaturated pair, condensation, evaporation, and dynamic equilibrium, the relationship of the saturated vapor pressure on temperature.

To obtain saturated steam in vitro:

a) pour into a test tube of water and pour it into a glass;

b) to hold the tube upside down over the flame of a match;

c) to draw in a mixture of air with the steam of their tubes.

What do you see? How to change the pressure, temperature? What pairs formed?

To observe the liquid in a closed test tube:

a) pour into a test tube with a little water; b) to close the tube.

What do you see? What processes occur in the test tube? How to change the weight and pressure of steam? What happens to water vapor over time?

To conduct observation of the transition unsaturated saturated steam in a low temperature:

a) to omit a closed tube in a glass of cold water;

b) remove the tube after 30 sec.

What you see on the inner surface of the tube wall?

Conducted the experiment in accordance with the mission of the teacher. Each pair of students has a simple set of equipment on the table to perform the experiment, applies theoretical knowledge of the basic concepts that you should know in advance, or, if the experiment is used to study new material from textbooks. The design work is done in working notebooks. Similar to the experimental task can be represented in the following chain: question - hypothesis - experience - conclusion - the next question and so on, in the considered case the experiment is to test a scientific hypothesis, and demonstrates the role of practice in the learning process.

Results and discussion. Due to the short duration of the run (up to 10 minutes) experimental tasks can be included in any part of the lesson, to address different learning objectives: introduction to the topic of the lesson, illustrations for explanation of the teacher, repetition and generalization of learned the lesson material, practical skill.

Lesson using experimental tasks demonstrates the possibility of implementing a differentiated approach in the allocation of tasks, a combination of individual and collective work of students, a high degree of autonomy of the students in the actions and judgments. At the same time performs the function of checking and consolidation of knowledge. Developed and still developing new skills. This is all valuable features of the proposed experimental tasks and objectives.

Experience in the pedagogical process, experimental tasks, tasks, experiments and demonstrations stimulate cognitive activity of students.

Conclusion. Further improvement of these techniques contributes to the development of creativity in students; enhance their knowledge and building skills to apply the acquired knowledge in practice.

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DEVELOPMENT OF THE SCIENTIFIC AND METHODOLOGICAL SUPPORT OF PROFESSIONAL TRAINING IN THE SOCIAL CONDITIONS OF HIGHER EDUCATIONAL SYSTEM

COMMUNICATION SPECIALIST TRAINING

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Modern specialist is a highly skilled professional who is able to interact with the public, different social groups and individuals; who combines erudition with knowledge of the specific activity, and, therefore, who has high communicative activity culture. That is why one of the relevant objects of modern training and retraining of specialists of any sphere is the development of complex disciplines of communicative cycle.

Communication is a universal phenomenon that has transformed the look of the modern world, has expanded various sources of information, communication facilities and information channel of delivering knowledge, radically changed the content of the communicative processes in all spheres of activity.

Material and methods. There is no doubt that the present requires a high communicative competence of its subjects. The above fully applies to the training of specialists in those spheres, which professional functions are carried out with a high level of dynamism, with a high degree of responsibility, with a high level of necessity to establish constructive relationships in plural contact environments.

It is necessary for competent specialist to have both knowledge of psychology and a permanent taking into account sociological data, which regard peculiarities of socialization and value orientations of modern society. According to available information, today the changing of socialization, values of generations occurs every five years. In this regard, the hallmark of our time is the desire of the society and state to the active development of the social sphere, part of which is education in different institutions providing the opportunity for continuous learning throughout a person's life. Certainly, continuous improvement of communicative competence of specialists will allow gaining the trust of colleagues and will reduce the risk of adverse decisions. Knowledge of different types of communicants, peculiarities of their representative systems, possession of the methods of influence on the staff, as well as actions on the basis of algorithms communicative behavior will develop communicative experience that will lead to effective implementation of goals.

Obviously, the primary means of improving communicative competence is communication training, which should be very quickly and accurately respond to any innovative change in subjective relations, as well as to emerging educational needs and requests of the staff.

Results and discussion. On the basis of the State Educational Institution "Academy of Postgraduate Education" we have developed an distance course that allows to build for each student an individual trajectory of communicative learning, to selectively study the material which interest a particular person, to actively plan and organize learning process, and, as a consequence, the qualitative result of education.

The main goals of a distance learning course "Specialists' Communicative Training" is the creation of conditions for professional self-determination specialist; forming free communication skills, ensuring open dialogue between communicants.

There were outlined the tasks of the course to accomplish the purposes:

To determine effective management mechanisms of the organization of educational process;

To equip specialist with the tools of self-monitoring and self-reflection aimed at the development of the mechanism of reflection;

To improve computer literacy, skills of working with IT-technology used in the organization of training and communication;

To teach specialists techniques of increasing communicative competence.

The proposed methodological program performs educational, developmental and corrective functions.

The course program consists of four blocks: andragogy; psychology and neurolinguistics; rhetoric in the field of business communication; information communication.

Andragogical training promotes the expansion of the ideas about the trends of modern approaches to the organization of the process of adult learning, taking into account the characteristics of adult learners, the nature of their employment.

This part of the program developed with modern concepts in the field of philosophy of education, actual directions of the organization of adult education and specific planning of adult education.

Psychological and neuro-linguistic training will allow independently to analyze and to interpret personality traits, mental states and properties in relation to oneself and others. It is necessary to better psychological adaptation to the conditions of modern society, increasing mobility, solving problems arising in the process of interpersonal communication and interaction.

The relevance of psychological and neuro-linguistic training due to speech activity specialists and a wide range of issues discussed not only neurolinguistic and psychology, but also philosophy.

Rhetorical training in the field of business communication is aimed at developing and improving skills of public speaking, forming a culture of public speaking, dispute, professional communication. Business communication is considered as a process of communication, as mutual perception and interaction. There are discussing the questions of ethics of business communication and business etiquette; the image of a business person.

In the conditions of informatization of society demand specialists owning complex information technologies with a high level of professional competence, communication, perceptibility of innovation, able to make quick decisions in emergency situations. This fact determines the necessity of the forming of information-communicative competence of specialists.

Information-communication training emphasizes the importance of this component in the content of adult education, as well as the indissoluble unity of its components, information and communication and is considered as one of the components of the general culture of the person.

Conclusion. Communication, according to V.A. Kan-Kalik, is “one of the most complex areas of human existence” and is not only “luxury”, but also “professional necessity” [1, p. 4]. Note, that in the XXI century communication specialist training is a tool, which largely depends on the quality of professional activity, and the study of the “gap” in the communicative competences of the specialist, the appearance of his problems (errors and systematic errors in the work, reducing its quality and efficiency) will help to become adequate, congruent communication partner.

Research in the field of modern communications show that a significant part of the difficulty in communicating due not to the shortcomings of the scientific and methodological training of professionals, but the deformation of the sphere of professional communication.

Thus, the modern specialist requires skills and willingness to build effective communication with other people directly involved in the communication.

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GENDER ASPECTS OF PREPARATION OF TEACHERS

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Change of the social status of the higher school focuses a science and practice on search of innovative strategy of updating of the contents and technologies of training of specialists.

The higher education should be focused not only on a preparation of professionally competent people possessing fundamental and applied knowledge and high culture of the organization and implementation of professional activity, acquisition of wide basic education by them experts, but also on their target socialization (harmonization of the relations of the person with the natural and social world through development of a modern picture of the world) [1]. Training of specialists at university will be high-grade if the teacher in system of an educational, scientific and production activity realizes its components: special and subject, cultural, pedagogical, psychological and psychophysiological.

It is known that one of actual problems of modern professional education is formation of psychological health of future experts. It is possible to allocate conditionally two main strategy of psychological support of studying youth (school students, students of higher education institutions, professional colleges and lyceums) in the course of professional education:

1) creation of optimum conditions for personal and professional and psychological growth and formation of adequate ways of problem solving behavior.

2) overcoming of the negative sides and development of internal potential of adaptation to educational and professional activity [3].

These strategices can be realized in the presence of scientific and reasonable methods of psychology-pedagogical support in establishments of professional education.

Recently the gender perspective began to declare everything more actively itself in various branches of scientific knowledge. This tendency concerned also psychology. In psychological publications even more often it is possible to meet such concepts, as "gender", "gender", «gender researches». The word "gender" has no unequivocal translation into Russian, and one of word meanings of "gender" is defined as «floor classification, a floor», that is «gender» — is the category referring to a floor. Other word meaning of "gender" - "representation", that is a gender is understood as the representation of the relations showing belonging to a class, group. [2]

Thus, now gender researches are presented in two aspects: the first aspect assumes realization of a gender approach as scientific theory and the research practice, the second —the educational practice [4].

The purpose of the research - definition of influence of features of educational and pedagogical disciplines at university faculties on formation at students and students of concepts of relationship of floors, i.e. existence at them gender culture of the personality.

There were objectives: to reveal existence at students of knowledge of a gender; creation of gender culture; degrees of gender stereotypes at the students who are training on various specialties.

Material and methods. For the solution of these tasks researches of 60 students 2 courses of faculty of physical culture and sport of university.

Similar way a technique of poll whether consisting of 40 questions on dough *« Do you know psychology of the man and the woman? »* students of faculty of social pedagogics and psychology in number of 30 people were investigated. The list of questions of dough includes statements about psychological features of the man and the woman which the examinee should estimate in points.

It is characteristic that 80% of students were made by the young men of 18-20 years who are engaged actively in physical culture and sport. 40% from them – athletes rated sportsmen. Girls gathered on the average 20-25 points while young men answered more surely and the range of their answers corresponded 25-27 points.

Results and discussion. Results of researches on psychological dough allow making the conclusions that coincidence in answers and the total amount of points at students of faculty of physical culture and sport characterizes specifics of behavior and physical activity of students. Thus, systematic occupations of physical culture and sport influence their mental and emotional sphere.

This technique is the initial stage in clarification of existence of gender culture at students as is not rather informative. For more authentic results additional researches on the same groups of students were carried out. Questionnaires were for this purpose offered. It is characteristic that on a question «about existence of gender problems in our society», "no" – the majority of students of faculty of physical training, considerable percent of students answered – I "do not know", «I find it difficult to answer». And, that insignificant knowledge of relationship of men and women in society and a family which students possess is obtained them in a circle of contemporaries, or through mass media. Feel need of receiving additional knowledge of gender culture – 40% of respondents.

Attracts attention that fact that, the answer of students of faculty of physical training to a question: «When you for the first time heard about a gender?» – in 90% of cases was: «Now during questioning». 60% of the interrogated students represent the concept "gender" as «sexual distinctions of men and women» and only 35% – chose option «a set of the characteristics defining social behavior of women and men, and 5% answered I "do not know".

Conclusion. Results of the carried-out researches can be used in work of psychological service and in pedagogical preparation of students within teaching of disciplines on pedagogics and psychology chairs. These disciplines should help to students to learn to analyze social problems with application of a method of gender interpretation for representation about sociocultural, medico biological and the psychological factors influencing on self-determination of men and women in modern society.

Thus, psychological researches of youth problems in modern conditions of reforms of social life of society constantly change from the own and academic questions of knowledge in the integral components of practical development of social reality.

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A SOCIAL WORKER EMOTIONAL BURNOUT: DEFINITION, FEATURES

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Emotional burnout is a response to long-lasting stress in the sphere of interpersonal communication. A lot of factors cause the development of this syndrome: profit pursuit, improperly organized work with colleagues and clients, organizational and professional stressful situations and many other factors. People begin ‘to burn out like light bulbs”. Then the condition of emotional, psychical and physical exhaustion in the result of unresolved problems at the work appears and people can’t work effectively. According to E. A. Klimov’s classification social work belongs to the type of socionomic professions. Work in the “person – person” system is considered to be the most complicated throughout the world and often leads to the burnout syndrome of a specialist. The aim of the article is to investigate, to analyze, to systematize different approaches concerning the definition of “burnout syndrome”, which is typical of social work specialists.

Material and methods. Scientific works of foreign and native scientists and practitioners studying the emotional burnout problems and its different aspects were used for the preparation of the article. For obtaining empirical data by the author the questionnaire acting as flight research is conducted (the trial and search type of research, is carried out to the basic and is its simplified form). Responednta – social service providers of Vitebsk (30 people).

The notion itself was introduced into science by American psychiatrist Gerbert Freidenberger in 1974 and is characterized by increasing emotional exhaustion. All this can cause personal changes in the sphere of personal communication (up to the development of deep cognitive distortions). Later the definition was completed and became characterized by the following features: appearing increasing indifference to one’s duties and events occurring at work, dehumanization in the form of negativism in relation to both patients (clients) and colleagues, the feeling of one’s own professional failure, work dissatisfaction, cases of depersonalization and as a result a rapid decline in the life quality. In the end neurotic disorders and psychosomatic diseases can appear.

Results and discussion. At present the problem of emotional burnout is investigated in such sciences as psychology, pedagogics, medicine, sociology, jurisprudence and others. So, American researcher Cristine Maslach described the syndrome symptoms and offered the diagnosing method (1982). A. Lengle considers the burnout syndrome as a kind of depression which appears without injury and organic disorders but only because of gradual life values loss. F. Pines and E. Aronson define the burnout syndrome as a syndrome of overstrain and fatigue which can be found in any profession as well as outside the professional activity (for example, in housework). According to E.V. Orel the burnout is a polysystemic formation which is included in a number of interactive systems of different levels where the main system in which the burnout syndrome appears is the system of professional personal development.

In the last decade there has been an increasing interest to the burnout problem from scientists of the UIS countries (V.V. Boiko, N.E. Vodopianova, M.A. Vorobiova, N.V.Grishina, E.V.Orel, A.A. Rukavishnikov. M.M. Skugarevskaya, T.V.Formanuk and others).

In modern Belarusian science aspects of emotional burnout in general and among the social sphere specialists in particular are investigated by such authors as T. Formanuk (she described the variants of professional burnout symptocomplex), G.S. Abramova (she studied the medical aspect of the burnout syndrome), N.S. Pashuk (he investigated the origin and development of “psychical burnout” phenomenon in higher educational establishment teachers and lecturers), K. Chernis, Yu. Yudchits, L.I. Kasianova, E.V.Yanoshuk, I. Sokolova, A.R. Fonarev, A.S. Shafranova, N.P. Vodopianova, T.I. Ronginskaya.

A special factor affecting the development of burnout syndrome in social work specialists is their enormous workload. It is rational to see into the problem taking into account the statistics. For example, as of July,1 2014 there were 536,9 thousand disabled persons registered in the employment and social protection departments, 19,6 thousand Great Patriotic War veterans; 29,6 thousand war victims. 146 territorial social service centers provide persons and families in difficult life situations with help and services. 1.7 million people are registered in such centers (including 127,0 thousand people without families and 570,4 thousand elderly persons living alone; 23,7 thousand single disabled people and 29,9 I and II group invalids living alone; 7,9 thousand orphans and children without parental care – former pupils of children’s boarding schools , children from foster and adoptive families; 4,2 thousand citizens who are former prisoners; 70,0 thousand many-children families; 131,1 thousand single-parent families; 23,3 thousand families bringing up disabled children).The number of permanent institutions in the Labor and Social Protection Department of the Republic of Belarus is not small – 69. [1]

All this proves that a great number of people need social help and support. Taking this fact into account one can suppose that a social work specialist has an incredible amount of workload concerning both the number of people and consequently the number of provided social services. So the risk of appearance of “burnout syndrome” increases.

The necessity to work in a monotonous rhythm or in stressful conditions, with emotional load dealing with “difficult contingent” contributes to the development of the syndrome. Some authors (G.A. Makarova, E.P. Ilyin) consider that the absence of proper reward (not only material but psychological) is also a cause of the syndrome and makes a person think that his work isn’t worthy.

For confirmation of data we developed the questionnaire consisting of 10 questions. Answers of respondents were distributed as follows (Table 1)

Table 1

Definition of emotional burning out among social workers of Vitebsk

№	Issue	%			
		Yes	Rather Yes, than Isn't present	It is rather not, than yes	No
1	Whether completely you are satisfied with working conditions	10	23	53	14
2	Whether you are satisfied with the salary size	0	7	7	86
3	Whether amicable you have a working collective	30	30	34	6
4	Whether you experience difficulties in communication with clients (misunderstanding, aggression, irritability)	10	52	34	4

№	Issue	%			
		Yes	Rather Yes, than Isn't present	It is rather not, than yes	No
5	Whether there is for you a possibility of professional development	100	0	0	0
6	Whether you seek to raise a skill level, professionalism	66	30	4	0
7	Whether you consider the work prestigious	0	6	86	8
8	Whether you are satisfied with the attitude towards you your direct head	13	54	20	13
9	Whether you reflected on change of a profession	84	6	0	0
10	Whether your work is pleasant to you	7	53	33	7

Conclusion Prevention of the burnout syndrome in social work specialists demands the development of several measures concerning first of all the optimization of workspace in the institution and organizational and managerial measures in particular: professional selection of the staff in order to avoid specialists who are not interested in the job; foundation of a supervision system to pass social activity experience to young specialists; introduction of optimal schedule with breaks, attraction specialists to physical culture and sport, the opportunity to change the activity; involving all social service workers in management; the formation of positive psychological climate among staff, the development of career perspectives and promotion. So, organizational changes carried out by managers of social sphere establishments can play the main role in prophylaxis of social workers burnout syndrome. At the same time specialists themselves can take some measures in optimization of work organization. First of all it is necessary to analyze the schedule and possibilities of its modification (to estimate the terms of a task fulfillment and if possible reduce work intensity; to establish aim priority; to define the sphere of one's responsibility and not to take responsibility for other specialists' work.

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PROFESSIONAL TRAINING OF TEACHERS WORKING WITH MIGRANT-CHILDREN

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The Belarusian education system must ensure the integration of migrant-children in our society. It is necessary to develop training programme and individual training modules that should be included in the programme of improvement of professional skill and retraining of pedagogical staff. This article describes the need for additional education of teachers on issues of multiculturalism.

Material and methods. Theoretical methods: analysis of literature and legislative documents. Empirical methods: analysis of the sociological questionnaires.

The article presents the approach of the Academy of postgraduate education for the formation of teachers' socio-personal, professional and academic competencies.

Results and discussion. The requisite conditions of adaptation of migrant children is a high-quality training of teachers.

Developing migration processes has led to the emergence of internally displaced persons, refugee children, migrant children. Accordingly, the problems of adaptation of such children in a foreign cultural environment, in the Belarusian society are aggravating.

Children from diverse ethnicities groups study in almost every school in our country. Classes of modern Belarusian schools are heterogeneous: the children speak different languages, have different territorial origin, and have different religious beliefs. Each pupil is unique in his own way. And a teacher should be prepared to work in an environment of diversity.

In the Academy of Postgraduate Education the educational standard of training of executives and specialists in education has been developed and applied, it is distributed on a specialty "Social Pedagogy" as a kind of professional activity that requires certain knowledge, skills and competencies, as well as to the qualification of "social pedagogue" as trained workers to this occupational sector [1, p.1].

The social pedagogue in his professional activity performs a number of functions:

- provide social and educational support for children and families,
- be engaged in social education of children and youth,
- implement socio-educational diagnosis, correction, rehabilitation, prevention, support and protection of families and children,
- fulfill social control of behavior of children and youth,
- coordinate the interaction of social institutions to optimize the social environment of formation of a student's personality [1, p. 4-5].

In the academy 3 groups of competencies (socio-personal, professional and academic) are being formed in the process of preparation of a specialist.

Taken into consideration the educational standard the Academy of Postgraduate Education has developed and tested a sociological questionnaire which allows to assess the willingness of teachers and leaders to work with migrant children.

The survey has showed that only 23% of social pedagogues (1 study group - 25 people – was questioned) and 7% of deputy directors (2 study groups - 50 people – were interviewed) believe that it is obligatory for teaching staff to possess certain competencies for interaction with migrant children.

The result of the survey is influenced by the fact that earlier in Belarusian schools problems of adaptation of migrant children, integration of other cultural families in our society were not actual.

It is also worth noticing that the socio-pedagogical work with migrant children doesn’t receive methodical support. Of course, the educational work of schools includes measures to promote tolerance, however, teachers do not have adequate methods to systematically implement the basic principles of multicultural education.

In the Academy of postgraduate education on the basis of the results of the survey the invariant module has been developed which trains teachers and depute directors in peculiarities of work organization in an environment of cultural diversity.

After the training trainees will possess the following competencies:

- knowledge of cultural, ethnic, religious differences and the ability to take it into account in communication,
- the understanding of the social and psychological problems of migrants,
- knowledge of ethnic psychology,
- the ability to destroy stereotypes in the perception of migrants,
- the ability to resolve conflicts on ethnic, religious, cultural grounds in the students’ environment,
- the ability to attract migrant students and their parents to interaction,
- the ability to create a friendly and open-minded attitude to migrant children in educational institutions,
- the ability to provide specific rehabilitational leisure environment for this group of students,
- the ability to build tolerance towards migrants among all students,
- the ability to provide the wider community of migrant students, optimizing network interaction [2, p.10-11].

Conclusion. Thus, the generated social-personal, professional and academic competence will allow teachers to organize the work in a multicultural educational space: to analyze the factors of socialization and adaptation of migrant children, to optimize the conditions for their integration into our society, to predict the results of socio-pedagogical work with migrants, to provide quality of social-pedagogical assistance and support to migrant-children and their families.

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SOCIAL MANAGEMENT MECHANISM WITHIN THE SYSTEM OF SOCIAL PROTECTION OF THE DISABLED

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In modern Belarusian society, with its highly valued ideological diversity and self-regulated social life, the creation of truly fair society is the main fundamental system task. Professor A.G. Shrubenko considers it as viable multidimensional development of man, material welfare, personal happiness, humane democratic relations, spiritual and social self-fulfillment of people, their purposeful cooperative and efficient labour, the possibility to upbring and educate their children [1, p.57].

Material and methods. The system of social protection of the disabled in modern Belarusian society is analyzed on the basis of scientific researches, normative legal documents as well as official statistics. According to the author the settlement of contradictions can be achieved through development of the concept of social management mechanism within sociological theory.

Research objective is the analysis and perspective development of system of social protection of disability people in modern Belarusian society. Theoretical methods of research – the analysis of literature and the official statistical account are used.

Results and discussion. Referring to the given definition of fair society and its main components we'll try to analyze the situation of such category of people as the disabled. Without any doubts we admit the fact that the disabled people are most vulnerable economically and legally. This vulnerability is caused by various social barriers for their activity caused by the attitudes of the rest of society.

Historically, the disabled were excluded from social relationships. In ancient society with its religious world outlook disability was considered to be a contraposition to "Man is God's Analogy". As a result disabled people were exposed to shame and isolated.

Medical (administrative) model in regard to the disabled was widely implemented into public opinion throughout the development of health care and social welfare systems. This model considered people with reduced capabilities as incompetent, unable to be responsible for themselves, unable to work, requiring constant care and sometimes dangerous for society. This model referred to as humanistic also implied appropriateness of isolating disabled people in separate specialized institutions - rest homes.

In the last decade in native science (as well as in all democratic community) the idea of abandonment from paternalistic forms of support to disabled people dominates. The number of laws, acts and decrees concerning people with special needs were passed. It greatly influenced upon transition from a welfare mentality, shiftlessness to fulfillment of one's abilities, taking up responsibility for one's life. There were changes in the definition "a disabled person" fully complying with the United Nations convention of the rights of the disabled. Thus, a disabled person is a one with stable physical, psychical, intellectual and sensor defects which while interacting with various barriers prevent complete and efficient life activity on a level with other citizens. This definition is based on considering disability as social phenomenon and it neither separates the disabled from society nor exclude them from some spheres, but this definition emphasizes their individual peculiarities and necessity of searching ways of adaptation for their full and efficient participation in public life on a level with other citizens.

A wide range of legislative acts, range and contents of guarantees and measures of support for the disabled testify not only social orientation of common and specialized law of the Republic of Belarus concerning the disabled but at the legislative level a steady tendency of forming approach and taking measures how to integrate the disabled into normal life, how to involve them into participation in all spheres of life and how to prepare society for mutual adaptation. This social idea is central in a new model of disability.

At the same time, having analysed statistical data, we will note that paternalistic moods concerning the disabled people, being expressed, as a rule, in isolation "not similar" on "ordinary" people, kept the place and in modern Belarusian society. Existence of stationary establishments of social service and number of people (Table 1) living in them testifies to it. Moreover, there is a sequence by definition in houses boarding schools.

Table 1

Residential social service institutions for elderly and disabled persons

	2000	2005	2009	2010	2011
Number of nursing homes for elderly and disabled (adult) therein:	63	61	62	65	67
- beds(thous.)	14,9	14,9	15,8	16,2	16,4
- residents (thous.)	14,2	14,7	15,4	15,8	16,0
Number of nursing homes for disabled children therein:	9	9	9	9	10
- beds(thous.)	2,0	1,7	1,7	1,7	1,8
- residents (thous.)	1,8	1,6	1,7	1,6	1,7

At the same time we can't but emphasize the positive tendency in the increase of the working pensioners and disabled people who were employed with the help of social welfare bodies during last two years. It is also possible to observe that also the quantity addressed concerning employment considerably grew [2] (Table 2).

Table 2

Job placement by agencies for labour, employement and social protection

	Applied for job placement (persons)			Placed to jobs (persons)		
	2005	2010	2011	2005	2010	2011
Pensioners and disabled	9379	15288	17545	808	2927	4090

Basing on theoretical and empirical data, we can see an interesting social situation: on the one hand, the government takes up all possible measures to improve social conditions for the disabled (laws are constantly being improved, new forms of work are being implemented). But, on the other hand, there are still barriers to full and efficient participation in life activities for the disabled. These barriers are space, environmental, financial, economic, informative, emotional, psychological, administrative and legal ones.

We think that comprehensive resolution of any problem for any category of community should be carried out by the members of the same community. In this case, only disabled can efficiently resolve all questions concerning social protection of the disabled. Social management mechanism is referred to as an organized by law and particular social conditions social interaction between running and run entities. That is, taking into account the data concerning the disabled it is reasonable to study their educational background, experience of work for non-governmental organizations, their health, proclivities and abilities in order to involve them into active settlement of their own problems. In connection with this it is necessary to analyze their current potential starting from a tender age. It can the form of work with disabled children in preschool facilities, schools, and further in institutions providing career and technical, vocational secondary and higher education. At any age it is possible to conduct games aimed at the development of leadership skills of people with disabilities and their environment as well. In case of older people lectures, discussions and various activities can be introduced. The main idea of this work is to reveal the potential of every disabled person and help maximally him to get involved into social relationships, to create conditions for the fulfillment of his skills, to prevent his isolation. Then, basing on comprehensive data it is possible to draw a conclusion about a niche appropriate for him taking into account his proclivities, interests, educational background, health. Social mechanism will be specific, and its parameters will be determined in the process of sociological expertise of the decisions being made.

Conclusion Thus, within social management mechanism, the disabled should be looked upon not as run subjects but first of all as doers with special needs and with their own specific viewing of the problems which is not always taken into account by officials (who are not disabled) while implementing social policy. At the same time managers with disability should be treated as usual people according to their educational background, leadership skills, emotional stability, creativity and so on (providing the lack of serious restrictions, for example disease severity and so on).

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DESIGN AND MODELING OF SUBJECT-SPATIAL ENVIRONMENT BY MEANS OF DESIGN, FINE AND DECORATIVE ARTS

COMPUTER GRAPHIC TRAINING OF SPECIALISTS IN THE FIELD OF DECORATIVE AND APPLIED ARTS

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Nowadays it is difficult to imagine the process of training of the specialist without use of the computer technologies. A number of the scientific works performed in this field testifies that computerization of education is the positive phenomenon [1, 3, 4, etc.].

The art and graphic faculty of VSU named after P. M. Masherov carries out training on speciality «Decorative and applied arts» at the level of the higher education. The main direction of professional activity of the specialists in this field is production of art products. One of the most important development stages of objects of this sort is creation of a graphical project. Along with the methods of projects execution by means of graphic materials, students learn the features of graphic designing on the computer. It occurs when they learn the discipline «Information technologies in Decorative and applied arts» [2].

Due to the updating of a number of normative documents in the sphere of the higher education, we defined a purpose of our research – development of a technique of teaching the discipline «Information technologies in Decorative and applied arts» that conducive to the formation of students` professional computer literacy with a bias on realization of the competence-based technologies.

Material and methods. The direction of our research defined a choice of methods of its carrying out: analysis of psychologycal and pedagogical literature and documentation, supervision, conversation and analysis of an experimental material.

To solve the problem, we decided to carry out a number of actions: 1) the contents and methods of training are revised; 2) we defined a number of competences on which formation the training process is directed; 3) the course is structured according to the modular and rating system of training and an assessment of knowledge of students; 4) we developed the parameters of control of the students` work; 5) we developed the complex of electronic educational resources on discipline.

Results and discussion. As a result of the performed work, we determined the mandatory requirements to the contents and competences by discipline. So, when studying a course of information technologies, students acquire knowledge of appointment and functions of informatization systems software; they acquire knowledge of the opportunities of hardware and the software that applies to design the art products, and also ways to display and organize image data on the computer.

Teaching a course is directed on formation of skills of creation and editing the text, graphic information and computer models, searching, viewing and obtaining the information from various digital resources, management of the files organization by the tools of special programs.

The practical side of the learning process is the formation of receptions of designing the art products through the computer graphics usage.

It should be noted that in the course of training the students learn all the necessary professional instruments of work in the field of decorative arts, design and computer graphics. They learn techniques for working in computer programs such as MicroSoft Office Suite, CorelDraw Graphics Suite, Adobe PhotoShop, 3ds Max and others.

In view of features of the modular and rating structure of the educational process, we decided that the course has to include introduction, theoretical, practical, control, rating and other elements. Besides, the assessment of knowledge is carried out on the basis of the current, intermediate and total control.

Currently all necessary materials on discipline is uploaded on Learning Management System of the University (http://sdo.vsu.by). Thus, students can view and download the basic and additional information on the course.

Conclusion. It should be noted that with the usage in educational process of opportunities of the computer technologies, the training of specialists in the field of decorative and applied arts includes the computer and graphic training which is carried out according to the modern principles. It provides students the knowledge and skills of graphic designing, modeling and work with images on the computer that in turn promotes increase of level and quality of the specialists training.

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THE REVIVAL OF CHURCH FRESCO AS AN IMPORTANT PART OF SPIRITUAL CULTURE

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The necessity of exploring the modern monumental temple painting as a cultural phenomenon which has been developing during the last decades and has already declared itself as a main spiritual event of our age, is determined by obvious significance of process of revival of church art and by the role which orthodox painting plays in a spiritual culture nowadays. The goal of this article is to examine processes of the revival of church fresco in the context of modern spiritual culture.

Material and methods. The research in the field of sacred monumental painting is usually based on traditional iconographic and comparative-stylistic methods of art critic analysis. Principles of study of temple decoration system, as architectural and artistic synthesis, include an analysis of architectural space, the specific of the distribution of natural sources of lighting, traditional iconographic and stylistic study of paintings.

Results and discussion. Modern monumental sacral painting is included in the solution of huge task of synthesis of arts, which found expression in religious buildings. It constitutes a single ensemble with architectural works, but, in addition because of its specific, has an independent artistic and historical significance, is nowadays characterized by diversity and by richness of used technics, materials and technologies.

A key role in the formation of modern religious art play old Russian paintings. A wellnown Russian researcher F.I. Buslaev claimed that old Russian art of iconography "has bravely been aspiring to the expression of great goals ", "was a direct expression of the inexhaustible wealth of ideas" [1, p. 294]. The Philosopher E.N. Troubetzkoy wrote that the old Russian masters have thought about the meaning of life "not in words but in colors and images" eager to answer the eternal questions of life, about which modern man is so hard and painful thinking about [2, p. 20]. Philosopher I.A. Ilyin had created a whole study dedicated to the basics of Christian culture in which he had marked: "Whoever will be able to think about, and most importantly will be able to feel these bases and sources of Christian culture, will see what great and majestic spiritual space is open to modern man" [3, p. 334].

The loss of church painting experience in the Soviet era, the shortage of knowledge in the field of theology, church practices, techniques and technologies of past eras of art and new techniques - all this has affected the nature of sacred art, when contemporary artists have started to copy the church works of the past in modern cream stances. How to realize new gaining in the monumental church painting characteristic to the late XX? Search in the most complicated imaginative solutions, careful reading of canonical subjects, experience of depicting of latter-day saints, the most important events in the modern history of the Church and more have become an answer.

The end of XX and the beginning of XXI centuries have become a period of large-scale development of the Orthodox monumental painting. Church wall painting draws attention of specialists in different areas of knowledge and, above all of art critics, professional artists, culturologists, theologists. The current stage of development of the monumental Orthodox painting is historically unique and self-sufficient, but it is closely connected with the art of the past. The Church was the personification of spiritual and cultural values of society since the adoption of Christianity over many centuries of history. However, the end of XX - beginning of XXI century is a crucial historical moment which concentrates in itself a whole series of global change: social, political, economic, historical, religious, ethical, and artistic.

This time is characterized by a fundamental change in the attitude of the society to the church heritage, by aspiration to restore the connection to time and remember the traditional spiritual values bequeathed to us by our predecessors. Words of S. N. Trubeckoy: "completely new in the history does not happen. Historical development is inconceivable without historical memory, and in this memory we find samples and inspiration for the new art " sounds rightly today [4, p. 324].

Thus, the need of Art study to study the genesis of ecclesiastical art of modern masters, in determining the trends and directions of development of the monumental temple paintings in the XXI century is very significant. The study of this problem can become the basis for a whole series of research directions in the study of modern Orthodox art, to enter into the structure of university educational programs in the field of history, history of art, and culture.

Conclusion. Everything, that was mentioned before leads to the conclusion about the peculiarity of the modern stage of development of religious art and indicates that it is an independent period in the history of religious art at the border of the XX-XXI centuries, significantly enriched the practice of orthodox painting.

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SIMULATION OF THE EDUCATIONAL ENVIRONMENT IN HIGHER ART DISTANCE EDUCATION

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The concept of development of the student as the subject of activity is now becoming current scientific and practical problem. One of the main sources of professional development of the student's personality is his own professional activity. The source of artistic and creative development for the future teacher is artistic and creative activities, which are the conditions for the effectiveness the active interest for art, the requirement for self-expression through the art and creativity work [2, p.18].

The aim is to improve the quality of student learning on the basis of the artistic disciplines information and communication technologies.

Material and methods. To achieve the goal of the study was conducted basic level students start with the study of the discipline "Folk arts and crafts" in the graphic arts department of the VSU named after P.M. Masherova. We used the following system methods: analysis advanced pedagogical experience of teachers and artists, educational-methodological base for the decorative and applied art, folk art, the monitoring, the interviews with students and questioning.

Results and discussion. The logical complete organization the pedagogical process, which is typical systematical character, entirety, self-development, self-constancy the participants, the presence of a certain mode of conduct and is the main form of student learning. The educational institutions distinguish the following types of forms learning: theoretical (TO) and practical (PO). Depending on the location of the theoretical and practical learning isolated classroom and extracurricular forms acquiring organization of learning students [1, p.41].

Now in Vitebsk State University named after PM Masherova actively implemented self-controlled work with students. Online is constantly updated and placed educational-methodical recommendations (modules) for students studying disciplines daytime and correspondence departments. The modules include all necessary training materials on studying the course, the program me, the map of the discipline, the electronic version of the lectures (interactive lectures) the guidelines for the laboratory and practical work, the questions to prepare for exams or offset the themes abstracts coursework, the material for self-extracurricular students work, etc.

The electronic lectures give opportunities students to get not only the content of the current theoretical part of the course, but also to prepare for the next topic, that is the further material will be listened with the certain level of understanding. At the workshops practical exercises the subject for the disciplines «Fork crafts» in the classroom, the students are lern to the basics of the technology accomplish decorative. The tasks have the creative character, based on the individual abilities each student on the website are presented the questions. Also the list of the literature sources, selected for the successful assimilation the discipline. All prints can be studied in the university library, and the most meaningful sources are electronically processed and placed on the website of the University Research Library. «The Useful links» provide the opportunity to move the different websites on the topics of the discipline, watch documentaries, video lessons etc. The education in conditions of the information educational environment where the curriculum, tasks and all necessary studying materials are placed on the educational website, allows provide speed of the progress on the course, it gives students an opportunity to form the individual educational trajectories and choose their own rate of study the material.

At the department of arts and crafts and technical graphics VSU name after P. M. Masherov studies the effectiveness this model of learning and its impact on improving the quality of the education and the formation of the professional competence future specialists. Conducted experimental work on the organization the process of preparation for the winter and summer sessions students of 2-4 courses of the specialty «Fine Arts» art-graphic faculty. In the experiment participated 156 students of correspondence courses. As a result of the experimental work, data processing and analyze, we can conclude that the training and methodological support students' independent work as the available and complete a full academic website:

• allows to implement the basic principles of didactics (scientific, systematic, modularity, continuity, visibility) and creates the predictions for improving the quality of teaching;

• provides students depending on the individual qualities the ability to control the rates of the study material and improve the quality of training;

• give the opportunity quickly find necessary information quickly and thoroughly understand the theoretical material;

• increase the role of self-extracurricular work tends to improve students learning, as well as increasing the factor of useful work, increases the efficiency of the educational process.

The practically work formed with the initial knowledge formed in the process of preparing for the winter session. The control (The exam) allowed us to determine the level of preparation the students - the average score was «7.6».

Conclusion. The right planned, organized and controlled classroom and students' independent work has great educational and instructional value. It is the condition to achieve the high learning results and turns this knowledge into sustainable skills.

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THEORETICAL AND METHODOLOGICAL PROBLEMS OF CREATING OF LEGAL CULTURE FOR YOUNG PEOPLE AT THE PRESENT STAGE

A RECONCILER IN RECONCILIATORY PROCEDURE

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There are two possible variants of settlement of the contests arising in realization of enterprising or other economic activity:

- to force one side to do the actions which are indicated in the court solution;
- to reconcile one side with another on the basis of a compromise.

The idea of contesting sides' reconciliation and using for that various reconciliatory procedures has been successfully developing in the Republic of Belarus since 2008.

Material and methods. Reconciliatory procedure is a set of procedural norms which regulate the activity of the Economic Court to settle the contests arising in civil legal relations including relations arising in realization of enterprising or other economic activity and also the contests arising in labour and family legal relations directed to reach sides' reconciliation and stop production of the case [1, p. 3].

If the sides understand that a court solution doesn't settle their conflict, it will be a possibility to apply to a court reconciler at any moment of any stage of economic process [2, p. 31].

Results and discussion. A reconciler (a mediator) is a physical person corresponded to the requirements of the Law of the Republic of Belarus "About Mediation in the Republic of Belarus", who participates in negotiations of the sides as a disinterested person to co-operate them in contest's settlement. According to the part 1 of the clause 4 of the Law about mediation a mediator can be a physical person, 25 years old, who has superior juridical or another superior education, who has passed the preparation in the sphere of mediation in the order prescribed by the Ministry of Justice of the Republic of Belarus or who has experience as a reconciler in accordance to procedural legislation, obtained a certificate of a reconciler which is given out by the Ministry of Justice of the Republic of Belarus on the basis of a decision of the Qualification Commission of mediation. In accordance to the part 2 of this clause a mediator can't be a physical person, who:

1. is a state employee including accomplishing authority of a judge in a court, if it isn't provided for the legislative acts;
2. is declared in the fixed order as incapable or limited capable;
3. has convictions;
4. has authority as a judge of a court, a public prosecutor, a worker of the Committee of inquiry of the Republic of Belarus, the Statutory Board of legal expertise of the Republic of Belarus, organs of inherent affairs, of national security, of boundary duty, a worker of the Committee of state control of the Republic of Belarus, rating and custom authority, another state employee, a notary public officer, a private notary, a lawyer and it has been stopped in the order fixed by the legislative acts because of a perpetration of delinquencies incompatible with his professional activity – during 3 years from a decision-making day of making a corresponding decision, if it isn't provides otherwise by legislative acts;
5. it is taken a decision of stopping action of a certificate of a reconciler thereon offence The Rules of Reconciler's Ethics, established by the Ministry of Justice of the Republic of Belarus [3].

A reconciler may obtain remuneration. The remuneration's amount is fixed by the agreement between the sides. Any expenses of remuneration are distributed among the sides evenly, if the sides' agreement doesn't determine otherwise.

In the course of mediation a mediator determines factual relations between the sides, exposes essence of mutual claims, clears up the sides' positions about perspective of the contest's development and possibilities of its settlement, helps the sides to find the most effective variants and methods to stop their contest.

If the sides reconcile, it is concluded with a meditative agreement on all or separate requirements, which is approved by determination of the court and has a force of a court resolution.

Conclusion. Various possibilities of legal protection extend rights of citizens and legal persons by accordance of a choice of ways which can be used equally to complication of a situation and broken rights.

Sides' reconciliation is the best result of contests' settlement corresponding to interests of the sides and the state on the whole.

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SECOND OFFENSE AND CONTINUED CRIME: PROBLEMS OF IDENTIFICATION

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Second offense, along with a set of recurrence and is an independent form of multiple crimes. Previously valid Criminal Code (further CC) lacked the concept of second offense which was a significant problem of that time. However, inclusion of this concept to the special section didn`t solve a number of issues concerning responsibility of second offense.

Necessity of studying this concept is in the following:

- the problems of qualification of second offense are connected with the realization of such a principle of criminal responsibility as justice;
- second offense in the greatest degree says about a great dangerosity of a person, which, in its turn, is connected with the protection of rights and legitimate interests of other citizens;
- mostly complete regulation in legislation of crime of second offense allows to delimit it from other forms of plurality distinctly.

Relevance of the topic is the problem of determining the practical indications of continued crimes that subsequently affect the characterization of the crime.

The aim of the study is to establish the distinctive features of continued crimes and second offenses.

Material and methods. A particular challenge in the classification of crimes is the correct delimitation of continued crime of re-offending. Due to external similarity of these acts of criminal behavior, subtlety brink of subjective aspirations and ambiguity of their legal treatment.

Legislation doesn`t reckon for the concept of a long-termed c continued crime rime. Because of the indefinite difficulty of continued crime delimit from crime repetition, the concept of continued crime is worked out by the theory of criminal right and Jurisprudence.

Long-termed crime is one of the kinds of individual complicated crime which may be understood as commitment of similar acts each of which separately is not a crime.

The decision of the Supreme Court of the Republic of Belarus of December 21, 2001, № 15, in paragraph 25 "On the application of the criminal law by the courts in cases of embezzlement" there is a definition of a long-termed embezzlement: "Keep on the theft should be regarded as free of repeated unlawful seizure of property for purposes of gain, is composed of a number of identical criminal acts, committed under circumstances which indicate the presence of a person of common purpose and a common intent to steal a certain amount of wealth" [1, p. 25].

Having analyzed this concept one can note that the definition of continued embezzlement has the right meaning. However, formulation "having individual intention on embezzlement of a definite quality of wealth" says that the intention of a continued crime should be concreticised, that is not true, because embezzlements are stroke off a number of continued crimes groundlessly, and they are committed with a straight indefinite intention.

Research methods are the method of analysis and comparison. The method of analysis allows to identify and examine the main indications of continued crimes. The comparison method allows to identify the distinctive features of a single continued crime and second offense by the means of the law and theoretical propositions.

Results and discussion. Let`s define basic aspects of differentiation of the repetitive and continued crimes:

1. The peculiarity of continued crime is that it is committed with individual actions in disparate time that present episodes of the same criminal act.
2. However, in contrast to the second offense, the person commits two or more offenses, the offense continued not always expressed in the commission of several acts each of which presents an offensive act itself. In jurisprudence continued crimes are rarely met, they are characterized by a range of acts that are not considered offensive acts separately.
3. The continued crimes are characterized by the identification of criminal actions and their direction to the single goal, the unity of the intention and the final result.

The direction to the one goal is characterized by the internal connection of all identical actions that compose a continued offence. The object and the result of continued crime must be single. Thefts that are committed not once will be considered as continued crimes penetrated by a single intention and goal of delinquent's actions. When repeating the crime this goal is away while for intentional continued crimes it is characterized [4, p. 223].

4. Another feature that distinguishes the continued repetition of the offense is committed several acts, united short period of time. Presence of considerable period of time often says that independent crimes took place, which must be regarded as repetitive [3, p. 32].

There sultof the study is that the similarity of continued crimes and second offence is that the first and the second intend committing not individual but several similar or identical acts each of which gets under the features of a definite CC act. However continued crime not as repetition is characterized by the deep internal connection, lack of considerable periods between the episodes connected together by a criminal idea of a delinquent if it has the same guilt form, motive and single goal (the presence of one and the same form of guilt, the same motif and a common goal).

Conclusion. Thus, the definition of indications of repetitive and continued crimes and installing similarities and difficulties between them has a very important practical meaning, because it allows to avoid groundless use of kinds and sizes of a punishment.

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CONSTITUTIONAL REGULATION OF WOMEN'S RIGHTS IN THE EUROPEAN COUNTRIES

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The issue of women's rights and their protection has always been a subject of discussion in all states regardless of the form of government. Globalization of the women's rights enforcement and protection issue is common for all states of the world within modern conditions. More than half of these countries' population is women. Over the last decade there has appeared a disturbing pattern within the status of women. It includes the following trends: "unemployment feminization", "poverty feminization", slump of women in elective bodies and at the level of decision making. The major part of marginalized, poor, sick people and those who gave up all hope are women. Meanwhile, a focus on the international legal standards may and has to become an important prerequisite for improvement of national legislation and regulatory enforcement in the sphere of women's rights protection.

Timeliness of the topic lies in the fact that the women's right protection issue is one of the most important for all European countries where radical changes in the economic, political and social spheres are currently undergoing. The aim of this work is to study the peculiarities of women's legal status regulation at the constitutional level in European countries.

Material and methods. Constitutional legislation of some European countries (Germany, Poland, France, India etc.) has been taken as the material for our study. The main method of study was the method of comparative legal analysis.

Results and their discussion. Analyzing the content of the Constitutions of some countries it should be pointed at the degree of women's rights protection within them.

Rights of women are described at the constitutional level in the Federal Republic of German, Greece, Italy, Portugal, the Kingdom of the Netherlands, the Duchy of Luxemburg, Sweden, and Finland in detail. As a rule, the gender equality principle is captured in many constitutions. For example, the article 3 of the Constitution of the Federative Republic of German stipulates the following: "Men and women are equal. The state makes a contribution to actual exercising of men and women's equality and takes measures to eliminate existing deficiencies" [1, p.114].

The same provision is included in the Constitution of Greece: "Men and women of Greece have the equal rights and duties" (article 4). One of the main duties of the Portuguese state is to maintain men and women's equality (article 9 of the Constitution of Portugal).

The Constitution of the Russian Federation is similar to the Constitution of the Republic of Belarus in many ways. It provides that the state guarantees its citizens the absence of any discrimination including gender discrimination. Men and women have equal rights and equal opportunities for their exercising (article 18).

On the basis of the analysis of the Constitutions mentioned above it may be concluded that the main provision of those Constitutions primarily recognize the equality of men and women in all spheres.

Analyzing the content of the Constitution of Poland it may be concluded that it describes the main rights of women in detail. Article 33 recognizes the provision that a man and a woman who are citizens of the Republic of Poland have equal rights in family, political, social and economic spheres. In particular, a man and a woman have an equal right of education, the right to employment and promotion at work, the right to equal payment for equal work, the right to social security, and the right to take office, to exercise employment functions, and the right to receive public honors. The public authority's duty to maintain the special pregnant women's health program is recognized at the constitutional level. This is a peculiarity of the regulation of the legal status of women in Poland.

The Constitution of India recognizes a rather interesting provision towards women at the constitutional level. It says the following: "….rejection of the practice of violation of women's dignity" (part IV of the article 51A).

There are various titles and ranks in many countries. But women hold such titles not in every country. The British constitutional Act of 1963 on peers recognizes the title of peeress in one's own right. A woman who holds the peer title in the peerages of England, Scotland, the Great Britain or the United Kingdom has the right to receive a writ of summons, to take part in a meeting and vote in the gilded Chamber; she falls within the same restrictions on the membership of the lower Chamber and in the election to this Chamber on equal terms with men possessing peerage. The above mentioned rights are exercised independent of the form which this peer title is mentioned in a patent of nobility in [1, p.28].

Before the XIX century the women's right to vote had been local and, as a rule, had several additional restrictions (property qualification, position in the family, position in the society etc.). Then there was a period of increased activity of the movement for the women's electoral right. It led to its recognition in international law in the middle of the XX century.

Nowadays the women's electoral right is recognized by the majority of the world countries. The first countries which recognized the women's electoral right were the following: New Zealand (1893) and Australia (1902). The latest countries were Kuwait (2005), the United Arab Emirates (2006) and Saudi Arabia (2011).

Before 1971 Switzerland had been one of few countries where women didn't have the electoral right at the nationwide level. In February, 1971 the male electorate approved an amendment to the Constitution to grant women the right to vote and be elected in the federal elections. Currently, there are several articles in the Swiss Constitution dedicated to the electoral right of men and women (articles 145,150,157,168, and 176).

In 2004 the Constitution of France was extended with Article 3 which recognizes women's participation in the political life. According to the conditions determined by the Law, electors are all men and women who are French citizens of the full legal age and who exercise civil and political rights [1, p.53].

However, there is still nothing mentioned about women's rights in some European countries' Constitutions. The examples are the Constitutions of Denmark, the USA and Japan.

Conclusion. Thus, recently the rights of women have been recognized at the constitutional level. Nevertheless, the constitutional protection of women's rights is not at the proper level in many European countries. However, the constitutional regulation of their rights is the basis of gender equality. In every region of the world there are still discriminatory laws against women. Even in countries where law protects the rights of women there is a difference between the provisions given in the Law and the ones which are legally exercised.

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THE LEGAL ILLITERACY OF YOUNG PEOPLE AND WAYS FOR IT OVERCOMING

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Nowadays, the expansion of the citizens autonomy through the institutions of local government, legal and administrative spheres led to the actualization of the problem of political literacy in the Belarusian society , and legal literacy can be called a mainstay of political culture [4, p. 137–138].

Currently particularly acute problem of political inertia, lack of initiative of citizens. The right to act not only as a regulator of human behavior, but also is a conductor in the political socialization involves citizens in social and political activities. Of course, we can not forget about the potential preventive law. It is to prevent possible violations as a result of awareness of the beneficial effects of the legality of individuals [2, p. 86] and the development of an inner need to comply with the law [5, p. 146].

The problem of the right illiteracy have today not only ordinary citizens, but also representatives of power structures to violations of the law (deliberate and inadvertent) and infringement of the rights, generates mistrust to the government[1, p. 17]. At the same time there is a direct link between the deformation of justices sense [4, p.137] including category of legal nihilism [6, p.159], and legal illiteracy. A result of these processes is destabilization of life of society.

Therefore, the knowledge of legal mechanisms and ability to apply them is the most important direction in development of youth.

The purpose of this work is a detection of characteristics of the concept "political ignorance" and searching ways of the political illiteracy's elimination among youth.

Material and methods. The information base for the study were the materials of scientific conferences and scientific articles, monographs.

We used the methods of analysis, induction, deduction, empirical interpretation, system analysis.

Results and discussion. The main danger of legal illiteracy is that it does the person defenseless before circumstances, deprives of opportunity fully to analyze and estimate own actions, doesn't give the chance to assert the rights in case of violation them from other persons, institutes and organizations.

The category of legal illiteracy includes:

– no knowledge of laws and mechanisms from functioning;

– disability to apply the available knowledge in everyday life: both in realization of the rights, and in protection of the rights of other citizens;

– social and legal passivity: absence of belief in strict observance of laws and their periodic violation as purposely and on ignorance [3, p. 17–18].

During the research a problem of legal illiteracy were revealed. Among them, it is necessary to call an excessive theorization while training in legal disciplines. I.e., knowledge of part of concepts, terms are given to the general theory, and due to attention often isn't paid to their practical application. In this regard, it is necessary to mention that legal problems, which the person faces daily, are often excluded from a field of vision of the theory of the right. It is also a lack of legal activity of the population when citizens do not seek to assert their rights, because of mistrust to the power. It is necessary to notice a problem of citizen's knowledge of innovations in the legislation: information dosage when in mass media only the short mention of change is given, but isn't made an explanation of consequences of these reforms for the citizen. It is necessary to mention as an important aspect and on the difficult structural branching of the legislation representing complexity for simple inhabitants.

Studying of problems in the sphere of legal illiteracy allowed to allocate the directions on its prevention.

1) First of all it is necessary to raise authority of the government, trust to the power from the population. In addition, for this purpose observance of the rules and norms established by laws as is necessary from the population, and the power.

2) Need of availability and clearness of the laws infringing on interests of citizens for the purpose of realization and protection of the rights by them follows.

3) Simplification of structure of the legislation.

4) Activity of the public organizations similar to the organizations in the USA and Europe is important. They are financed on public funds and are engaged in an explanation to the population of their rights and duties by means of new techniques.

5) Direct training in practical application of precepts of law and laws: drawing up documents of legal character, business games, presentation – reduction of concrete examples of execution of responsibility for an offense, necessary laws for protection of the rights.

Consequently, the main directions of development of the Belarusian youth legal literacy should become legal education, which should begin at an early age, modernization and humanization of education using new educational methods, its practical orientation and the creation of conditions for the development of civil and legal activity.

The study results were as follows: on the basis of analysis of the existing problems in this area were identified ways of preventing and overcoming legal illiteracy among youth through continuous and lifelong learning both in school and in subsequent stages of education and in the future professional activities. Particular attention should be paid to the policy in the field of education, focused on the formation of attitudes of respect for the law and the need for compliance from citizens. The most important area of prevention legal literacy should become free consultations, thematic information available resources to help you understand how to use the laws.

I should say that only in the case of complex application of the above routes may reduce legal illiteracy and improving the legal culture of the population.

Conclusion. Thus, in conclusion it is worth noting that the actual condition of the formation of the legal opinion is to create opportunities by using primary and secondary agents of socialization, namely, family, school, college, state, which should consciously participate in political activities.

The legal education has to begin with early age. The school and other types of educational institutions have to become propagandists of participation for youth in public life, form at trained feeling of civic consciousness, requirement to take an independent stand and ability to express it, and also to learn cares not only of own wellbeing, but also of prosperity of the state.

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THE PROBLEM OF PREVENTION OF CRIMES COMMITTED BY WOMEN

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The problem of female crime and its prevention has been always paid great attention to, and it is not accidental. Female crime has the most negative impact on society, affecting a wide range of phenomena of social life: proper functioning of the family as the unit of society is violated and sometimes even ends; significant damage is brought to the children, and a real impact of educational functions is almost negative. The moral climate in the family where a woman leads a criminal lifestyle is much more dangerous in comparison with families where a father is a criminal; a post-penitentiary social adaptation of women sentenced to deprivation of liberty and their inclusion in the sphere of family life and in labor activity is significantly more difficult when compared to males. The aim of this work is to study the problem of female crime and measures for its prevention.

Material and methods. In the work were used scientific articles by scholars such as Sinkov, Stepanyan and the collection of statistically.

The study used the following methods:

1. The methods of analysis;
2. Statistical method;
3. The comparative method

14.8 per cent of total number of crimes registered in 2013 in the Republic of Belarus were committed by women. This indicator is stable in recent years and it should be noted that Belarus has the "leading" position among the CIS countries.

Measures for the prevention of crime can be divided into two groups:

- social;
- specifically criminological

This division is rather conditional. On the basis of this classification different measures for the prevention of crime are used depending on the level (general or specifically criminological).

Results and discussion. General measures include legal, economic, and social measures. These measures affect the most difficult aspects of society. The reasons leading to crimes lie primarily in the economic, juridical and social environment. These reasons operate as a system and contribute to the emergence of criminogenic motivation.

One of the major contradictions giving rise to the wrongful conduct of women is the clear imbalance between the needs of women of active participation in the labour, professional activity and a sharp exclusion of women from the labour market [2, p.28]. A special issue is security and organization of work at factories. Women who work at factories are getting coarse and becoming more aggressive.

A woman has appeared in a more difficult position in the new conditions of social and economic life because she has been working in those areas, which have been regarded as feminine (health, education etc.) for a long time. The severity of the situation of women employed in these sectors can be explained by the fact that these jobs have low wages [3, p.27].

There is a significant difference in wages of men and women in Belarus. The average salary of women in 2013 comprised only 74.5 per cent of men's salaries [4]. It is important to note that this rate was 76.6 per cent in 2010. It can be assumed that the economic crisis had a significant impact on the wages of women.

The difference in salaries is largely due to the fact that women are still mainly concentrated in such areas as health, education, culture, where the level of wages is significantly lower in comparison with the manufacturing sector, which is mostly for men nowadays. Almost all the areas employing mostly women have a lower average salary. In addition, there is a difference in the level of men’s and women’s wages in the same area.

In our opinion, in connection with the aim of improving the position of women and crime prevention, it is necessary to increase the level of wages among occupations that are traditionally considered to be feminine and to increase the level of social protection.

Also, unemployment has a big influence on crime among women.

We want to figure out why unemployment is predominantly female problem on the background of proclaimed equality.

The answer to this question is that a crucial role depends on the position of the employer. The preference of almost all categories of employees is given to men. This is probably most obvious when hiring senior managers [2, P.28]. The biggest problem is the organization and safety at the workplace. When a woman works in a factory, she becomes a rough and more harsh and aggressive.

In the new environment socio-economic life women is even more severe conditions, because she worked and works in industries with little pay (healthcare, education). These sectors are traditionally considered female [3, P.27].

In the Republic of Belarus is significant discrepancy in pay between men and women. In 2013the average pay for women was 74,5% from the pay of men[4]. The difference in pay is due to the fact that women work in health, education, where the wage level is significantly lower than at the factory, which employs more men. In order to improve the social situation of women and to reduce the level of crime need to increase wages in occupations that are traditionally considered female and increase the level of social protection.

Such indicator as unemployment also influences female rime. We need to understand, why unemployment rate are mainly the problem of women. In answering this question we can say that the important part is played by the position of the employer. Preference in hiring is given to men. The exception is the work of semi-skilled. This is probably most obvious when hiring managers [2, P.28].

Women accounted for 51.0% of the economically active population. Women are for 51.0% of the economically active population, however, they dominate in the structure of the various indicators of unemployment: they are generally more registered in labor agencies, employment and social protection (however, in 2012-2013 men's and women's performance almost equal); they dominate in many age groups of registered unemployed; longer looking for a job with a higher level of education. Are among the unemployed by reasons for dismissal were more likely to be women in connection with the liquidation of companies reducing or graduate schools.

An important role in the prevention of crime, including crimes committed by women is family. лучше так Family plays. It is necessary to attach great importance to the family, where conflicts occur. Republic of Kazakhstan has crisis centers. Their work gives significant results. The Republic of Belarus should take into account the experience of the Republic of Kazakhstan and to create such conflict centers. Numerous studies suggest that for reducing the most dangerous types of crime that can be attributed female crime, it is advisable to impact not only on the processes of criminalization of the offender. Significant effects have measures on the factors contributing to the victimization of potential victims [1, p.26].

Two areas should be divided in victimological prevention:

1. The object which is victimological situation;
2. The object which are potential and actual victims of violence.

Conclusion. So, in the prevention of crime among women is necessary to implement a comprehensive approach. It should take into account socio-economic conditions of women, the situation within the family, psychological and physical. There is a need a need to establish a methodology for the study of personality women criminals and to develop personalized prevention activities that will reduce the number of crimes committed by women, to improve the effectiveness of law enforcement agencies in the prevention of female crime.

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MASS MEDIA AS MAIN CHANNEL OF SOCIALIZATION OF MODERN BELARUSIAN YOUTH

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Media as the main channel of socialization of modern Belarusian Youth in the modern world, national, regional and local processes of political socialization takes a special place such as youth demographic group. The Political socialization of young people is a necessary assurance in the vector of Belarusian society. Political socialization of young people - this is the way to civic consciousness and culture, which forms are an important basis intra - and inter-state relations.

The aim and purpose of socialization is the formation of a young men living and acting as a member of this particular community, carrying his signs and having his experience.

Political socialization is the result and at the same time a factor of political sovereignty and civic self-identity.

Results and discussion. It is advisable to allocate political channels such as socialization, institutions, parties and movements, as well as non-political, family, peer groups, schools, work, culture, science, art, national traditions, the media. In real life, political and nonpolitical channels intertwined, have complex, multifaceted and multifactorial effects on humans.

Today, the process of political socialization in the world in general and in the Republic of Belarus in particular is largely determined by the influence of one of the most important channels socilazation- media. Responsiveness and dynamism give the media the opportunity to become a powerful means of effective influence on the minds of young people. Giving the audience properly any socio-political information, the media form a certain image of the world. They can contribute to the excitation of public opinion in support of the specific goals of a policy may perform the functions of integration, urging young people graciously accept and assimilate the dominant socio - political values.

In Belarus today operate and develop print and electronic media. On January 1, 2014 in Belarus were published 712 papers and 793 magazine. The most influential and popular newspapers are "SB.Belarus today" and "Respublika". Belarus extends more than 4 thousand foreign print media, including from Russia, USA, UK, Germany, Italy, France, the Netherlands, which promotes the formation of the youth sided view of the world, given the experience of foreign countries.

The legal basis for the activities of the media in Belarus is the Constitution and the law "On mass media". The Constitution guarantees freedom of opinion and expression, prohibits monopolization of the media and censorship.

The law "On mass media" enshrines the basic principles of the media in Belarus: the accuracy of the information, equality, respect for human rights and freedoms, pluralism, the protection of morals.

The main youth political organization of the country is the Youth Union. The number of members of this organization is about 500 thousand, people aged 14 to 31 years. The purpose of "Belarusian Republican Youth Union" is the creation of conditions for the full development of youth, the disclosure of its potential to promote Belarus civil society based on patriotic and spiritual and moral values.

Leading activities BRYU are patriotic education of youth. The main task - to provide young people with the love of Belarus, the formation of her desire to contribute to its sustainable prosperity. Belarusian Republican Youth Union has been very active in youth leisure, it directed various projects and programs of our youth union: meetings, seminars, quizzes, promotions, marathons, Saturdays, contests and others. BRYU has its own media: newspaper "The Banner of Youth" newspaper "Dawn" newspaper "awkward age" radio "Pilot FM», which occurs through the socialization of young people.

At the present stage of the media have become simple means of searching, processing and transmitting information means controlling and transforming the inner, spiritual world of the young. [1, p.18] Exposure to media supplemented influence of family, school, church, community, and other institutions. But we can not ignore the fact that these institutions themselves also are affected by the media.

Media can serve different political purposes. On the one hand, they contribute to the spread of political information, and thereby increase the awareness of young people, to educate them and to develop in them a sense of self-esteem, desire for freedom and social justice. But on the other hand, the media are able to impose their views, manipulate the consciousness, spiritually enslave and mislead.

The main thing for the media in modern terms - not to impose a one-dimensional view of the world and organize meaningful dialogue and public authorities, serve as an indicator of political attitudes in society, build public and political opinion, prevent the spread of destructive ideas [2, p. 109].

To solve such a large-scale tasks required to ensure the effective management of all kinds of information resources, information infrastructure elements; organize public support for domestic production of information, the information technology market, funds, products and services; regulate the activities of public electronic and print media.

The importance of the media as a channel of socialization shows the following statistics: In Belarus, the information from the television on politics gets 67.0% of the Belarusian audience on the economy - 59.8%, and on the cultural life of - 61.3% [3].

You can not ignore the role of Internet resources. Internet in recent years performs increasingly the same function as traditional media. Specificity of the Internet as a form of media is that it is more than other types of media, interactivity, and provides an opportunity for multilateral communication. On the prospects of online media as a source of information in Belarus shows that the majority of Internet users, as well as those who intend to connect to it, view the Internet primarily as a source of information.

Thus, political socialization is a high stage of social maturity of the individual, is the realization and implementation of basic social and psychological qualities and personality traits in the political culture, that is, in the political consciousness, political opinion, political behavior, political participation.

Particular political socialization content has applied to the youth as the most emotionally unstable socio-demographic groups, which reflects the totality of the relations existing in society, and is a carrier of a particular political culture.

Conclusion. Media serve different political aims: educating young people, the development of the sense of self-esteem, desire for freedom and social justice.

The role of the Belarusian media as a channel of socialization should be to contribute to the growth and development of the consciousness of young people through a comprehensive orientation to reality.

Thus, political socialization - is a complex, multi-stage and multi-faceted process of initiation to political life, determining their place in the relationship with the society and the state.

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HISTORICAL STAGES OF DEVELOPMENT OF THE BUDGET OF BELARUS

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Relevance of a subject of research is caused by that in modern legal and economic literature there is a considerable material about history of the budget of Belarus, its formation and development. These data demand generalization and structurization. Studying of material allows to see that development of the budget doesn't stand still, and changes and develops throughout centuries, and doesn't stop still.

In this regard, the purpose of this article consists in carrying out the analysis of historical stages of development of the budget of Belarus. It is necessary to solve a number of the following problems:

- to define the main stages of development of the budget of Belarus;

- to allocate the main processes which played the most significant role at each historical stage;
- to give uniform definition of the term "budget" which would correspond for the present stage.

Material and methods. For writing of article educational editions and scientific publications on the studied subject were studied. Regulatory legal base of this work is the Budgetary code of Republic of Belarus.

Results and discussion. The scientific methodology of research was based on the general and private methods, including a system and legal, historical and legal method, the analysis of regulations, classification, the system analysis of the studied phenomena was carried out. Now scientists allocate five main stages of development of the budget of Belarus. Thus each stage corresponds to the separate period of development of the state.

1 stage – from IX century until the end of the XII century – in volosts principalities of Polotsk Russia occurs origin of the budget and its development proceeds as a part of the Old Russian state. During this stage the foundation of the budgetary device, system of state revenues, the organizations of their collecting are laid. Budgetary the device defined the organization of the state budget and the budgetary system of the country, relationship between its separate elements [5, with. 61].

2 stage – from XIII century until the end of the XVIII century – development of the state budget in the Belarusian-Lithuanian state – Grand Duchy of Lithuania, the Polish-Lithuanian Commonwealth is displayed and comes to an end with reunion of the Belarusian lands with Russia.

The budgetary system continues to be formed, there is a strengthening of budgets of the cities. Transition to the tax state is carried out. The income of the state treasury increases due to development of the indirect taxation. The indirect taxation – a type of the taxation, when the payer of a tax and the person which really underwent the taxation – different persons. With development of the commodity-money relations more and more payments arrives in a monetary form, there is a transformation of the budget in financial category. The mechanism of collecting state revenues and control of their receipt [2 is developed, with. 11].

3 stage – since the end of the XV century on 1919 is connected with formation of budgets of the Belarusian provinces as a part of Russia and comes to an end with formation of the Belarusian Soviet Socialist Republic. At this stage in Russia the multilevel budgetary system is formed: local budgets – territorial, city, mirsky are formed. In them for the first time there are expenses on economic actions of territories and social needs of the population. The tax system becomes stronger, excises were widely adopted. An excise – the indirect nation-wide tax established mainly on subjects of mass consumption within the country. Budgets of the Belarusian provinces participate in formation of the all-imperial income [3, with. 15].

4 stage – from 1919 to 1990 – covers the period of development of the budget of BSSR generally as a part of the USSR. At this stage: a number of actions for reorganization of the financial relations on the basis of reorganization of an economic mechanism, transformation of forms and methods of the management of economy. The structure and structure of the income and expenses of the budget of BSSR changed, the profitable base of local budgets becomes stronger. The budgetary system of Belarus is formed as the part of uniform budgetary system of the powerful state capable to independent functioning [4, with. 61–70].

5 stage – since 1991 to the present – characterizes development of the budget and formation national the budgetary system of Republic of Belarus in the conditions of the sovereignty and market transformations. The budgetary device in Republic of Belarus began to be based on the principles of unity of the budgetary system, completeness, reality, publicity and independence of all budgets entering into the budgetary system of Republic of Belarus and is defined by administrative-territorial division of Republic of Belarus [5, with. 70].

To give modern definition to the term "budget", it is worth addressing to the Budgetary code of Republic of Belarus: the budget – the plan of formation and use of money for ensuring realization of tasks and functions of the state [1].

Thus, there are five main stages of formation of the budget in Republic of Belarus which correspond to stages of development of the state during which the budget changed and developed.

Conclusion. In this work research as a result of which stages of development and formation of the budget and the budgetary system in the territory of Belarus were studied was made, the modern concept of the category "budget" was given.

We tracked development of the budget of Belarus starting with IX and finishing with the present stage. Origin of the budget happened in volosts principalities of Polotsk Russia when there was an origin of bases of the budgetary device, systems of state revenues, the organizations of their collecting. At the second stage there was a development of the state budget in the Belarusian-Lithuanian state. The third stage since the end of the XV century on 1919 is connected with formation of budgets of the Belarusian provinces as a part of Russia and comes to an end with formation of the Belarusian Soviet Socialist Republic. The fourth stage from 1919 to 1990 – covers the period of development of the budget of BSSR generally as a part of the USSR. And the last, fifth stage since 1991 to the present. It is remarkable development of the budget and formation national the budgetary system of Republic of Belarus.

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EFFICIENCY AND PROBLEMS OF DEVELOPMENT OF LEGAL INFORMATION IN THE REPUBLIC OF BELARUS

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Wide application of information technologies in all spheres of human activity significantly influences world development, creates important prerequisites for large economic and social changes, leads to the formation of the advanced society. At any stage of informatization, the processes of legal informing of citizens are very important. They are the priority factor of dynamic development of civilized state.

The object of research is theoretical and practical aspects of legal information in the Republic of Belarus.

The subject of research is the efficiency of measures taken in the sphere of legal informing and prospects of development of information technologies in legal sphere.

The aim of research is to show the efficiency of achieved results of legal informatization and determine possible ways of its improvement.

Material and methods. Article 34 of the Constitution of the Republic of Belarus guarantees the right for obtaining, keeping and distribution of full, adequate and timely information about the activity of state organs, public associations, about political, economic, cultural and international life and the condition of the environment.

To make legal information accessible for all concerned, the state and society constantly improve a certain mechanism. The end of the 20th century provided the facilities of informatization for this purpose, in particular those of legal information. Information-legal policy of the state should be consequently aimed at the creation of conditions for efficient and qualitative provision of legal information for those concerned at very different levels – from state organs to each citizen.

Results and discussion. For the first time in the Republic of Belarus, scientific-practical problem “Legal informatization” was marked in the Conception of judicial and legal reform in 1992 [1].

In the sphere of norm-making activity of state organs, the National centre of legal information of the Republic of Belarus, in accordance with the Decree of the President of the Republic of Belarus of July 24, 1998 № 376 “About the creation of computer database of bills of the Republic of Belarus" [2], developed and introduced into the activity of norm-making state organs the computer database of bills. This database was created to inform subjects of legislative initiative (and other concerned) about law-making activity and its improvement. The computer database of bills is an automated system of centralized accounting and accumulation of information about law-making activity in the Republic of Belarus and informing subjects of legislative initiative and other concerned about it.

Besides, on the basis of results of research, conducted by the National centre of legal information of the Republic of Belarus in the sphere of informatization of norm-making activity and preparation of projects of normative legal acts, the National centre of law-making activity under the President of the Republic of Belarus developed and distributed among state organs the computer programme "Automated system of preparation of projects of normative acts of the Republic of Belarus".

To develop this automated information-telecommunication system, the National centre of legal information of the Republic of Belarus created in 2003 and introduced into the activity of the Constitutional Court, the Ministry of Justice and systems of general and commercial courts the integrated database of legal information "Jurisprudence", which can provide the stated organs with relevant and reliable information about the law enforcement practice of the judiciary in the Republic of Belarus.

As a result of the work, conducted by the National centre of legal information of the Republic of Belarus, in the Republic of Belarus there has been created and developed an efficient model – the state system of legal information, which at present consists of the following components:

1. The National centre of legal information of the Republic of Belarus – the central state scientific-practical establishment in the sphere of computer accumulation, keeping, systematization and provision for use of reference legal information and creation of inter-state system of legal information exchange.

2. Automated system of formation of state information normative-legal resource, created by the National centre of legal information, which includes: the National register of legal acts of the Republic of Belarus as a single universal system of accounting, registration, processing and official publication of legal acts; reference database of legal information, which is in fact a set of laws of the Republic of Belarus in electronic form and other databases of legal information; Single legal classifier of the Republic of Belarus.

3. Complex system of distribution of legal information, consisting of: the National centre of legal information of the Republic of Belarus; the National legal Internet-portal of the Republic of Belarus; a single automated information-telecommunication system of legal information of the judiciary; regional centres of legal information (branches of the National centre of legal information of the Republic of Belarus); public centres of legal information; other organizations, distributing legal information in electronic form.

The system of distribution of legal information includes distribution of legal information in electronic and paper form with the use of different organizational and information-technological forms of distribution and guarantees provision to all state organs, including courts, prosecuting authorities, local authorities and all legal and natural persons of official, full and reliable legal information both with the use of printed publications and in electronic form, including the Internet.

4. The systems of inter-state exchange of legal information, including exchange of legal information within the framework of bilateral treaties, inter-government treaties and the creation of inter-state automated system of exchange of legal information.

Conclusion. The article analyzes the current processes of functioning and development of the system of legal informatization in the Republic of Belarus. Despite quite high level of development of information technologies in the sphere of legal information, its full introduction is still far ahead.

At this moment the National centre of legal information of the Republic of Belarus is the element which determines the policy of the state in the examined sphere of research. It is the central state scientific-practical establishment in the field of computer accumulation, keeping, systematization and provision for use of reference legal information, and creation of inter-state system of exchange of legal information.

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STATE PROPERTY AT THE NATIONAL ECONOMY OF BELARUS

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The material base of independent participation of public-law entities in the state regulation of national economy founds on the property belonging to them by right of ownership. At the same time the Constitution of the Republic of Belarus establishes state and private forms of property. The purpose of this article: to characterize the specificity and the role of state property at the national economy of Belarus as well as the legal relations concerning state ownership.

Material and methods. During the preparation of this article author was using materials of research of experts in the fields of economics and law and legislative base (the Constitution, the civil code, the law «About order on disposing of state property», Resolution of the Council of Ministers «About the Treasure of the Republic of Belarus» etc.). Our work is founded on general scientific methods (analysis, hypothesis) and special methods of law (the method of interpretation the norms of the law, formal-legal method).

Results and discussion. There is an opinion that the preservation of public property a significant number of industrial, social, cultural and other objects is mainly due to two factors. Firstly, the state should ensure its security in military, economic, energy, food-stuffs and other spheres. Secondly, the state performs a wide range of social functions designed to ensure an adequate standard of living and support the authorities of the electorate for which it is necessary to possess the relevant material, technical and financial base [1, p. 465].

Economists affirm that contradictions between public and private property remain unresolved. Thus, when entity of private ownership enters into civil turnover, they often have the risk that state enterprise or other legal entity with state ownership may have certain preferences from the authorities. For example, preferences in part of a more simplified access to financial resources, government contracts and orders. That is on the market appear participants, which competitive advantage is provided by the state participation in the capital of the last. This fact is partly provokes a private business to establish informal relations with representatives of the authorities, which subsequently contributes to the development of corruption. Besides that the increasing administrative pressure on private business may lead to the strengthening of monopoly and, therefore, to the shifting additional costs, imposed by the state, on ordinary consumers [2, p. 8].

The circumstance that the state property had retained its leading position in Belarus by the present moment is characterized by a number of reasons. Firstly, the state property has the highest degree of socialization. Secondly, the wealth belongs to all the people in the person of the state, which manages this property as a single owner. Thirdly, the state property has the dominant impact on other types and forms of property, for example, it determines the development of private property and contributes to the development of cooperation [3, p. 346 – 347]. The ownership structure in our country is reflected in a civil code of the Republic of Belarus, which specifies that the state property is divided on republican and municipal property.

The state is the owner of its property, but does not have consciousness and will, which need to participate in civil turnover without the help of various state officials both endowed with rights of legal entity and not possessing it.

Article 107 of the Constitution specifies that the Council of Ministers of the Republic of Belarus acts on behalf of the owner of republican property. The Government also organizes the management of state property.

A special place among the entities of the state ownership belongs to the system of the Treasury [4, point 2]. It is not an independent entity of the civil turnover, but performs in civil and public law actions on behalf of monocomplex of state estate. The Ministry of Finance is a fiduciary representative of the rights and duties of the state as the treasury [5, p. 564]. Other state entities and organizations are also endowed certain competence of owner, as well as enterprises and organizations, which possesses the state estate, and republican state-public associations.

The range of objects of the republican ownership is determined by economic and political objectives of the state. It includes both a circulating and withdrawn from circulation property, which cannot be owned not only by private individuals or legal persons, but also by administrative-territorial units. Republican property is presented by the treasury of the Republic of Belarus and the property, which is being possessed by legal entities by right of economic management or operational management.

The treasury of the Republic of Belarus consists of funds of the republican budget, gold currency reserves, other objects that can be only in the property of the state and other state estate, isn't attached to the republican legal entities. There are also the objects of the right of exclusive property of the state and other objects, able to be placed only in state property. The first, namely, entrails, water and forests are established by the constitutional norm. The second list is defined by corresponding law and contains 40 species of such objects.

In its turn, the grounds for the emergence of republican property can be general and specific. The first example is represented by the expanded reproduction of the state unitary enterprises and property acquired under civil law contracts. There is also the treasure. The acquisition ownership by the state often grounds on termination of property rights of other subjects of civil relations. The state is subject of ownership on requisited, confiscated, or nationalized property. In accordance with article 239 of the civil code the Republic of Belarus may also become by a court decision the owner of the property, which can't belong by law to the person from whom it was. Under certain conditions, the property transferred under an invalid transaction may go the state. The state may also be subject of inheritance law. If the property was left to the state as such, the heir will be the Republic of Belarus, i.e. it goes to the republican property.

The second example: specific grounds for the emergence of republican ownership are represented by levying of republican taxes, fees and duties.

Conclusion. Thus, the state retains its leading role in the modern society, preserving a substantial part of the property behind itself, including proclaiming exclusive ownership on objects of the property law, which possess the highest social value. At the same time, the interests of private owners and the state are often remain unsettled, and, therefore, inconsistent, which requires further improvement of normative legal base. It is also necessary to focus efforts on avoiding unnecessary confusion in the implementation of the state ownership, which is associated with a diversity of entities, expressing the interests of the Republic of Belarus. And in conclusion, Belarus needs a more detailed legal regulation of such grounds for entitlement state to property, as nationalization and requisition.

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ANTIQUE PORCELAIN ATTRIBUTION PROBLEMS

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Porcelain is an expensive and prestigious material. About fifty porcelain wares worthy a showcase of the Hermitage pass through the antique market for a year. And about two hundred antiques of the decent private collection level. But modern antique market includes ocean of fakes, many of which can be only revealed by experienced expert commissions. The whole underground industry specializes in manufacturing of antique fakes. A fake can be met both at the famous Sotheby's auction and even in a tiny antique shop, buying inexpensive porcelain. Modern fakes often exceed current experts' evaluation level. Therefore 100 per cent warranty of genuineness of any objects of art can not be provided.

Objective: to analyze basic problems of attribution of porcelain on the antique market

Material and methods. Sometimes even an expert, a porcelain collector of a great experience can not confirm for sure, whether it is an original or a fake. Only serious and deep analysis can help to differ genuine item from a fake. One of the key issues is correspondence of the painting quality to the standard of the certain century. Porcelain painting different from a conventional style of the certain century shall put on the alert. Sometimes it can be seen that a painting has been performed by a person more got used to a canvas and a brush, than to a fine porcelain "dotted lines".

Composition and style of a piece of work can be examined applying a technical analysis method, as well as a combination of paints and porcelain mixture can be confirmed. It is known, that porcelain mixtures of different periods and different ceramic factories differ on a chemical composition. This is precisely why items are often attributed judging "on mixture". Indeed, it differs both on surface, and on "texture", and on colour, and on weight. In many cases, genuine porcelain can be differed from the false one judging from the rate of its warming up in a hand. Genuine porcelain remains cold for a longer time period. X-ray radiography helps to reveal concealed details, an ultraviolet lamp is indispensable for porcelain attribution. An ultraviolet lamp helps to determine restoration alterations. Microcracks and mud impurities on the ancient porcelain are inevitable. Macrophotography helps examine the nature of the cracks deeper, examine a brush work of the artist, a style of the period.

Results and discussion. China of Imperial Porcelain Plant is the most popular for fabrication of fakes of antique porcelain. Imperial porcelain is the oldest Russian porcelain. The plant was found in 1744 [1, p.66]. But nowadays antique salons have three times as much imperial porcelain, than the plant manufactured in the XVIII century. Modern technology provides a means of faking not only brands, but also "centenary" cracks on china in backyard conditions. Printing can be performed on vases in such a way, that even expert can not differ it visually from a manual engraving.

Nowadays, fakes of Gardner's figures of the end of XIX century are available on the antique market in great numbers. These fakes are very well technologically performed, porcelain mixture is very good and colours are pertinent, brand is the same as Gardner's one of the end of the previous century. However, these items painted not so neatly, comparing to original items, and they have more weight than original items.

Suprematic porcelain is faked in a great scale [2] (it was manufactured at State Porcelain Plant named after M.V. Lomonosov using models of Malevich and his disciples-supremacists in the middle of twenties). This porcelain, as a rule, does not impress by technological state of the art (supplies of pre-revolutionary linen used for agitational porcelain manufacture have depleted in 1925). Suprematic porcelain mixture is of low quality and can be faked very easily. Moreover, it has simple geometric painting.

Saxon Meissen porcelain [3], famous Hungarian Herend porcelain of exquisite manual painting are often faked or copied.

Conclusion. As a result, after study and analyze of the market we can say that the antique porcelain attribution problem is an important one. Fraudsters can fake not only brands, but also "centenary" cracks, thanks to modern equipment and technologies. The most popular fakes are "pieces of work" of the Imperial Plant and Saxon Meissen porcelain. Herewith, major criminals on the antique market are not fakers, but those who directly sells works of art – antiquaries, auctioneers and antique dealers. That is they who generate 80% of ideas of making fakes, and that is they who make profit in this business.

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CIVIL RESPONSIBILITY FOR VIOLATION OF OBLIGATIONS FOR DELIVERY AND QUALITIES OF MATERIAL VALUES IN THE STATE AND (OR) MOBILIZATION MATERIAL RESERVES AND TO OPERATIONS WITH THEM

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Quality and delivery of production, works and services is one of the major factors of successful activity of any organisation. Now the requirements shown by the consumer to quality of production, works, services all over the world have considerably amplified. Toughening of requirements is accompanied by the necessity of constant improvement of quality realised by all without what achievement and maintenance of effective economic activities is impossible. The purpose of the given work: on the basis of the analysis of the legislation of Byelorussia to investigate problems to a theme «Civil-law liability of infringement of obligations on delivery and qualities of material assets in state and (or) mobilisation material reserves and to operations with them» and features of their application to the offender, to offer ways of their decision.

Material and methods. Now the concrete law on responsibility for infringements in the field of quality of production, works, services, in Byelorussia does not exist and for this point in question studying it is necessary to analyze a number standard - legal documents. Quality of production, works, services the major indicator of a level of development of the country of its economic stability. As this sphere is very important in economic правоотношениях it is necessary to toughen measures on prevention in it of negative displays and is more accurate and correctly to organise legislation system in the field. At problem research works of following authors were used: Mankovich, И.А., Galtsov, Century C, Radoman, A.B., Katsubo, the joint venture., Masur, Island A, etc.

Results and discussion. For default or inadequate execution of obligations under contracts on which basis delivery of material assets in state and (or) mobilisation material reserves is carried out, to contracts on operations with material assets of the state and mobilisation material reserves of the party bear responsibility according to the present Law, other certificates of the legislation of Byelorussia, and also with the specified contracts.

In case of delay of delivery or short shipment of material assets in state and (or) mobilisation material reserves their supplier pays per every day of delay a fine at a rate of 0,05 percent from cost of the undelivered or outstood material assets.

In case of delivery in state and (or) mobilisation material reserves of the material assets unsuitable according to the legislation of Byelorussia for long storage, incomplete or not corresponding on the quality and assortment to treaty provisions, their supplier pays the penalty at a rate of 20 percent from cost of the specified material assets.

In case of delivery in state and (or) mobilisation material reserves of material assets on which there are no the marks provided by technical standard legal certificates in the field of technical rationing and standardization, or inadequate marks, or material assets in inadequate container (packing) or uses of means of the packing which are not corresponding to the legislation of Byelorussia about technical rationing and standardization and (or) to treaty provisions are put, their supplier pays the penalty at a rate of 5 percent from cost of the specified material assets.

When replacing with the supplier of the material values put in the state and (or) mobilization material reserves unsuitable according to the legislation of Republic of Belarus for long storage, incomplete, not corresponding on the quality and the range to terms of the contract, and also at their fitting, drawing the corresponding marking, replacement of inadequate container (packing), means of packing in time, established by the parties, but no later than twenty calendar days from the date of receipt by the supplier from the responsible keeper of the written notice of shortcomings of the put material values, the penalties provided by parts of the third and fourth present article aren't applied. Such notice can be directed at acceptance of the material values put in the state and (or) mobilization material reserves and also during a period of storage of material values in the state and (or) mobilization material reserves. The notice goes no later than twenty four hours from the moment of detection of shortcomings.

In case of untimely return borrowed or let out for refreshing or replacement with a gap in time of material values in the state and (or) mobilization material reserves the penalty fee at a rate of 0,05 percent from the cost of not returned material values is collected from the organization having the obligation for return of the specified material values for each day of delay. The penalty fee is collected before full implementation of the obligation for return of material values to the state and (or) mobilization material reserves.

In a case not maintenance quantitative safety of the material Values state and (or) mobilisation the material Reserves the fine is collected from the responsible keeper at a rate of 0,05 Percent from cost of missing material assets for everyone Day from the moment of revealing of infringement of the obligation on storage Material assets state and (or) mobilisation Material reserves to a complete recovery of their stocks in State and (or) mobilisation material reserves.

At an establishment of cases of an autocratic expenditure of material assets state and (or) mobilisation material reserves the responsible keeper pays the penalty at a rate of cost of autocratically spent material assets, and also a fine at a rate of 0,05 percent from their cost per every day from the moment of an autocratic expenditure of material assets to a bookmark of the spent material assets in state and (or) mobilisation material reserves.

In case of untimely refreshment or replacements of material assets state and (or) mobilisation material reserves if the duty refreshment or replacements of material assets is provided by certificates of the legislation of Byelorussia and (or) the contract, infringements of rules and storage conditions of these material assets, and also storages of the material assets which are not corresponding to requirements of technical standard legal certificates in the field of technical rationing and standardization and (or) the confirmed nomenclature, including excluded of it, responsible keepers pay the penalty at a rate of 20 percent from cost of material assets on which infringement of rules of realization of operations is admitted.

In case of untimely performance of instructions of the State reserve within the limits of the contract of storage of material assets of the state material reserve on transfer of the material assets which have been let out from the state material reserve, to the person specified by the State reserve as the addressee of these material assets, the responsible keeper pays a fine per every day of delay at a rate of 0,05 percent from their cost. The fine is collected before full performance of instructions of the State reserve.

Penalties and fines for the infringements provided by present article, are collected proceeding from cost of material assets for date of their payment and written-off under the State reserve decision in an indisputable order of the organisation which have admitted infringements.

Conclusion. On the basis of the analysis of the legislation of Republic of Belarus investigated the main problems to a subject Civil responsibility for violation of obligations for delivery and qualities of material values in the state and (or) mobilization material reserves and to operations with them and feature of their application to the offender.

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LEGAL CULTURE OF YOUTH AS A FACTOR OF CRIME PREVENTION

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The formation of person as a member of society begins at birth and continues throughout his life. However, it is during the first 25-30 years of life when the most important things occur: understanding of the individual social values such as speech, knowledge, human thought and consciousness, attitude to the others and to himself, behavior standards, etc. All this is called socialization. And one of the most important components of the whole process of socialization is legal socialization. At the initial stage of this process, young people already face such problems as the formation of common (not always true) notions about the law, or they do not strive for legal self-education (to be interested in law), while law pierces through all our life.

The problem of legal culture formation, legal education of young people becomes urgent especially nowadays when cultural and morality levels decline, the spontaneous impacts of the environment that surrounds an adolescent predominate, informational load increases. The importance of the issue lies in the fact that a new generation of citizens standing at the threshold of their career choice, is the most vulnerable group of the population. Therefore, the aim of this work is to analyze the phenomenon of legal culture as one of the key measures that prevents youth crime.

Material and methods. The empirical base of the research were the materials of regional scientific-practical conferences devoted to the problems of legal culture formation, collections of scientific works in which the authors tried to analyze the phenomenon of youth legal culture. However, it should be noted that a complex approach to the problem has not been formed in our country untill present time. The present research itself represents an attempt to fill this gap.

The methodological basis of the research consists of systems and logical approaches to the object of the research, which allowed to consider the nature of such a phenomenon as youth legal culture, the formation and development of which is a measure to prevent crimes among youth, as well as to identify the key influential factors on legal education of young generation.

Results and discussion. The initial individual's orientations and appraisals in attitude to the right, law, morality start to develop at the early stages of his public life in family, school, in the environment of coevals, etc. It is these primary attitudes and values that people surrounding an adolescent, put into him. It is appropriate here to quote Plato: "Education is a mastering good habits." And if individuals did not assimilate such values in childhood, the result is increasing of individuals' detachment from normal life; their commitment to anti-social behavior norms is being formed. As a result spiritual and moral emptiness replaces hope for the future. And if at this point the necessary measures are not taken, then the emptiness begins to be changed with quite different interests, which redirect a person from a normal life towards antisocial, criminal activity. There is also a possibility of inclusion of an individual in the informal group (association), created by young people as an alternative to the existing model of a person's socialization, or to be more precise, into one of its units [1].

We are convinced in validity of the statement that a person consists at 1/3 of what his parents gave to him, at 1/3 – of what other people did to him, at 1/3 – of what he did to himself. That is why one of the most important conditions of legal socialization is motivation of adolescents for self-development, as well as the help in the area of his personal development of those people who are associated with the legal education of the younger generation, educators, government representatives, representatives of public organizations.

Legal education should be focused on formation of a complex of knowledge and skills in youth legal consciousness, which would include:

a) knowledge of the basic normative legal acts, proper understanding and knowledge of their content and meaning;

b) deep inner respect for law, legislation, legality and order;

c) ability to use legal knowledge in practice independently;

d) behavior habit in strict accordance with the legal knowledge received;

e) durable and stable spiritual legal immunity (insensitiveness) to commit any violations of law [2].

A state itself should also help an adolescent to choose the right way, because it is impossible to solve the problem of citizens' rights and freedoms protection, crime prevention and control is impossible without solving such a problem as the formation of a civilized, disciplined and responsible person with a developed legal culture.

Thus, legal education is to give an additional impulse to the development of legal awareness of the population, ensuring citizens' rights and freedoms, improving the crime situation, strengthening the credibility of law enforcement authorities.

Conclusion. In order to form citizens' legal culture of high level, it seems expedient:

1) to develop and implement socio-cultural, and legal measures to improve legal culture of pupils and students by implementing a program of special courses. These measures are highly relevant in connection with the beginning of secondary school modernization and significant reduction of legal subjects unit (topics of a legal nature, mainly from the field of constitutional law and human rights; their teaching started in the frameworks of modular courses or sections of the integrated course of civics).

2) to develop and implement specific activities (workshops, round tables, etc.) for the organization and promotion of legislation and raising the legal culture of pupils and students through active participation of judges, prosecutors, employees of the Interior in this work;

3) to pay particular attention to legal education of pupils and students. Important goals of education should be: firstly, the formation of a high level of legal culture, and secondly, knowledge of basic legal norms and the ability to take advantage from the legal system of the state, and thirdly, the ability to assert their rights. Indeed, young people's lack of such qualities as respect to the law, active citizenship, ability for social creativity, etc. has negative impact on the social situation: the number of offenses among youth is growing, social apathy is increasing, more frequent are the cases of antisocial behavior among young people, etc.

4) to improve the system of informing, bringing of laws and other legal acts to the public; to provide citizens, enterprises, institutions, organizations with free access to legal information, and a number of other measures [3].

Only elaborate and effective system of legal advocacy can raise legal culture of society and will increase the level of legal awareness of citizens.

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PRESCHOOL AND PRIMARY EDUCATION. SPECIAL EDUCATION. MUSIC EDUCATION

LANGUAGE ARTS: A PROCESS APPROACH

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Providing children with opportunities and situations in which they are encouraged and even required to express themselves results in the expansion of their oral language. Such a fostering of conceptual development creates a language need; thus, as the complexity of children's thoughts and problem-solving abilities increases, so does the need for language to clarify, categorize, conjecture, evaluate, interpret, synthesize and summarize. These are strategies for learning. Thus, thinking and language are interwoven and should be nurtured in teaching.

Children need to be free in discussing their knowledge, thoughts and feelings with each other, for they have much to share. Speaking is important for the development of other language arts: thinking, reading, writing and listening. Thinking is actually enhanced by one's need to organize, conceptualize, clarify, and in some instances, simplify thoughts, feelings, and ideas as they are shared orally. Speaking facilitates reading, especially in the area of vocabulary acquisition, as children add new words to their speaking repertoires and simultaneously to their reading vocabularies.

The purpose of this text is to provide tools that will enable the inservice as well as the preservice teacher to effectively plan, implement, and evaluate. In doing so, the teacher will constantly be considering the goals to be achieved, the resources needed, and whether or not the goals were met.

Material and methods. Theoretical and empirical analysis of psychological and pedagogical sources, educational software and normative documents regulating the process of teaching English in primary school, showed that the formation of skills of oral speech is addressed in the works of such foreign researchers as Julia M. Dobson, David Jacobsen, Paul Eggen, Donald Kauchak, Suzzane Lowell Krogh, Janet K. Orr ect.

Results and discussion. Oral language often supports writing, especially as young children are exposed to writing's initial stages. When undertaking a writing task, children often talk to themselves. Some children engage in self-dialogue as they write, later using punctuation (exclamation points and underlining, for example) as graphic representations of intonation. Other children talk to themselves as they generate their writing ideas in a type of oral evaluation of the soundness of their own creative efforts. Thus, self-dialogue is used as a means of analysis of a written product. Students at all grade levels need to engage in discussions about their individual pieces of writing. Having opportunities to talk with peers about a topic or idea prior to attempting to write a first draft enables students to refine their thoughts about the writing piece. Thus, when discussion precedes the writing event, the quality of the written product improves. This is true because the writer has probably analyzed, elaborated, questioned, and to some extent justified thoughts and ideas prior to putting them down on paper [1].

Finally, speaking is important to the development of listening because good speakers actually tend to be good listeners; they are genuinely interested in what others say. In addition, good speakers not only have content worthy of sharing with others but are also effective in utilizing the special oral language skills of fluency, intonation, tone and style.

Because oral language skills contribute to thinking, reading, writing and listening, teachers need to guide children's refinement of oral material presented. This can be done through teacher modeling and the oral sharing of quality literature; it is also beneficial for teachers to ask students meaningful questions that focus on content. Clearly, children need to engage in oral language activities in order to gather and share information as well as to react to new experiences. Students need ample opportunities to engage in meaningful dialogue as part of the learning process, something that they will be required to do on a daily basis as adult members of the nation's work force.

A good conversationalist must have oral language skills and an ability to think clearly and quickly. Interpersonal skills are also important inasmuch as conversation consists largely of personal reflections and therefore requires the sensitivity of all the participants [2].

Oral interpretation is the way in which poetry and prose are spoken or read aloud. The speaker or reader sets the rhythm, tempo or cadence for the selection and by using the components of intonation – stress, pitch and juncture – presents the poem or prose in a certain way. Because there is no single right or wrong way to interpret children's literature, oral interpretation encourages creativity and experimentation with language and its sounds.

Choral speaking and reading are enjoyable activities for children. Choral reading itself never fails to excite children's interest in reading regardless of their age, reading level or level of language proficiency for children whose first language is not English they are able to read choral reading selections with little difficulty.

Reader's theater, which is unique to choral reading and speaking techniques, allows for student portrayal of individual literary characters through oral interpretation. The written script may be based on either an entire book, such as a picture book, or an episode within a longer work, such as a novel. In essence, then, reader's theater becomes an informal reading of various dialogues woven together through narration.

Storytelling is an excellent means of developing speaking skills. Telling stories enhances oral language and sharpens listening. Speaking ability is improved through attention to articulation, clarity and volume. Poise and confidence in speaking before a group are acquired in the accepting environment of the classroom. The storytelling process consists of six sequential stages. The first stage is the selection of a story that appeals to the storyteller and is appropriate for the intended audience in terms of theme and mood. The second stage is the analysis of the story's characters and plot. The third stage is the experimentation with intonation and gestures to depict the story. Telling the story through scenes, particularly with a set introduction and conclusion, is the fourth stage. The fifth stage is the telling of the story in rehearsal before the actual presentation to a live audience, the final stage [3].

Brainstorming, a process used by discussion groups, occurs when all participants contribute ideas or possible resolutions to a real or proposed problem. No idea is rejected; rather all suggestions are accepted and formally recorded in writing

Alter gaining experience in brainstorming and consensus building, students are ready for the more formal presentations of panel discussions and debates. In panel discussions, a group of three to five students is assigned a specific topic to be presented before a designated audience. The duty of each of the panel members is to develop an individual oral report about a particular aspect of the main topic through research and group discussion. One student assumes the responsibility of serving as the panel leader or moderator. This position requires a student not only to present the first or the last report but also to coordinate the group's work and the order of the presentations and to give the introductory and concluding statements.

Media, including bulletin boards, dioramas, mobiles, puppetry, audiotapes, videotapes and overhead transparencies can be used inexpensively within the classroom [1].

Conclusion. The process of foreign language teaching should be aimed at preparing for cross-language cross-cultural communication and the formation of linguistic identity, which developed and improved in the process of learning language and as far as mastering the skills of communication in the target language. Consequently, for the purposes of its formation on foreign language lessons should create optimal opportunities for speech behavior of students in the conditions of artificially created for educational purposes interlingual communication.

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ALGORITHMIC ACTIVITY IN DEVELOPMENT OF ART ABILITIES OF THE PRIMARY SCHOOL'S PUPILS

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Development of creative and intellectual abilities of the primary school's pupils is the most important general objectives of primary school, which is solved when the schoolchildren learn about art.

Indeed, the art and music lessons in primary school often include creative assignments. The teacher asks children to imagine something, to convert smth., to portray on their own conception of the child. A teacher gives assigns multiple-solving, which overarches objective when it is not obvious to the child, and terms are not defined initially. This assignments correspond to the highest (creative) level of learning by V.P. Bespalko [3].

Of course, the value of such tasks for the primary school's pupils development is great. But only a small part of schoolchildren like this kind of activity. Others do not cope creative assignments or do it without interest. What is the reason of this phenomenon?

Results and discussion. According to the study of T.A. Barysheva and Y.A. Zhigalova we can define creativity as the human activity (in two planes: external and internal), which is transforming reality (both natural and social). This activity leads to the original product's creation [2].

I.A. Lerner believed that creative activity occurs at the moment of the pupil's transformation of knowledge and skills in a new situation, or when a teacher formulates a new problem in familiar, standard conditions. This can be a new vision of the function of a familiar object. It is an assumed vision of the structure of the object study, i.e. fast, often instantaneous perception of parts and elements of the object in their relationships with each other. This work assumes that pupils have the ability to see an alternative resolutions and alternative approaches or the ability to combine the known ways of solving the problem in a new method or the ability to create their own original way of solving [5].

These activities are difficult not only for children but also for adults. Because the child needs to have a specific level of General learning skills, cognitive development, motivation to creative activity, specific level of cultural and special knowledges to produce a creative product or a new way of activity

These parameters were selected as criterias of readiness of primary school children for the creative activity by V.A. Rudakov [7].

From where a teacher should start teaching creativity in primary school? To answer this question we need to note the creative activity's interconnections with other activities that are available for primary school children.

V.N. Druzhinin noted the correlation between the level of development of creative and intellectual abilities that is necessary for successful creativity, but it is insufficient [4].

According to V.A. Maslennikov, the development of intellectual abilities and the level of development of creative abilities have to consider for the level of algorithmic skills of the primary school children. [6].

Indeed, the primary school children need to make a lot of intelligent and practical action (to formulate a goal, make a plan of work, to remember something from my own experience, to speculate, to portray) when they are solving creative assignments.

Algorithmic skills is the ability to carry out an action by a given algorithm. Common for these types of activity is information of all types of algorithmic actions among school children

V.A. Maslennikov describes correspondence between algorithmic actions and levels of learning by V.P. Bespalko. [3].

So the first level of learning by V.P. Bespalko corresponds with the recognition of an object or activity. This action is not algorithmic, but rather perceptual- mnemonic. The primary school children required to be able to observe the object or activity, and should have enough information to recognize it.

The second level by V.P. Bespalko corresponds with pupils who recognize the object or activity and also they are able to reproduce the algorithm aloud or silently. The transformation of the object according to the specified algorithm corresponds to the same level.

The third level of learning by V.P. Bespalko is inherent to the ability to convert the algorithm depending on the purpose of the assignment. This work will be, no doubt, intellectual.

And when the primary school children will reach the fourth level of learning by V.P. Bespalko they will develop their own ways of working, i.e. will create their own algorithms.

Considering the art development of the primary school pupils we can note that favorable conditions for a variety of algorithmic activities have take place at the art lessons. There may be different kinds of algorithmic activities: the assignments for following to the instructions, acts of algorithm's recognition, acts of algorithm's conversion, acts of execution of the known algorithm.

The complexity of the algorithms passes through automation, when the primary school pupils need to remember the known algorithm silently and to commit the necessary actions, and also through the intellectualization, when the primary schoolchildren are asked to modify the algorithm to make new actions [1].

Conclusion. Systematic and regular using of such kinds of algorithmic activity at the art lessons in the primary school will allow children to achieve a higher level of art activity . It will contribute to the development of their art perception. Also improve art skills to automatism by using algorithmic tasks . Eventually it will allow the primary schoolchildren not think of methods in the process of doing their own creative works.

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EDUCATION OF PRIMARY SCHOOL PUPILS BY MEANS OF FOLK PEDAGOGY

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The importance of education for national consciousness of the young generation has folk pedagogy which develops on the basis of collective creativity of many generations and provides the historical and social experience. Reference to folk pedagogy is a factor that stimulates the mastery of the native language, the restoration of national traditions, cultural enrichment, allows the use of moral means and content in the process of education. Education, based on folk wisdom, has the power, which has no equal in the best theoretical branches of science and culture.

The aim of this work is the analysis of the materials, which have very important influence on the formation of outlook of the young generation, the raise of the national consciousness.

Material and methods are analysis of scientific literature, summarizing and comparative benchmarking.

The moral foundations of the Belarusian folk pedagogy have universal value. They concretize optimism of the people who take a difficult path, a great respect for other nations, tolerance, courage and bravery. Today there is particularly intensive process of development of national educational thought, because of the process of enriching traditions, the appearance of new approaches to the education of the young generation. Folk pedagogy increasingly manifests itself as a universal phenomenon. The national pedagogy reflects the continuity of generations. It is a source of national identity, world view and creativity. A great role is played by folklore. Acting as one of the elements of any national culture, folklore is an effective means of self-expression of the people; take the best features of the nation, the ideals of high morality. The Belarusian folklore reflects the experience of education of the young generation, a system of techniques and methods of education.

Results and discussion. The process of formation of the individual, moral development is taking place throughout life, but the foundations are laid in childhood. From the first days of life the child hears the parent lullabies, growing up, admires the brave defenders, songs. Childhood, primary school age is the most favorable period for mastering the individual values of the national culture.

During this period pupils are fond of fairy tales, legends, riddles, proverbs most of all. All these genres of folk art perform very important moral and educational function. Passing of spiritual heritage happens through knowledge, experience and wisdom by means of specific actions: from father to son, from mother to daughter. This is the folk pedagogy in action, acquaintance with the art of public education. The strength of folk pedagogy lies in authoritative thoughts and considerable results of the work of the close people [2, p. 9].

Fundamental principle of folk pedagogy is the cult of labour and human mind, skillful hands and understanding the place in nature. All these principles are discussed in the process of studying folklore works on the lessons of literary reading in elementary school: "From folk sources " (class 3 "Literary reading") "From a rich horn" (class 4 "Literary reading").One of the main tasks that teachers must give students in the process of studying the works of this period, is the task of education diligence, honesty, responsibility for their work.

By means of different kinds of work a person is obliged to the appearance and development of language. Native language is one of the first teachers of the child and an important means of educating the people, because it is something with which person lives. Using the native language man joins his ancestors and descendants. The native language makes a person belong to an endless chain of generations. People have always respected ancestors; have known their ancestry and family traditions. It is hard to understand the meaning of "Homeland" without knowledge about the history of family. Experience in public education suggests that the love for the country appears in childhood and starts with the love for the parents, the native language, culture, history.

The question of aesthetic education occupies a significant place in folk pedagogy. The quest for beauty is peculiar to each person. Accommodation, furniture, tools, clothing and household items are characterized by forethought, ease of use, beauty. People's desire to live according to the laws of beauty, to create it is reflected in the statements: "Don’t see what on the head, and see what in the head", "Meet on clothes, and see off on the mind."

Many folk sayings consider health as the greatest treasure "you can’t buy it in the market. "Traditional techniques and methods of physical education such as games, competitions, which imitated the labor process or hunting, military operations and ceremonies are used by teachers.

A distinctive feature of education in traditional pedagogy was instilling respect for nature. The child was taught to observe animals, birds, fish, and their ability to change behavior according to changes in the weather. Signs, checked bylong-term practice, worked on intellectual education of children, teaching them to comprehend the phenomena of nature, to study the cycle that develops observation and love of nature.

An important direction in the Belarusian pedagogy was the moral education. People have appreciated decent, good behavior. People were eager that education, training, communication formed in youth a sense of kindness: “to do good means to amuse yourself”. Truthfulness and honesty is the basis of the national ideal of education. It is expressed in the saying "the world stands on the truth". Questions of friendship were widely reflected in folk pedagogy and on the pages of textbooks for elementary school students: "an old friend is better than two new ones". Highly appreciating the positive qualities of the person, people condemn immorality, bad acts in their fundamentals statements. An important idea of oral folk pedagogy is the idea that education and training should be continuous: "live and learn", "learning is never too late".

Conclusion. Experienced primary school teachers, take into consideration the experience of folk pedagogy, take steps to join parents to the educational work in the classroom because it is important to strengthen and expand its influence on the behavior of the pupils by parents, respectable people and the heroes of past events. The impact of content, means, forms and methods of folk pedagogy can be explained by its proximity to national roots, deeper penetration into the national consciousness.

Achievements of folk pedagogy occupy an important place in the education of primary school pupils because arouse interest in the kind of family, bring a sense of pride in labour, creative affairs of the old generations, form a sense of respect and love for the Motherland.

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FEATURES OF EMOTIONALLY PERSONAL SPHERE OF CHILDREN WITH DIFFICULTIES IN TRAINING, IN INSTITUTION CLOSED TYPE

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Group of kids who are in social risks are constantly under stress. They experience mental, emotional, and communicative deprivation. Prolonged exposure on children traumatic situations, the violation of interpersonal relationships with adults and peers, creates internal tension, anxiety, aggression, conflict, feeling of an inferiority, worthlessness, and rejection. Most children in this group end up in shelters, infant homes, orphanages, or boarding schools.

Issues in the development of individuals in closed children's institutions started to pose a great urgency in recent years. Various aspects of the mental development of orphan children can be found in the works of M. Kondratyev, V.S. Mukhina, A.M. Parishioners, O.E. Smirnova, N.N. Thick, N.K. Radina and others. They have explored features of self-determination, the role of interaction with adults, and features of child self-acceptance, development of children who are raised with families and without families. The have also analyzed the environment conditions and subjective factors of development, especially the emotional sphere of children and staff of theses orphanage institutions.

The results of these studies and surveys suggest that children in this group have qualitatively different shape of emotional and personal development from those who are raised in families. Thus, the study of the phenomenon of maternal deprivation is significant and timely to be examined. The relevancy of this study is related to the study of children who have difficulty in social, intellectual, interpersonal development. The reason why this group of children have personal and intellectual problems are because they are deprived of both education and development. "Deprivation" means lack or limitation of opportunities to satisfy vital needs [1].

The Objetive – is to examine features of the development of emotional-personal scope of children in closed-type institutions.

Material and methods. *Object of research*: children personality with learning difficulties. *Subject of research*: Features of emotional-personal scope of children with learning difficulties, who live in closed-type institutions. *Research methods:* Analysis of the literature and regulatory documents on the topic of this research; study and generalization of domestic and foreign practices; performing comparisons; conducting interviews; theoretical analysis and synthesis; empirical research.

In an empirical research which involved 24 children aged between 6 to 8 years: 12 children with learning difficulties (experimental group - EG), 12 children with normal mental and physical development (control group - CG).

Results and discussions. In orphanages, children with learning difficulties, have been noted herewith of all sides of personality suffer emotional underdevelopment. These children share a characteristic of emotional development: such as excessively or undercharged emotional excitability, frequent changes of mood, instability of feelings, decreased self-organization, purposefulness, insufficient development of independence, and inadequate self-esteem [2].

For the purpose of studying emotional scope of children – The graphical method “Cactus” of M. Panfilova was used [3, p.154].

Qualitative and quantitative analysis of the survey led to the following conclusions (table).

Almost all children have a sense of aggression. The children of both groups strongly developed the desire for loneliness. In both groups of children 100% of the cases show "eccentricity"; "Extroversion" - 20%; "Introversion" in 100% in EG and 80% in CG. 90% of all children seek to home protection in which there is a sense of family community. Children experiencing emotional discomfort and stress - 90% in the EG and 50% in the CG, demonstrative behavior - 12% in EG and 45% in CG. According to observations, children of EG are more shy, unsociable, more impulsive, not confident, surrounding-dependent, less open, anxious, but more optimistic than their peers in CG.

Table - Results of the status of children's emotional sphere EG & CG (%)

N	Criteria for Analysis	EG	CG
1	Aggression	90	90
2	Impulsiveness	60	20
3	Egocentrism	100	100
4	Dependence, diffidence	10	-
5	Demonstratively, openness	12	45
6	Secretiveness, caution	-	12
7	Optimism	90	50
8	Anxiety	90	50
9	Femininity	20	40
10	Extroversion	-	20
11	Introversion	100	80
12	The desire for home protection	90	90
13	Aspiration to loneliness	10	10

Conclusion. Thus, children with learning difficulties are closed within themselves. They will not attempt to initiate contact with adults, have difficulties to communicate with their peers, senseless to community, are afraid of joint communion, show aggression, try to attract attention with the aid of "bad" behavior, and many feel emotional discomfort and stress. Many children with learning difficulties are in depression. The question "Is the cactus, prickly (harmful) or not?" In general, the answer is that cactus is prickly and sad, identified with their description and their mood.

As of today, the problem of emotional - personal development of children, arises in closed-type institutions is significant. Adults adapt children to a strict code of discipline. They leave little space for the manifestation of own initiative and activity. If it is manifested then it causes discontent of unacceptable form and content. In the future we plan to develop a program to correct these identified deficiencies of emotional-personal scope, to implement this program in the educational process of children's institutions and will control its progress which will be driven by the results of this implementation of the program.

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THE MAIN APPROACHES TO PSYCHO-CORRECTIONAL WORK WITH FAMILIES RAISING CHILDREN WITH SPECIAL NEEDS

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The increasing number of children with special needs is an acute social problem in modern society. The voltage arising in the process of educating children with special needs, leads to dissatisfaction of parents who perform their functions, which in turn is a cause of family conflicts and violations of the socialization process. Therefore, the task of humanization facing modern society, raises the questions of psychological support of parents who raise children with special needs, because the family is the environment in which time is developed under the child and, therefore, important to its effectiveness in promoting this development.

To learn the basic directions of work with families raising children with special needs.

Material and methods. Theoretical, causal-systematic study of problems in domestic and foreign psychological-pedagogical literature (scientific literature analysis, comparing, matching and others).

Results and discussion. In the process of working with parents who raise children with special needs, can be roughly divided into two stages: psycho-diagnostics and correction.

The diagnostic stage is important for further psycho-work, so it is advisable to explore the psychological climate in the family, parental styles and pedagogic competence of parents, value orientation, level of aspiration, self-esteem; individually-typological and characteristic features of the family members must be installed [1]. At this point thematic questionnaires and surveys, conversations and interviews can be used.

In the process of psychocorrectial help to families in this category there are the following tasks:

• changing the relationship of a parent to a child towards his more emotional acceptance;

• assisting parents in developing effective communication with a child;

• parents education methods eliminate undesirable behavior of a child;

• providing emotional support to parents removing their stress and anxiety;

• involve parents in the process of development, training and education of children [2].

To address these questions, the following forms of work with the family are used: individual and in a group (V.Tkacheva) [3].

Proposed by MrsE. Dementieva psycho model of working with parents raising children with special needs, is represented by the following form [4]:

• Individual counseling for parents includes the primary psychological and pedagogical examination of experts, Advisory visits, repeated psychological and pedagogical examination.

• Educational work - holding lectures to obtain the necessary theoretical knowledge on various issues of upbringing and education of children. To educational concerns and parent participation thematic meetings are held by the English, together with other specialists of the educational institution.

• Visit of English parents by individual classes teachers. Aims to develop skills of cooperation in the organization of joint activities, strengthening cohesion and understanding in the dyad "mother - child".

• Joint activities, organization of round tables, parent conferences, children's matinees and holidays etc.

• Stand for parents. An important form of work is stand for parents, where in an entertaining way collected all the useful information. Rubrics are updated daily.

• Maintaining a diary of the events of our lives." This direction is based on the work EL Goncharova, Ohikkoshi, Eggertii. It is specially organized and systematic work of a child, the subject of which is the events of his own life reflected in the available symbolic forms.

• Work with the parent group, which includes: - analysis of specific problems associated with education and training; - selection of appropriate forms of communication and behavior in interaction with a child; - the establishment of constructive relations with specialists of educational institutions.

• Workshops for parents.

• Subgroup classes. At the final stage of work with parents defectologist conducts subgroup classes, when there are two children and their mother.

Conclusion. In General, family education contains a significant pedagogical potential which can be used to eliminate violations of the development of emotional and cognitive aspects of the child's personality.

In the process of working with parents, who raise children with special needs the following tasks: should be achieved

- inclusion parents in the psycho-pedagogical process that changes the perception of their special child and contributes to their inclusion in the unified family team;

- warm emotional background of interaction with the child of this category, optimization of perception and behavior features, personality, the formation of structural models of parental behavior;

- joint participation of children and parents in group classes that will lead to positive changes in the sphere of interpersonal interaction with peers;

- consolidation of the parent group, due to the awareness of the common problems of children and commitment to resolving these issues will have a significant impact on harmonization areas of family relations and relations between the family and the external environment.

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STUDYING THE UNDERSTANDING OF EMOTIONS BY ELEMENTARY SCHOOL STUDENTS WITH MENTAL RETARDATION

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The problem of studying the emotional sphere was investigated by such outstanding native and foreign psychologists and neuroscientists: P.K. Anokhin, L.S. Vygotsky, Charles Darwin, William James, C. Izard, A.N. Leontiev, A.R. Luria, A.E. Olshannikova and others. As for correctional pedagogy the problem of children with mental retardation was studied by: H.P. Vygotsky, I.M. Golovina, S.D. Zabramnaya, L.V. Zankov, Y.N. Kislyakova, K.S. Lebedynskaya, V.G. Petrova, O.E. Shapovalova ect.

The emotional sphere of children with mental retardation, especially of primary school age, is characterized by immaturity and substantial lateness. Petrova V.G. notes that in some cases, emotions resulting in schoolchildren with mental retardation are inexpressive, monotonous, not enough differentiated, are inadequate to external influences. Pupils with mental retardation tend to polar, deprived of subtle shades emotions, that are superficial, unsteady and are subject to rapid, often drastic changes [2. p. 139]. By the elementary school students with mental retardation, are noted delays in the manifestation of differentiated emotional reaction, inadequate response to the environment. Children of this category have a limited range of experiences. This is related to the frequent difficulty understanding facial expressions and gestures, expressive movements of people, images, emotions in the picture [1. p. 237].

The goal of the research: to determine the features of the emotional sphere of children with mental retardation.

Material and methods. The experimental research of understanding of emotional states on human facial expressions and within a certain situation was undertaken among students of 1 and 2 departments of supporting school based on "Vitebsk supporting school number 26". As methods of experimental research were used: a methodology of S.D. Zabramnaya, O.V. Borovik to identify the understanding of emotional states by human facial expressions, a methodology of L.B. Fesyukova to identify the understanding of emotional states within a certain situation.

Results and discussion. Studying the understanding of emotions within human facial expressions by elementary school students with mental retardation of the 1st department showed that 58% of students in elementary classes correctly identified and named the emotion of "joy", 75% - the emotion of "sadness", 33% - the emotion of "fear", 42% - emotion "anger".

Studying the understanding of emotions within certain situations by elementary school students with mental retardation of the 1st department showed that 75% of students in elementary classes correctly identified and named emotion "joy", 83% - the emotion of "sadness", 67% - the emotion of "anger", 17% - the emotion "surprise", 42% - the emotion of "fear."

As can be seen from the results, the majority of children of the 1st department of the supporting school properly understand the emotions of the person on facial expressions and within certain situations. It should be mentioned that of children of this category determine better the emotions within certain situations than on human mimic.

Studying the understanding of emotions on human facial expressions by students of the 2nd department showed that 40% of high school students of the 2nd department correctly identified and named the emotion of "joy", 20% - the emotion of "sadness", 20% - the emotion of "fear", 40 % - the emotion of "anger."

Studying the understanding of emotional states in certain situations by students of the 2nd department showed that 40% of high school students correctly identified and named emotion "joy", 20% - the emotion "sadness", 40% - the emotion of "anger", 0% - emotion "surprise", 0% - the emotion of "fear."

These results make it clear that most of the children of the 2nd department the supporting school misunderstand emotions both on human facial expressions and within a certain situation. It should be noted that children of this category defined a little better emotions on human facial expressions than in a certain situation.

As part of the interpretation of the results, we analyzed the ability of children of the 1st and 2nd department of the supporting school to identify emotions on human facial expressions and under certain situations. Students of the 1st department of a supporting school in most cases correctly named emotions, but some of the students did not know the names of emotions, did not understand the cause of a given emotion, could not explain in their answer, and some of them needed help of the experimenter. Primary school students at a supporting school almost did not express their emotional relationship to a particular situation, answered in monosyllables, simply.

Students of the 2nd department of the supporting school in most cases named emotions incorrectly, did not know what kind of emotion is manifested in a particular situation, did not understand the meaning of the situation, and they often needed help of the experimenter. High school students of the 2nd department did not express their emotional relationship to a particular situation. Answered in monosyllables, simple, and not always with complete sentences, their phrases were often constructed grammatically wrong, some of the students used in their answers non-verbal means.

Conclusion. Thus, we can conclude that the special school students have difficulty in determining the emotions on human facial expressions and within certain situations. In this regard, a need to improve the system of emotional education of students with mental retardation is obvious. As a part of the continuation of this research we have initiated the development of correctional and developmental curricula aimed at the development of the emotional sphere of students with mental retardation considering the identified features.

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NURTURING SPIRITUALITY AND PATRIOTISM AMONG THE PUPILS BY MEANS OF MUSICAL ART IN THE FRAMEWORK OF THE PROGRAM "THE BEAUTY OF SPIRITUALITY"

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Spiritual and moral education is one of the leading problems in the modern school. Nowadays the cooperation of the Belarusian Orthodox Church and the Ministry of Education of the Republic of Belarus has become more urgent. Every year the number of educational institutions engaged in spiritual and moral education on the basis of Orthodoxy is increasing, there are new programs in this direction. However, many of them containing a serious amount of knowledge pose a danger to repel an unprepared student, and even to harm the fragile soul of a child who is just beginning its formation on this path.

Moral and spiritual development is impossible without the patriotic upbringing of the younger generation. It is two components, which cannot exist without each other. Love for the Motherland, the Fatherland is an integral part of spiritually and morally mature person.

Obvious is a need to improve the practice of moral and patriotic education of students, in search for new approaches to the educational activities of the school.

Material and methods. The methodological basis for the research is the works of domestic and foreign scientists on moral education (Gavrilovec K.V., Emelyanova I.N., Zenkovsky V.V., Ushinsky K.D.) and on music education (Aliev Y.B., Kabalevsky D.B., Koroleva T.P., Medushevsky V.V.). Following methods were used: analysis, classification, practical methods, generalization.

Results and their discussion. The most successful solution to the problem of moral and civil-patriotic education promote the subjects of aesthetic cycle, in particular music, because music does not teach and does not instruct, and is a model of emotional-sensual perception, and therefore of humane ways of formation of spiritual culture of a person. The art of music has a huge emotional and educational impact on people, "music is the most miraculous, the most subtle means of attraction to goodness, beauty, humanity" [4, p. 172].

Spiritual and moral education depends largely on the emotional intelligence of children, because "morality can perform its regulatory function only when it's emotional-sensual adopted" [1, p. 34]. Therefore, listening, learning and performance of Church music, secular and folk music of spiritual content, patriotic songs, of contemporary Christian songs are of great importance in the formation of spiritual and moral qualities of a person.

It is common knowledge, at music, singing in particular is an integral part of Orthodox worship. The Saint, a Church writer and theologian, Basil the Great believed that the Holy Spirit knew how difficult it is to turn a mankind to virtue. So It "has mixed dogma with pleasure from tunes, so that together with ease and pleasure to the ear, we quietly took benefit from the words" [3]. It is clear that the first goal of putting music in worship were educational goals. The Church knows the power of music, its sweetness and tenderness that it brings to the human soul.

At the initial stage of spiritual formation of students they should be encouraged, given the opportunity to develop their individual potential, provided freedom of action. Given that in many families after a long period of atheism children are not brought up in the light of the Christian religion, the formation of spiritual and moral qualities of a person on the basis of Orthodox traditions should begin gradually. One should not try to fit in an immature child, the great heritage of Orthodox culture.

Information about Orthodox culture at the initial stage should include only the necessary information. First of all it should be acquaintance with the Orthodox feasts of the Intercession of the Mother of God, Christmas, and Easter, as most traditional, including for unchurched children.

Based on the foregoing, was developed the author's program of activities "The beauty of spirituality" for students in grades 5-9, which is an integrated course of musical art and Orthodox ethics and culture. This program was tested on the basis of the state educational institution "Secondary school №15, Polotsk". The content of the program is based on ethical categories, moral understanding and moral values from the point of view of the Orthodox creed, and the explanations of spiritual problems of real life, the upbringing of spirituality and patriotism in children by means of musical art.

The course includes the use of different methods and forms of work with children. But the main activity is the choral and solo singing, which for centuries has maintained its strength in the moral and patriotic growth of an individual. Singing high samples of musical art has a positive effect on mental health of students, preliminary discussions about the content of spiritual works make you think about eternal values, develop a desire for self-knowledge and self-improvement.

Conclusion. Thus, the educational process at the initial stage of spiritual and moral formation of students has to begin gradually. Education through art, particularly music, is the most humane way for the formation of spiritual and moral qualities of a person. This introduces students to the spiritual capacity of the national culture with the help of goodness and beauty. The reflexive evaluation of the activities allowed us to conclude that the activities for Orthodox holidays, singing sacred music have a positive impact on the development of spiritual and moral culture of the students.

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FEATURES SPEECH COMMUNICANION YOUNGER SCHOOLBOYS WITH INTELLECTUAL DISABILITIES

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One of the priorities in special education is the problem of the study and development of speech communication younger students with intellectual disabilities. Research in the field of communication skills of students with intellectual disabilities are scarce (D.C.Agavelyan, D.I. Boiko, V.A. Vyaryanen, E.I. Razuvan et al.). In these studies examined certain aspects of the communication process of students with intellectual disabilities and the specific remedial developmental effects on speech communication in this category of students in the process of purposeful learning disclosed enough.

Material and methods. The basis for the study were: supporting school No 26 Vitebsk and Secondary School No '38 Vitebsk. At various stages of experimental validation involved 30 primary school children: 10 schoolboys with intellectual disabilities; 10 schoolboys with severe speech disorders; 10 a normally developing younger schoolboys.

To conduct the study, we chose the method proposed by E.S.Unkovskaya: students were divided into pairs, which were given the following task: subject exhibited a picture of the animal, and then offered to collect the same steam picture (one for two), cut into several pieces [1].

Results and discussion. Results of the study show that the level of the universal means of communication in primary school children with severe speech disorders is somewhat higher than in primary school children with intellectual disabilities. In children with severe speech disorders observed gross violations zvukoproiznositelnoy hand words, blurred expressions of their thoughts, disturbances correct construction of the utterance. These children are more active in the communication process, interested in maintaining conversations tend to cooperate more willingly listen to the comments of the neighbor. Also, as for the pupils of the school, and for this category of children, seen in the use of speech, harsh words and expressions obscene words. Therefore, for both groups of younger students need to weave the most effective forms of work on the development of verbal communication (dialogue, Pretend Play, dramatization, using everyday situations, etc.). Comprehensive, phased training in communication skills using modeling speech situations, role playing and other techniques has a positive impact on the development of communicative abilities of children with persistent speech pathology and improves the efficiency of correctional and educational activities aimed at overcoming the general underdevelopment of speech. Normally developing younger students have sufficiently developed communication skills. They vocabulary is significantly higher than in primary school children with severe speech disorders and in primary school children with intellectual disabilities. Significant qualitative indicators related to the ability to correct, complete and accurate to express his thought, logically and coherently build the statement and make it understandable and accessible to the interlocutor expressed practically in full. In other words, it does not matter how many words a child has used in his statement, and how effective is this saying to a friend, and as far as consistent with the goals of the verbal behavior of the child, ie, prepared the thought of the speech development in the overall context of communication, communicative activities.

Conclusion. Thus, communicative development based on intellectual development and, in particular, on the development of conceptual thinking, rechemyslitelnoj activity subject is the formation of speech processes by which communication is realized, or more precisely, the language skills: speaking, listening, reading, letters. The notion of communicative development includes formation as rechemyslitelnoj and communicative activities, i.e. formation processes of thought, speech and communication, which are inseparable from each other, are closely interrelated and interdependent. Should speak of direct dependence on the intellectual development of children's communication skills. The lower the intellectual development of the child, the lower its possession communication skills.

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CREATION OF MULTIMEDIA PRESENTATION AS A MEANS OF DEVELOPMENT TEENAGERS' CREATIVE ABILITIES

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One of the main aims of musical education is to develop creative abilities of pupils. In modern psychological and pedagogical research works there is no the single treatment of the conception "creative abilities". For most of psychologists 'creative abilities' is the children's attitude to the creative work, their artistic talents, and the level of their demonstration creative actions and productivity of activity. A.A. Melik-Pashev considers the children's creativity as a result of child's requirement to express the inner life. The researcher emphasizes three levels of artistic gift: esthetic position of personality, creative imagination and the totality of special knowledge, skills and acquirements. According to N.P. Volkov, creative abilities are abilities to extra-ordinary thinking, possibilities to notice extra-ordinary things in ordinary life, skills to analyze events and to discern patterns in them. So we can say, that creative abilities are the abilities which determine the possibility to make a discover, to create new objects of material and mental culture [1, p. 217].

The development of pupils' creative abilities by the means of music is still relevant in aesthetic education. Investigation of this problem was begun at the beginning of the XX century by such well-known soviet educational specialists as A.V. Lunacharski, P.P. Blonski, S.T. Shatski, B.L. Jvorski, and N.J. Brusova. Their ideas and the concept of the necessity to develop creative abilities of children were theoretically and practically improved by such contemporary researchers as V.N. Shatskaya, N.L. Grodzenskaya, M.A. Rumer, N.I. Sats.

Nowadays we can see the tendency of activating the process of musical and aesthetic education by the way of developing creative abilities of pupils. This is determined by the following factors: first, it is necessary to bring up a well-educated and cultured personality for modern society; second, a creative process helps to develop pupil's mentality, memory, observation and purposefulness; third, any creative work is connected with self-contained actions and skills to use knowledge in new field. That's why, the main aim of musical education is to create appropriate conditions to develop creative activities of every pupil regardless of his individual capabilities.

Material and methods. In modern world with its innovative and computer-based technologies the problem of creative development of personality is especially relevant. Different computer technologies in education open new possibilities for pupils' creativity. Such technologies can be also used at music lessons. Today, in secondary schools we observe an increased interest to creative computer projects among teenagers. Using a computer in learning process allows pupils to get information from the Internet; to work with texts; to create an image, to draw and construct objects by the means of graphic editor; to organize a multimedia statement [2, p. 90].

Results and discussion. The process of active cognitive development is typical for the children at the age of 12-15. Their logical memory and imagination are being developed. The mechanism of storing facts is lead to mentality. Teenagers can do difficult tasks with excitement; get little-known facts about composers and musicians, create multimedia presentation by the guide of the teacher. Attraction of computer multimedia technologies to education leads to formation of teenagers' motivation to learn musical heritage and develop their creative mentality.

The process of creation a multimedia presentation represents a combination of computer graphic arts, animation, audio and video elements which are organized in one product. Every multimedia presentation consists of a plot, a script and an accurate structure. The process of creation a multimedia presentation in music takes place by the guide of the teacher. The choice of themes is realized independently or by teacher's help. For, example, a pupil of the 7-th form Sabinina B., performed the song "Hope" of A. Pakhmutova at the school concert. This fact influenced the girl's decision to study the biography and other songs of this composer to reproduce a temper and spirits of that song. The next step was to organize the search of information about A. Pakhmutova. The pupil was independently looking for necessary information in different sources: books, encyclopedias, Internet recourses. Having analyzed the information, she began to create the presentation which was her own vision of the theme.

A special role in this process is assigned to the teacher. He advises and guides a pupil in creating a final product - presentation. The selection of images, video clips and sound effects is done on the third step of work. Pupil was independently looking for images relying on the composed text: portraits of the composer, her friends and performers, music. The pupil also chose suitable videos where A.N. Pakhmutova tells the story of creation of her songs on her own: "Hope", "Belovezhskaya Pushcha", "Tenderness", "Goodbye, Moscow", "Who grazes in the meadow", "How young we were ". The last step of creation the presentation was editing of the whole product. So the multimedia product "Songs of A.N. Pakhmutova" was created. This presentation took place in the international festival of multimedia projects "Music by the children's eyes" and was awarded with diploma.

Conclusion. Creation of a multimedia presentation is a creative process, where teenagers can reveal their abilities, imagination and fantasy. Such kind of work leads to a close cooperation of teachers with pupils, creates the interest to pupils' research activity, and positively influences the creativity of personality. Creation of a multimedia presentation stimulates the development of mental abilities of pupils. So, such kind of work forms a creative personality, solving the main aim of education.

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THE RESULTS OF EXPERIMENTAL VERIFICATION OF THE SPECIFIC OF THE PERCEPTION OF WORDS WITH THE INTERNAL FORM BY PRESCHOOL CHILDREN

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Language is an integral part of human life. It is the primary means of interaction between people. Speaking is an action through which meaning is contextually created. Sensitive period for development of speech for children - 6 or 7 years. At this time it is necessary to pay of attention to the perception of words with the internal form. These words are help development the creative and thinking of preschool children. To identify the perception of words with internal form by preschool children an experiment was carried out.

The purpose of the experiment - to check the specific of the perception of the vocabulary with the motivated base.

Place of the experiment: the educational institution "Vitebsk Children's Speech Development Centre №2" Chkalov str., 28/4.

Test group: in the experiment were involved children of younger pupils (3-4 years), medium (4-5 years) and older (5-6 years) groups (80 people).

Material and methods. Methodology of experiment: children were offered 10 words with different degrees of expression of the internal form. They were asked to give the definition. The material is taken from the Ozhegov dictionary with the help of method of sheer selection [1].

Before the experiment the child was instructied as follows:

1. Listen to the word which I shall call carefully...
2. Think and tell me what it means...

Further, the child was asked to give the interpretation to 10 words. Children's answers are recorded in the forms, which are then written down to the table and analyzed in the conclusions.

Results and discussion. During the experiment the children were offered 3 groups of words. The first group - motivated words (*bilberry, stone bramble, russule*); the second - words with false motivation (*cloudberry, cynologist, bank, secretary*) and the third - abstract vocabulary (*disinterest, promoter, composure*).

Each child tried to explain the meaning of this words. All answers were tabulated. It included the full name of the child, under each of the offered words were marked special symbols:

"+" - the correct lexical meaning of the word

"+" – stressing the word meaning based on the internal form

- not true, no answer

All the words were counted: with the correct interpretation of the lexical meaning; with the stressing internal form. Further the number of wrong answers or no were counted. The total number of correct answers was summed up and the percentage of the total number of test reactions.

In most cases in the words of the first group (motivated words: *bilberry, stone bramble, russule)* children identified their lexical meaning. In their answers they pointed out perceptive features, for example: color (*bilberry* - Osipov M.: "black berry"); components (*stone bramble* - Hodyuchenko P.: "berry with a stone"). The most obvious is the words for children was *bilberry*. Of the 80children: 76 (95%) identified the lexical meaning correctly (Budkevich U.: "is a berry"), one child (1%) - identified the meaning of the word based on the internal (Mikhailov N.: "with the time, it becomes black and bad"), 3 (4%) - no answer. In this group some children had difficulty with the word *stone bramble*: 49% said that it is "a berry with a stone," 41% said "do not know", 10% relied on the internal form (Zavgarodnyaya K.: "she is called so because of the stone "). The word *russule* got the following meaning: 79% answered with the lexical meaning (Voronkov T.: "it is a mushroom"), 21% - gave no definition (Babydova D.: "this a hedgehog").

The most interesting answers were those of the second group (words with false motivation: *cloudberry, cynologist, bank, secretary*). Most children defined words basing on the internal form isolating the roots the words (*bank* - Kokovkin I.: "this a jar", *cloudberry* - Trapezina I.: "ice cream because it is cold")[1]. The word *cloudberry* 59 persons (74%) associated with the word *ice cream*; the word *cynologist* by 38 children (48%) **-** with the word *cinema*[2]; *secretary* **-** 37 children (46%) **-** with the word *secret*.

The third group of words (words abstract vocabulary: *disinterest*, *promoter*, *composure*) was the most difficult for children. They did not hear these words and did not know their lexical meaning. In this regard dominated answers were "do not know" (141 answers - 59%) and 83 answers (35%) the meaning of which was determined on base of the internal form of the word (disinterest**-** Ivanov G.: "it is a trough"; *composure* **-** Yakovleva P.: "when it is very cold", Anyuhovsky V.: " the cold blood"; *promoter* **-** Denisenko A.: "master").

As a results of this experiment we can conclude that children have orientation on the internal form of the word, for example: *russule* **-** Kozlov E.: "it is mushroom, can be eaten raw"; *stone bramble* **-** Ivanov K.: "it has a stone"; *bilberry* **-** Melnikov O.: "black berry".

Conclusion. The words of the first group are the most clear for the children. In 30% of cases **-** children have learned well the lexical meaning of the words, they mentioned the lexical meaning of these words. The results obtained for the second group of words prove the creative thinking and imagination of the children are developed on an insufficient level, they stress the image (the internal form of the word) **-** an average of 33%, which is quite a low figure.

In this regard we believe it is necessary to organize a targeted work with preschoolers (sensitive period for development of speech) to develop imaginative thinking and imagination, and more efficient enrichment of the vocabulary of the child through a variety of exercises and techniques of game situations.

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ESPECIALLY THE FEAR AND ANXIETY IN CHILDREN WIYH MULTIPLE DISABILITES

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Fears - that feeling of anxiety or anxiety that occurs in response to a real or imagined threat to the life or well-being [1].

Studies of different approaches to the study of individual students with early infantile autism engaged I.I.Mamaychuk, I.E.Guseva, E.R.Baenskaya, S.D.Zabramnaya, M.Ratter, L.N. Demyanchuk, E.S. Ivanov, O.S. Nicholas, I.I. Mamai, K.S. Lebedynska, L.M.Shipitsina, S.A.Rozenblyum, N.G.Manelis, L.S.Pechnikova, M.M.Libling et al.

In children with autism, there is a high intensity of fear and increased fixation on them. Fears in children with autism can be caused by both internal and external faktorami.Strahi that appear in children with autism at an early age, different non-specific, diffuse and often do not have a reason, arising on a background of general anxiety and worry at the same time objects fear in children with autism very much [2].

Speaking about such a complex developmental disability as children with autism, it should be understood that overcoming or reducing the fear may not be a separate special task psychological care to the child.

The need to study the problems especially the fear and anxiety in children with multiple disabilities (intellectual impairment and early infantile autism) is due to its importance in the social and practical aspects, as well as the lack of development in the scientific and theoretical and methodical plans.

Material and methods. The purpose of the pilot study is to determine the characteristics of fear and anxiety in children with infantile autism and intellectual disabilities. This study took place in March and April 2014 on the basis of educational establishment "Vitebsk State supporting school number 26" (primary school, 10 people) and SEI "Vitebsk City Centre remedial training and rehabilitation" (pre-school group, primary and high school; 8 people).

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[1] (*moroshka – «moroshko» in Russian)*
[2] (cynologist – « kino» *in Russian*)

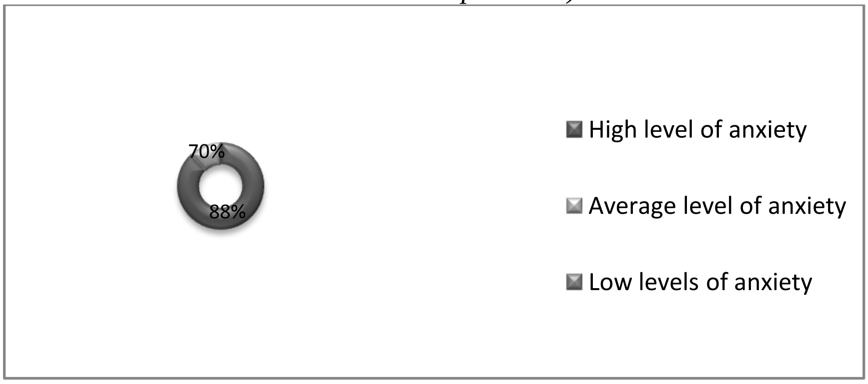
As an experimental study of fears of children with infantile autism were used: "Test Anxiety" (Temmpl R. Amen V., M. Dorca). "Methods of diagnosis of childhood fears" (A.I.Zaharov), talk with parents and teachers.

Results and discussion. A study of the level of anxiety in children with multiple disabilities (early infantile autism and intellectual impairment) showed that 88% of students have a high level of anxiety, 12% have the average level of anxiety.

It should be noted that the high level of anxiety is especially pronounced in certain situations involving relationships with adults

Figure 1

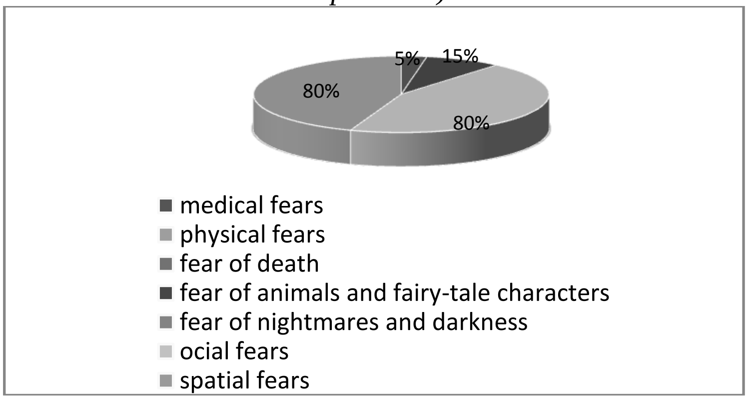
Indicators of the level of anxiety in children with multiple disabilities (early infantile autism and intellectual impairment)



A study of fears in children with infantile autism showed that 80% of the prevailing social fears and space, 15% is dominated by fear of animals and fairy-tale characters and 5% - is dominated by health insurance.

Figure 2

Prevailing fears in children with multiple disabilities (early infantile autism and intellectual impairment)



Conclusion. Thus, we can conclude that the majority of children with multiple disabilities (EIA and intellectual impairment) has a high level of anxiety and dominated social and spatial fears.

Specificity of fears of a child with infantile autism is not so much in their content, but in their intensity and strong fixation.

Summing ityoj From all this we can conclude that the autistic child needs constant, skilled medical - psychological and educational support.

Overcoming anxiety and fear is one of the most important tasks of correction. It is important to determine the availability of a child with autism level of interaction with the environment, because it will help to build an integrated methodology and content of remedial developmental impact.

All this will help your child to socialize and integrate into society. As a result, improvement of quality of life is achieved by autistic children.

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COMMUNICATIVE COMPETENCE FORMATION OF A FUTURE TEACHER OF MUSIC (THEORETICAL BASIS AND PEDAGOGICAL CONDITIONS)

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The necessity in amendments and additions to the traditional musical-pedagogical education is conditioned by contemporary requirements to its standard and quality. In professional activity the teacher of music should ensure positive creative atmosphere, freedom of expression of a tutee, should facilitate successful fulfillment of educational music activity, should avoid or block emotional tension, work efficiency decrease, psychological barriers between the subjects of educational process. Communicative interaction is aimed at satisfying musical and esthetical needs of tutees. Favorable interaction between teacher and tutees, their positive communication with music provide their personality security, experience of emotional welfare and awareness of music art value. Therefore, the problem of communicative competence formation of a future music teacher at present looks actual and is respondent to the vital tasks of contemporary education in the sphere of musical art [1]. For successful formation of music teacher communicative competence some definite pedagogical conditions are necessary.

Material and methods. Revelation of conditions, in which formation of a music teacher occurs and his competences are formed, required special (theoretical and experimental) investigation of this process. We have worked out the theoretical basis of the process of communicative competence formation of a future music teacher. Resting upon the views of N.A. Kolesnikova [2], E.I. Isaev, (who defines professional communicative competence as an a priori set social requirement (norm) to educational preparation, expressed as an aggregate of interconnected sense orientations, knowledge, skills and experience of tutees in respect to a definite set of real objects, necessary for realizing socially meaningful professional activity, like possession of the subject of the appropriate competence, including his personal attitude to it and to activity object) we have stated the notion of communicative competence of a music teacher, grounded the notion of communicative field as the context of communicative situation, in which music is interpreted resting upon the professional pedagogical thinking of musical disciplines teacher.

The following investigation methods were used in the work: *theoretical*: analysis of the problem of communicative competence formation of a music teacher, analysis of pedagogical documentation, normative documents; projecting, modeling; *praxiological*: surveys (questionnaires, talks); *observational* (direct, indirect observations); *praxiometrical* (analysis of activity products); *experimental*: stating and forming experiments; *statistical* methods of experimental material processing (ranging, correlation coefficients).

Results and discussion. We have developed and experimentally tested pedagogical conditions of communicative competence formation of a future music teacher. Also we've systematized methods and ways of forming communicative competence of a future music teacher (methods of analyzing and managing communicative situation; methods of musical professional communication recognition; methods of interaction between subjects of musical educational process in communicative situations etc.)

On the basis theoretical data and practical application of author's methods it was proven, that successful formation of communicative competence of a music teacher is realized under the following pedagogical conditions:

a) optimization of communicative aspect of musical educational environment;
b) constant monitoring of development level of professional communicative features and skills among student;
c) intensification of reflection of students' personal experience via a number of methods (diagnostic and developing tasks, exercises, trainings);
d) individualization of means of pedagogical impact and interaction;
e) systematization of teacher's communicative activity on the basis author's model of communicative competence formation of a music teacher.

The students of experimental groups, the educational process of which was formed on the basis of the developed pedagogical conditions, demonstrated very good knowledge of theoretical basics of pedagogical communication; means of verbal and non-verbal communication; basic principles of public speech preparation; principles of pedagogical communication organization within the frames of musical pedagogical process. They also demonstrated high level of the following skills: reliance on personal style of pedagogical interaction considering personal peculiarities; selection of appropriate schemes of pedagogical communication process organization; realization of acquired methods in practice.

Conclusion. Hereby, our investigation has proved that the process of communicative competence formation of a future music teacher will successfully flow, resting on the theoretical basics of communicative interaction in musical pedagogical process, on specially developed author's methodic, and respecting the above mentioned pedagogical conditions.

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CHOREOGRAPHY IN TEACHING RYTHMIC GYMNASTICS TO PRIMARY SCHOOL CHILDREN

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The need for this research and its up-to-date nature are determined by the fact that the current requirements to the degree of mastery in rhythmic gymnastics have significantly increased and there is no specialized system of choreographic training for children in general and primary school children in particular. Modern ideas and knowledge about the development of choreographic abilities of girls, aged 6-7, give grounds for developing a scientifically justified system of training for this age category. A training program like that can be of equal practical value both to choreographers for selecting materials for classes and to gymnastics coaches for the maximum efficiency of their collaboration in the system "coach-choreographer".

Choreography is an integral part of training sportsmen as it fosters the culture of movement, artistry, music awareness and increases the level of fitness of the trainees. Due to the fact that it helps to maintain high standards of movement culture and enables gymnasts to perform their routines with ease and grace so that the amplitude of moves, artistry and expressiveness of their performance can be fully appreciated, choreography is widely recognized as one of the major means of training elite athletes.

The article aims at disclosing the importance of choreography in the process of training rhythmic gymnasts on the basis of the author's choreographic program for primary school children.

Material and methods. The school of rhythmic gymnastics is characterized by a high level of mastery, a wide range of styles and integrity of choreographed routines, which can only be achieved with the help of choreographic schooling. But this kind of training for rhythmic gymnasts has a number of specific features determined by the differences in tasks that gymnasts and ballet dancers have to complete and their different objectives. The role of choreographic training in ballet can't be overestimated, it is fundamental, whereas for gymnasts it is only one of the aspects of their training on the way to high sports achievements.

Practical experience of coaching sportsmen shows very convincingly that choreographic means can be of use only on condition that the coach has good working knowledge of classical dance and the training techniques used there and can adapt them to gymnastics or any other sport. And even though in gymnastics choreographic training is clearly based on classical ballet, it has to be closely coordinated with other aspects of training gymnasts [3, p. 3].

It should also be taken into consideration that there is a typical problem choreographers have to face in sport – time issues. While dance school students only start their career in the theatre at the age of 18, their peers in gymnastics are already heading for high achievements in the world of elite sport. This time deficiency and a wide range of movements (manipulating different types of apparatus) make choreography classes for gymnasts a particularly challenging task as far as teaching methods, tools and materials are concerned.

Every choreography class should be of practical use to the trainees and be pedagogically justified, which means setting clear goals (technical, psychological, etc.) and doing what it takes to achieve them without making a flashy overall impression or effect of the exercise a priority.

In a way, choreography in gymnastics seems to be closer to male choreography, at least as far as the choice of elements is concerned (e.g. the diversity and complexity of leaps, balances and pivots), although it definitely abides by the plastic laws of female choreography [2, p. 6].

The structure of a choreography lesson in gymnastics depends on the current teaching goals and objectives. Both elementary and elite athletes need to invest a lot of time and effort in their choreographic training [2, p. 40].

In Belarus choreographic classes within the system of additional education are currently organized in accordance with choreographic programs. Some of them are approved by the Ministry of Education and others are created by professionals for use in a particular educational establishment. Most choreographers working with children who do rhythmic gymnastics either use programs for dance groups or rather formally compiled programs. In the latter case choreographers need to be quite creative and make the most of their first-hand experience in applying various techniques and methods to the teaching process.

Results and discussion. Given what was said above, there is a clear need to create a special program for primary school children doing rhythmic gymnastics with all the due attention to the differences in objectives in rhythmic gymnastics and choreography. The program meets all the modern requirements, which makes it possible to plan individual development of every child within the humanistic teaching theory of “subject-subject” relations between the teacher and the child. The author of this program used “ The ABC of Choreography” by Baryshnikova [1] as a methodological basis for this work and suggests using dancing training as the main form of teaching children in order to ensure systematic and versatile upbringing of children and gradual development of their choreographic abilities within the limits of the sport they have chosen.

The program primarily deals with the basics of moving to music and includes different types of walking and dancing, exercises and games enhancing flexibility, kinesthetic, spatial and music awareness and coordination, all of which prepare children for performing. Elements of theatrical and folk dance are used in order to activate children’s imagination and develop their artistic skills.

In the learning process children pursue the elegance of the positions of the upper body, upper and lower limbs and pointed toes, work on the flexibility of limbs, increase their muscle strength and learn to follow injury-prevention rules. The program also teaches them to coordinate movement to music, develops a sense of rhythm and enriches their perception of music.

The program consists of the following chapters: rythmics, moving to music and emotional expressiveness, the basics of choreography, conditioning exercises, elements of classical dance, elements of folk dance, elements of historic and ballroom dance, children’s dance, groundwork gymnastics with elements of acrobatics.

The elements of classical, folk, ballroom and modern dance were carefully chosen to match the specific characteristics of the primary school age group so that the trainees could successfully cope with them. Dancing techniques help the formation of the correct posture and positions of the upper body, the upper and lower limbs and the head, raise the fitness level, improve coordination and spatial awareness, train the breathing system and enrich emotions.

The novelty of this program is seen in the introduction of the elements of European and Latin American dance and groundwork gymnastics with elements of acrobatics into the training process.

Conclusion. Choreography is one of the major means of developing creativity, in a broader sense – a tool for the esthetic upbringing of children as it is choreography classes that create a great opportunity for children to come in close contact with art. The children who go through this type of schooling develop a sense of beauty and acquire a rare skill of communicating their emotions, moods and feelings through movement.

As it has already been stated above, the objectives of choreography and gymnastics differ a lot, which causes a number of problems in applying choreographic techniques to gymnastics. Consequently, the teaching process needs optimizing. The program described in this article has been tried and tested on a group of primary school children who displayed during their performances an ability to blend strength with artistry and expressiveness on a significantly higher level compared to the children of the same age who didn’t have a choreographic background. And this is why the author of this program hopes it can be helpful for optimizing the process of training young gymnasts, forming a well-rounded personality and promoting a healthy life style.

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USING THE PROJECT METHOD AT ENGLISH LESSONS IN PRIMARY SCHOOL

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Modernization of modern education entailed the need to find new approaches to foreign languages teaching. Appeal to non-traditional forms of teaching suggests a teacher's influence on the activities of each pupil and his involvement in active teaching and practice activity. One of the most organic and effective forms of teaching English is a project method. Method of the project is a complex training method that allows pupils to show independence in planning, organization and control of their activities**.**

Teacher plays a role of a project coordinator, an expert, an additional source of information. In project work, pupils are involved in to organized search educational-cognitive activity by a teacher. The teacher relies on existing capabilities, the ability of children to creative thinking.

This article is urgent at the present time, because the project method is a relatively new method in the teaching of English, which promotes active pupils' involvement in different types of practice and allows to develop their creativity and individual abilities.

The aim of the article is to develop some guidelines for project activities using.

Material and methods. Material for study was the analysis of the process of teaching English with using the project method for pupils of 3-4 forms.

Method of research is the analysis of linguistic and methodological literature; study and analysis of teachers' experience. The research is exploratory, predictive, it's conducted on the basis of primary school "Secondary school № 23 of Vitebsk."

Results and discussion. Using project method is urgent in modern education. The project method allows to create research creative atmosphere at foreign language lessons where every pupil is involved in an active creative and cognitive process based on the methodology of cooperation. In accordance with a feature of the dominant method in the project, the following types of projects can be identified: research, creative, role-playing, information, practice-oriented. In this article we consider the role-playing-game projects at English lessons in primary school.

Role-playing-game projects, as a rule, have not detailed structure of the joint participants' activities, as the only structure is planned and remains open until the end of the project. They are held in different forms: in the form of performance or in the form of open class. Participants play certain roles which are conditioned by the nature and by the content of the project, and so the feature of the problem being addressed. These may be literary characters or fictional characters that mimic social or business relationships, which complicates the situation, invented by the participants. The results of these projects can be scheduled at the beginning of the project, and can be manifested only by its end. The level of creativity is very high here, but the dominant activity is still remains a role-playing-game. We must pay attention to the purpose of the project, the subject of information search, information sources(media, databases, including electronic, interviews, questionnaires, including foreign partners, etc). Ways of information processing (analysis, synthesis, comparison with known facts, reasoned conclusions) are very important; result of information search (article, annotation, abstract, report, video, etc.); presentation (publication, the discussion at teleconference, etc.). Such projects are often integrated into research projects and become an integral part or module of them [1].

We can confirm mentioned above with examples of using role-playing projects on the elementary stage of training:

- Form 3, unit "My Family". In studying this theme, pupils of the third-class are introduced with family members and generalize their linguistic experience by the previous themes. In subsequent lessons they learn to apply them in practice, allowing by the conclusion of this unit fix and generalize acquired pupils' knowledge and skills. It is advisable on the stage of generalization to use role-play situation "Lost in the park". Previously allocated roles, prepared costumes and decorated class. Actors: policeman, passersby, children who are lost. Previously costumes are created (selected) for the characters of the script: policeman, girls and boys, costumes for passersby. Requisites for decoration of class: simulation of the park, the image of trees, construction of bench with using chairs, toy. The action takes place in the park, children walk and suddenly see a stranger with a dog, the kids play with the dog, running after her, carried away by the game the kids get lost in the park. Children cry and passers call for help a policeman to help the children. The policeman interviewed each of the children: What is your name? How old are you? Have you got a mum, a dad? What's your phone number? etc. Children answer questions. The policeman helps them get out from this situation [2].

- Form 4, unit "The pet of the family". In studying this theme, pupils of the fourth-class are introduced with names of different animals**,** give a characterization of their habits and appearance, talk about their favorite kind of food, using the experience and knowledge from previous lessons. It is advisable on the stage of generalization to use role-play situation "At the pet shop". Assign roles, prepared costumes, decorated class in accordance with the theme. Actors: buyer, seller, animals (parrots, mouse, rat, snake, turtle, fish, etc). Previously costumes are created (selected) for the characters of the theatrical production: seller, buyer, animal costumes. Requisites for decoration of class: construction of store shelves using desks and chairs, imitation of cash, money, price tags. The action takes place at the pet shop, the seller sees a buyer who wants to choose a pet, and offers to him his help. The buyer is exploring of all animals and prices on them in the pet shop. The seller constantly asks questions: Do you want to buy parrots, dogs, turtles, etc). We can introduce the following method: the animals which attract buyer's attention talk about themselves. The buyer carefully listens to them and makes his choice [3].

In the process of these games children actively, in a relaxed form, use the vocabulary by the studied themes.

Conclusion. Project method is one of the most popular in the in early teaching a foreign language to children. Its application contributes to the development and individualization of the child's personality, formation of motivation to obtain knowledge by pupils. Due to the destructive nature of project-based learning junior pupils not only acquire knowledge of foreign language, but also develop their creative potential. The main teacher's task is to interest a child to engage in the atmosphere of activity, and then the result of a learning process will be more significant.

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FORMS AND METHODS OF WORK ON FORMATION SPEECH ETIQUETTE AT THE RUSSIAN LANGUAGE LESSONS

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The aim of using diverse and fascinating forms of work at lessons by a teacher is to make lessons different, not alike. Taking this fact into consideration a teacher tries different forms of conducting a lesson, making it as much exiting as possible by implying different game moments. They may be subject-role and theatrical games, all kinds of gaming and life situations, entertaining stories and creative conversations, and also constant training, consolidation and practical application of the rules and regulations of speech etiquette for children.

Material and methods. It’s a game that allows to organize the exercise children in forming the skills of speech etiquette more effectively. Firstly it’s necessary to discuss the mode of the game with children, paying attention to the rules observed earlier. This indicates what is already learned and what is left to pay attention to. The rules are being discussed and explained while communicating with children by the use of literary texts, such as fables, stories, poems. It's also possible to act out some of them. The teacher strikes a balance [3, p. 18].

A younger pupil should have to understand the opportunities of the language, so called means to express politeness. Training formulas of speech etiquette in primary school involves the formation of pupils' knowledge in the sphere of verbal expression of politeness in the Russian language. It also teaches how to correlate verbal expression with behavioral. In order to master these important etiquette skills it's necessary to create speech situations, as well as complication of dialogues on the following topics: 'On the bus', 'With friends after school', 'At home in the evening', "At the lesson", "In the shop". Such speech situations will help children to master the etiquette skills, choose appropriate forms of greeting, farewell and also use the forms of pronouns, verbs, signs of politeness properly. A teacher focuses on communication tone, intonation, gestures, demeanor. This is achieved in the course of explanation, consolidation and using speech formulas of speech etiquette in daily life. Literary examples are also of great help.

Usually a child at the age of 6 or 7 refers to a stranger by using the pronoun 'You'. That means that in many cases(but not, certainly, all) a first-former chooses correct, appropriate to the circumstances formula of speech etiquette.

Acting out speech situations at the Russian language lessons moulds the culture of verbal communication not only with adults but also with their peers. Therefore, in working with children it is advisable to play speech situation to develop the culture of verbal behavior.

'In the store'

One elects a salesman, a customer and a cashier among the pupils. A customer enters the shop, speaks politely to the salesman, thanks him, because all the goods are shown to him. Then he communicates with the cashier.

'Words-Greeting'

Situation: You enter the classroom, and see that the teacher is talking to someone from the parents. How will you greet them? Will you say, 'Hello, Helena!'? How to say hello?

'School Library'

You want to become a member of the library community. Ask for an interesting book. Do not forget the words that can help you with your request. Tell polite words, that should be said before leaving.

Results and discussion. As a result, children learn the six rules that allow you to express respect for the other person:

Rule 1. Be considerate to others.

Rule 2. Memorize the names of the interlocutors.

Rule 3. Use the treatment for them suitably.

Rule 4. Be polite and friendly. Encourage others to talk about themselves.

Rule 5. Trust the interlocutor and tell the truth.

Rule 6. Refrain from rude criticism.

It worth remembering that a speech etiquette of the teacher, the observation of its norms are of great importance. A teacher should be kind, polite, responsive and attentive to children. It's not enough to speak about polite formulas and speech etiquette. The upbringing of speech politeness means, first of all, respect for other people, as well as kindness, sympathy and charity. One of the rules of speech etiquette reads: 'Ask little, talk a little, listen more' [2, p. 108].

Conclusion. While working with children of this age, it's necessary to take into account the fact that training speech etiquette must be adequate to different situations they often find themselves in, such as: at school, out-of-doors, in public places. Specific rules will be repeated necessarily. It is obligatory in order to teach a child to exercise the same rule in different situations [1, p. 47].

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ABILITY OF JUNIOR PUPILS TO SUMMARIZE: THE RESULTS OF THIS RESEARCH

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The special attention must be spared to research of thinking a junior school age, it is related with the individual features of learners' productive thinking. More or less thinking steadily shows up at mastering of different educational material and determines its success. These features wereresearched ina wide age's range (with II on VI class). It was determined that the age and knowledge exert on the learners' productive thinking [1].In our opinion, the special attention must be spared to generalization, which is a selection of general, substantial in one or another class of objects, phenomenons. It is important that as a result of the generalization are common elements, which are in many objects and phenomenon.

Material and methods. As respondents of this research were learners of 3th the class of «The secondary school №46 Vitebsk». There were 23 learners in this research, among them 9 girls and 14 boys in age from 8 to 9 years. The middle age – 8,7 years. We used a test "Study of development of boolean operations among junior school children" [2], which consists of four subtests. The first subtest allowed to expose students' knowledge; the second subtest - an ability to classify; the third subtest allowed to expose an ability of learners of the third class togeneralize; the fourth subtest allowed to expose learners' ability topick up someanal ogies. We will say about some results of subtests "generalization" in more detailed plan.

Results and discussion. According to this subtest «generalization»,four girls (in age of8 years) showedhigh result. They collected 9 marks from 10, it says about a correct implementation of all offered tasks for relatively time'sshort interval. Five girls (9 years) also showed good results, about this subtest because they got 10 points. It is necessary to mark that learners easily made this proposed tasks, retaining an ability to name objects (about which were said in this task),using one word or whole combination. 13 boys (in age of 9 years) showed also a high result (10 points) in this subtest « generalization». They also easily and quickly executed with offered tasks. According to our research's results we can say, that girls and boys are capable independently, quickly to make this simple tasks, using one word or whole combination, about which were said in this task. The most important thing, in our opinion, is an ability to give different comments, explanations in a working process by learners of the third class.

Conclusion. This research will be useful for teachers, teachers-psychologists who work with children of junior school age, developing this psychical process, which can provide a cognition of object's, phenomenon's essence, and an essence of a person. Exactly, thinking allows to open something substantially new about world around us.

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STUDY OF THE DEVELOPMENT OF MEMORIAL ELEMENTARY SCHOOL CHILDREN WITH INTELLECTUAL DISABILITIES

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Memory - is Capturing, saving and playback man that was in his experience [2, p. 313]. Before psychological science the task of studying the mechanisms of imprinting information of how this information is stored in different periods of time, what happens to the memory trace during storage, are also studied types of memory [1]. The need to study the problem of memory in students with intellectual disabilities due to its importance in the social and practical aspects, as well as the lack of development in the scientific and theoretical and methodical plans.

Material and methods. The aim of this study was to determine the characteristics of mechanical and verbally - logical memory in primary school children with intellectual disabilities.

Experimental study conducted at the educational establishment "Vitebsk state special school number 26" in March 2014. The study involved 10 primary school students with mild intellectual deficiency. In accordance with the purpose of the study were conducted following diagnostic procedure: "10 words" (Luria) and "Indirect remembering" (Leontiev).

Results and discussion. Study mechanical memory produced by the procedure "10 words." As a result of the survey were as follows: junior high school students with intellectual disabilities in 60% of cases to 3-4 th repetition reproduce 40-48% of the words. For example, Nikita S. and W. Anton for the 3rd time reproduced the 5 words that differ from the playback level of normally developing students who are in the third repetition reproduce 9-10 words that percentage is 90-100%. Some of the subjects were not able to reproduce the word-th repetition 5-6, although previous attempts have been successful. Another feature any mechanical memory students with intellectual disabilities is the presence of word infusing. In 20% of cases seen such a feature, so, for example, Alex J. called the word "fire" and "bucket", which was not in the list of words, Cyril Z. called the word "word", which is also not offered to remember. These words were bringing-resistant: their reproduction was noted in repeated attempts to repetition. During the procedure it was possible to trace such a feature mechanical short-term memory, as a substitute for words. Thus, 20% of surveyed word "horse" replaced know the word "horse." For example, Olga K. 1-3 trying to call the word "horse", and then play back the words, it was not used at all.

In a study of mechanical long-term memory, a significant reduction in its volume. On average, children after an hour reproduced 3-4 words.

As a result, the data obtained during the procedure "Indirect memorization" following data were obtained: students of junior classes with intellectual disabilities on average remembered and reproduced 3-4 words using pictures. The choice of pictures to remember the children had adequate, but two of the subjects made a peculiar choice. So, Cyril Z. to the word "milk" took a picture "rake" and further said, is that painted the picture, and does not remember the word, and was not able to explain their choices. Bogdan B. the word "lunch" choose a picture "portfolio", but did not explain their choice and when the memories did not mention the word. It should also be noted that one of the ten surveyed could not correctly identify a single word, although the pictures were chosen appropriately. Mediated memorization has its specific features: children either could not fix (explain) logical connection between word and image, or these relations were perfunctory, were simple or monosyllabic. For example, Cyril Z. to remember the word "light" chose a picture of a "lamp" and gave the following explanation: - because it is wrong.

Conclusion. Thus, the younger students at a special school is better developed mechanical memory than verbal logic. Memorizing words with the help of visual aids, ie images, characterized by the fact that children are called words that were drawn, and not those who should remember. Identified specific characteristics of types of memory in primary school children with intellectual disabilities require uchèta in the educational process, and in the correctional and development work.

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APPROACHES TO THE DEVELOPMENT OF CHILDREN'S MEMORY WITH INTELLECTUAL DISABILITIES

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The problem of memory in children with intellectual disabilities in domestic and foreign psychological and pedagogical literature by: I.I. Mamaychuk, E.L. Indenbaum, A.N. Psychologists have identified domestic environment conducive to better memorize the material. They are shown to be dependent on the memory of the material delivered to the child tasks, their own activity (B.I. Pinsky, Zinchenko) and preliminary instructions (G.M. Dulnev)

Material and methods. Memory processes in individuals with intellectual disabilities have their own characteristics, due to the specifics of formation in developmental disabilities. So, in this category of students observed violations of the logical and mechanical memory, narrowed their volume. Failure observed in the processes of involuntary and voluntary memory, playback, and recall. All this causes learning difficulties and playing new knowledge obtained in the classroom at a special school, and requires teachers pathologists conduct systematic work on the development of memory and other mental processes.

Results and discussion. Mamaychuk I.I., given the characteristics of the memory of persons with intellectual disabilities, has identified the following important areas of psycho-correction memory:

- the formation of memory in the visual, auditory and tactile modalities;
- Development and indirect methods of associative memory objects during various activities: games, training, employment [2, p. 76].

When learning mnemonic action classification success is achieved if it is carried out with the theory of the formation of the gradual formation of mental actions P.Y. Halperin. The main stages of this work:

1. Step practical action. Children use the material - practical actions - are trained to lay out images in groups.
2. Step speech acts. After a preview picture child should tell which of them will carry it to one or a group.
3. Step mental action. At this stage, the distribution of images is carried out by groups of the child in mind, and then he calls the group.

When children learn to allocate to the charge brought certain material group relates each picture to a particular group or generalizing the image, select individual items, then go to the formation of the ability to use grouping in order to memorize. Levchenko I.Y. provides for the development of children's memory with intellectual disabilities the following tasks: to find the presented figures, among other items (baby show 4 - 5 items, then he should choose them from 8 - 10 subjects); remember the location of objects presented, and then say what has changed. It is recommended to spread patterns from memory, repeating the words, numbers, as well as to train deliberate memorization, learning techniques of memorization [3].

At a special school as a way of using memory management techniques of memorization, the content of which is as follows:

1. Reduction of material in the system, easy to remember and memorize.
2. To store the material was stored in the memory of a particular system, it is necessary to carry out some work on its content, i.e. to the studied text need to plan or outline, which forms a sort of "skeleton" of the presentation.
3. Then you can enjoy the assimilation of each part of the text, re-reading it and trying to immediately play the old.
4. Great importance to remember is the repetition of the material. (F.N. Gonobolin) [1].

Conclusion. Thus, the process of development and correction of memory is very complex and labor intensive, requires a rich variety of events and impressions lifestyle, emotional coloring memorized material, as well as adherence to the principles of successful memorization.

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THE SCHOOL MOTIVATIONOF THEBOYS(10-11 YEARS): DISCUSSIONOFTHE RESULTSOF THE RESEARCH

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Before teachers and psychologists during learning there is a problem of strengthening and development of learners' training motivation. It is important to learn this problem among the learners of the initial classes. At this age of children special psychological mechanismusually forms, which will help to make the process of self-realization and self-development in the future. Also this mechanism are useful for keeping learners' cognitive demand in school years, which can help them in their future; and necessary for people, who want to keep their wishes for getting new knowledge and such they can get pleasure from it.

Material and methods. Training motivation, according to A. K. Markova [1], determined by a number of factors, which are specific for an educational activity: the type of the educational system; the organization of the pedagogical process in the educational approval; some characteristics of a learner (gender, age, the level of intellectual development and abilities, the level of aspiration, self-esteem, the nature of the interaction with other learners); also personal characteristics of a teacher (especially a system of hisattitude to a learner, to teaching); the specifics of the subject. In "Questionnaire for the study of a school motivation" by N.G. Luskanova [2] was reflected the above factors characterizing the phenomenon of an educational motivation (the questionnaire). There are questions that help to identify the prevalence of cognitive motives (see A.K. Markova "The motivation of learning", which, analyzes the learning motivation (synonym educational motivation), focuses on the cognitive motives.

We can talk about positive and negative attitudes in schoolconsidering the levels of assessment results from the questionnaire by N.G.Luskanova. The same ideas can be traced in such work, as "The motivation exercises" by A.K. Markova. A.K. Markova analyzed of an educational motivation, as well as in the analysis of motivational teaching learners, focuses on the following types of attitude in teaching: negative, positive, neutral (for us the most important is the level of assessment results in the 15-19 points, which says about a positive attitude to school).

Results and discussion. In this research participated 20 people: 12 boys (60% of the total number learners in a class) and 8 girls (40% of the total number learners in a class). Age of respondents is 10-11 years old. From 12 boys of the 4th class 2 boys (16,7%) scored 25-30 points, that says about a high level of an educational activity; 3 boys (25%) scored 20-24 points (the attitude to oneself as a schoolboy almost was formed); 2 boys scored (16, 7%) 15 – 19 points (have a positive attitude to school, but the school attracts them more extracurricular parties); 3 boys (25%) scored 10 – 14 points (the attitude to oneself as a schoolboy was not formed); 2 boys (16,7%) scored less 10 points (have a negative attitude to school).

Thanks to thisconducted research about a school motivation, we found that girls (scored 25 – 30 points) are in two times more than boys. It says that this girls formed their attitude as schoolgirls better, they have higher educational activity. The girls(scored 20 – 24 points)are more on 12 % than boys. It saysthat in this class there are more girls who almost formed the attitude to themselves as schoolgirls than boys. The number of children who have positive relation to school, andmake more extracurricular school tasks are almost equally. The negative relation to school have 16,7% of boys, who scored less 10 points. We didn't find girls, who think about the school negatively.

It's important to study this phenomenon among some boys (10-11 years old) of junior classes, the age of which is 10 – 11 years old. It connects with the transition from primary school to secondary school. The study of the school motivation gives some information to teachers, teachers-psychologists, who work with this category of children about their attitudes to the educational process in all and also to individual subjects in particular. It helps at an early stage to adjust the work with students properly, and change their attitude to learning.

Conclusion. The problem of training motivation need in the further research for the opportunity of improvement of school lessons, overcoming exclusion of the schoolchildren, smoothing conflicts, improve performance in the classroom and others. Because the training motivation is a process, which starts, directs and supports attempts, directing on the implementation of training activities.

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ABOUT SOME FORMS OF WORK ON THE PHENOMENA OF POLYSEMY AT THE ELEMENTARY SCHOOL

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In the Russian language, as in other languages, there are words that have in their semantic structure not one, but several (two or more) lexical meanings. We call these polysemanticwords. They are opposed to monosemanticwords, that is having a single lexical meaning.

Relevance of research: vocabulary enriching, both active and passive is one of the main problems of Russian language teaching at the elementary school and is of great importance in fulfilling the task of general language training.

Goal: investigation of the process of mastering the elements of vocabulary at the elementary school.

Material and methods: the study of linguistic and methodological literature on the research topic; its comparative analysis; targeted monitoring of the educational process in the elementary grades, ascertaining experiment. The study was conducted in 4 "B" class of school № 8, Vitebsk. The goalof this work is to identify the level of knowledge of polysemantic words, words with figurative meaning and to identify them in the text. Analysis of the obtained data showed that students have a low level of knowledge about polysemantic words and have problems to identify them in the text as the pupilsmade a lot of mistakes. Thus, numerous mistakes of students indicate the need for serious and systematic work on polysemy.

Result and discussion. Through word students learn and understand the laws of language, get convinced of its accuracy, beauty, expression, richness and complexity. And that is why the structural component of the lesson, is so important, which is aimed to get acquainted with the word and to become aware of all its constituent values.

Teachers, teaching students Russian and improving their language skills are required:

a) to enrich the active vocabularyof the students as much as possible, taking into account their age opportunities;

b) to teach to use words in their most precise meaning;

c)tohelp students to avoid non-literary, colloquial dialect, archaic, obsolete words.[1, p. 35].

Organizing the work on the vocabulary and forming the concept of the polysemy Russian language teaching methods recommend tobase on the following key propositions:

1. The work on the vocabulary has a great educational value for the formation of the student's personality and outlook.

2. The content of the work on vocabularyis to explain the new, obscure words, analysis and specification of the meaning of already known words. [2, p. 15].

During the grammar lessons by explaining the new material new special terminology is usually introduced as well as other subjects also examples illustrating the rules of grammar, new words are introduced, enrichingstudents', vocabulary. Before dictation the teacher explains the unfamiliar words to the students; giving a homework assignment from the textbook, the teacher makes sure to check if everything is clear, that all the words in the text familiarto the students.

The work on the meaning of a word begins with its lexical meaning, ie., with its semantization. For this purpose, two main methods are used:

- the indication of the genus and species;

- appeal to the lexical meaning of the original word and the meaning of the formative morpheme.

The choise ofthe main methodof semantizationis determined by the structure of the word. If the word is non-derivative (for example, pine, melt, short), the first method is used; if the word is a derivative(for example, football, wooden), the second method is appropriate. The elements of these two methods can be combined.

For example, determining the meaning of the word thawed patch - "the place where the snow thawed and opened the earth," with the help of the first methodis explained thefollowing: a place where the snow has opened the earth, and with the help of the second is explained the link to the original word (thawed patch - thawed). Besides the main methods of semantization a number of additional methods is used.

One of them is a comparison of an unknown word with the familiar a synonym (orange - orange) or antonym (fancy - simple).

The use of visualization is to show the pattern, scheme or the object itself. The context gives a general idea either of the lexical meaning of the word (the fishermen went out to sea to catch tuna, that means some marine fish), or clarifies the meaning of the word the leaf of a tree.

The selection of paronymous words and the choice of wordsof the semantic subject also used to specify the lexical meaning of the word under interpretation.

Another very effective form of work on the polysemy of words areelements of the game or the game activity during Russian lessons. Here is an example of organizing and conducting this kind of work.

1 "Make a clearing"

Goal: to make the semantic field of polysemantic words and homonyms.

Visual material: pictures of objects, thenames of which are included in the semantic field of somepolysemantic words.

Children are given the pictures, corresponding with to two or three concepts. They lay them into 2-3 pieces, make "clearing", and then explain their choice, why these words were joined.

2 "A Parcel"

Goal: to train the ability the children to make semantic selection and selection of adequate words to the polysemantic concepts.

- Children, we received the parcel, but it has beenexposed to rain and all that has been written on the cover is washed. Away only a few words, left with their help, we will try to guess what they sent us. There are one word - "fresh". Let's pick up the words that we use with the word "fresh".

All the words named by children are classified and repeated to learn by heartby the children.

Conclusion. As you can see, polysemantic words of the Russian language are its lexical assets. Knowledge ofmany meanings of words, of the direct and figurative meaning, metaphor, metonymy is the basis for forming the communicative skills of children.

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THE PROBLEM OF SOCIETY'S PREPAREDNESS TO ACCEPT PEOPLE WITH INFANCY AUTISM

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According to literature sites, autism is a loss of reality, isolation from the world, absence or paradoxicality of reactions to external influences, passivity and vulnerability in contacts with surroundings [1, p. 6]. This is all about children with special pathology of neural system that makes troubles for them to form emotional contacts with the world and people around them. The fact that number of people with this pathology increases every year and possibility of society adaption isn't study well. So the number of researches should be increased. Therefore the objective of this study is detection of actual problems of Belarus connected with autism and analysis of society's preparedness to accept people with this syndrome [2, p. 43-44].

Material and methods. Analysis of statistical findings was produced to gain reliable information in some directions:

1. Analysis of statistics of people with autism in republic of Belarus in period from 2007 till 2012.
2. Analysis of attitude to integrated education of children with infancy autism (by means of questioning parents and teachers of these schools with integrated classes for children with autism).
3. Analysis of condition of world without fences for children with autism.

Results and discussion. According to statistical findings some results have been done. In examined period, the tendency of increasing number of people with this syndrome and increasing variability of manifestations of this pathology have been detected. Also some difficulties with diagnoses have been found because of prevalence of autism depending on classification. Autism prevalence is variable from 0.7 to 21.1 per 10 000 children (median = 5.2 per 10 000). Autistic disorders prevalence is 1-6 per 1 000. Autistic disorders (***Autism*** Spectrum Disorders, ASD) are continuum of cognitive and neuro-behavioral deviations, which includes pervasive developmental disorders and Asperger's syndrome (and autism) [3, p. 965-966]. Thereby there is not exact classification of this pathology nowadays. Also insufficient number of specialists working with this people category and inadequate fenceless environment should be mentioned.

Conclusion. There are some recommendations are presented to make functioning fenceless environment for people with autism:

1. Creation of special conditions for education and social adaptation for children with autism:
- Integral classes for children with autism:
- Specialists preparation for working with children with autism (speech pathologist, tutors);
- Organization of correctional and evolving environment.

2. Collaboration with population:
- Information for people about this problem;
- Collaboration with parents of children with normal development that study in integrated class;
- Collaboration with children with normal development that study in integrated community.

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ROLE OF PLAYING COMPLEX EXERCISES ON LESSONS OF MATHEMATICS IN ASPECT OF JUNIOR SCHOOL CHILDREN HEALTH PRESERVATION

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One of the priorities of the functioning of educational institutions in our country is *to ensure the health of students*, which is regulated by Code of the Republic of Belarus on education (Art. 41). Determination of the optimal training load, the mode of training sessions, creating of conditions for promoting and teaching healthy lifestyle skills of students are the basic criteria of the educational process in the aspect of health preservation [1, p. 46].

The purpose of research is identifying the role of integrated gaming exercises in Mathematics lessons in the aspect of health preservation of primary school students.

Material and methods. On the basis of the study of normative documents, programs in mathematics for primary schools, scientific and methodological literature and the products of the activities of the students for implement of research such methods as a theoretical analysis of the literature, discussion, questioning, observation, generalization and systematization were used.

Results and discussion. In the practical training of future teachers a meaning of no little interest is spared the questions of organization and conduct of mathematics lessons in primary school, according to the principles of health saving pedagogy, main of which is the principle of doing no harm.

The problem of preventing from harmful effects of the factors on the health of students, connected with the conducting of the lesson, requires specific attention (voltage of view, lack of exercise, etc.). Its solution involves *the use of special exercises, techniques, relieve physical and mental stress, physical and dynamic pause* are widely offered by national periodicals. However, all these exercises should be carried out in a complex game and have the playing direction because playing activity is predominant in the early school years.

The result of questioning of 30 primary school teachers showed:

– 20% of respondents could name only 2-3 texts for having a rest which most frequently are performed in the classroom;
– 16% believe that "all sorts of exercises – this is wasted time, which in some cases is not enough to study complex topics. ,,Certainly, such a position does not correspond to the requirements of the qualifying characteristics of a modern teacher who must use methods and techniques, promoting to the healthy fortification of the students in their practice technologies”;
– 37% of teachers have about 10-12 dynamic pauses in their arsenal and they are convinced that the variety of special exercises is not important, and a health effect is important that they should bring children;
– 27% of the surveyed teachers did not have difficulty in choosing dynamic pauses because teachers are the authors of their own semantic content of the gaming complex exercise. Thus, solving the problem of "scarcity text content" for ways of the relief of physical and mental stress of children, a number of teachers' creative approach to solving this problem.

We consider in more detail the specifics of applications of integrated gaming exercises of the creative nature in mathematics lessons, the most popular of which are dynamic pauses.

Dynamic pause – a pause in the learning activity filled with various kinds of the motor activity and designed to prevent fatigue and reduce the efficiency of junior schoolchildren. With the development of the motor skills which are closely connected with the pronunciation of sounds, so it is important to use dynamic pauses between words, poems on different topics.

In turn, the dynamic pauses include activities for rest, short pauses, the last of which should be held on the 10th and 30th minutes of the lesson according to the opinion of some scientists. The duration of it is 10-20 seconds. During the first break relaxation pause the exercises for the eyes are typically used, the speech warming-up, finger and breathing exercises that promote the development of fine motor skills, articulation skills of proper breathing, strengthen eye muscles. During the second break pause it’s advisably to conduct the visual exercises, the psychological pause (to normalize the emotional tone of the students, the development of the imagination) and the relaxation (for removal of emotional stress in children) [2, p.169].

Activities for rest – short series (1–1.5 min.) of exercise used for outdoor activities in the classroom, which takes 20–25 minutes of the lesson and allows activating the students’ attention, improve the ability to perceive the educational material and to reduce the negative impact of monotonous working posture.

For example, when acquaintance of the students with the concepts of "right", "left", we can recommend this exercise:

This is – a *right* hand, this is – a *left* hand.
Right – noisy oakwood, *left* – fast river.
We turned around and here was the opposite:
Left – noisy oakwood, *right* – fast river.
Could my *left* hand become *right*?

During the finger gymnastics is recommended to change from workout fingers and palms to massage of them in mathematics lessons, so choose exercises on grinding and static stress that give your fingers full-fledged rest and develop their agility, mobility, and funny poems help students to get rid of moral tension.

Hedgehog stomped along the path and carried mushrooms in a basket.
To count the mushrooms you need to bend your fingers.

(At first children take turns fingers on the left hand then to the right. At the end of the exercise they should have the hands to be compressed into fists).

The highest efficiency is achieved by dynamic pauses when their form and content are different. The students from schools № 2, 21 consider that it's preferable to dance or do rhythmic exercises listening to the music of popular children's songs. Younger students like to imitate the "who" or "what" they like. Therefore, children's cartoon characters or the songs are in high demand among children's audience as participants of the virtual dance floor.

At present electronic exercises for eyes are used by teachers actively with the help of multimedia (about 2-3 minutes). Under the musical accompaniment eyes must follow the moving objects (left, right, up, down, rotate to the side).

Conclusion. Thus, skillful selection and repeated inclusion structure of the lesson of the relevant gaming movements, accompanied by speech, promote the raise of students' interest in learning materials, render them positive complex effect, help to maintain and improve health. Moreover, the knowledge and application of methods and techniques those allow retaining the health of a child during his years of study at school – one of the most important components of the professional competence of the modern teacher.

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A LEARNER-CENTERED APPROACH IN PROFESSIONAL VOCAL TRAINING OF FUTURE TEACHER OF MUSIC

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Music education is an important component of musical culture of the society. It transfers the accumulated musical and creative experience from previous generations, the development of personality by means of musical art, enriching the spiritual potential of the society.

Determinant for the effectiveness of music education and upbringing of the younger generation in the national school of the Republic of Belarus is the professional preparation of music teachers. The core of professionalism and methodological training of teachers, which ties together his psycho-pedagogical and special musical skills.

The formation of vocal and performing skills, training vocal performance is one of the components of the process of professional preparation of music teachers. As obtained in the process of learning music-listening experience, and the experience of vocal art of practical importance, not only for the successful acquisition of the performing technique of singing, but also allow the future music teacher to acquire skills relevant to their future musical-pedagogical activity. Conceptual framework developed on the basis of personality-based and individual approaches.

The purpose of the study – the theoretical basis and development of system of formation of vocal and performing skills of future teachers of music.

Material and methods. The methodological basis of the study consisted of basic psycho-pedagogical theories and concepts about the general and pedagogical innovation and personality-oriented education (B. A. Slastenin, I. J. Yakimanskaya and others), the specificity of training teachers of music (E. B. Abdulin, O. A. Apraksina, B. C. Asafiev, D. B. Kabalevsky and others).

Used the following research methods:

- analysis of psycho-pedagogical, methodological, music literature on the topic;

- observation and study of the educational process and the analysis of practical activities teachers at the pedagogical faculty of the VSU named after P. M. Masherov; supervision of students in the specialty "Musical art" in order to identify their motivation, interest, and enthusiasm classes, value orientations, definitions and determination musical skills;

- pedagogical experiment (stating that form control) in order to check the efficiency of the developed system the formation of vocal and performing skills of future teachers of music based on personality-oriented approach.

The reliability and validity of scientific research results are provided based on current research in pedagogy, philosophy and psychology of education on advanced domestic and foreign experience in the professional preparation of students, quite a long time testing and implementation of the main provisions of the studies in the training of students majoring in Musical art, the use of complex methods of theoretical and empirical level, the relevant goals, objectives, object, subject and logic of experimental work, mathematical processing of the data.

Scientific novelty of the research is that justified and implemented student-centered approach in the preparation of music teachers. The core technology of musical-pedagogical process is student-oriented pedagogical interaction of teacher and students carried out taking into account individual-typological characteristics of students, their level of General and musical training, values and future aspirations.

Results and discussion. The content of music-pedagogical process is determined by the programs developed, adopted and implemented in educational institutions engaged in musical training and education. Content is the process of transmission and assimilation of theoretical and practical knowledge in the field of music, the mastery of which allows the younger generations to rise to the creative level of implementation of practical kinds of musical activity and self-actualize in accordance with personal and social goals and ideals. The content of the activity systematically in terms of presenting information reflecting the system of musical art, and in terms of mastering the complex musical skill [1, p.327].

In educational programs in accordance with the educational standards of higher pedagogical education formulated the general requirements for training of music education:

• formation and development of professional competence, allowing you to combine academic, professional, social and personal competencies to solve problems in the field of professional and social activities;

• professional and personal development of the teacher;

• formation of professional competence, which allows to teach the art of music.

Requirements of the Educational standard to determine the level of training of students with at least a secondary education [2, p.4-5]. On this basis, in the same academic year students with a variety of pre-University training: graduates of the College of music, colleges of arts, teacher training colleges and teacher training colleges, graduates of the school.

This means that the modern requirements of higher professional pedagogical education lead to the need for special training of the future teachers with the use of appropriate technology. This involves the implementation of a learner-centered approach to education implies a focus on training, education and development of all pupils on the basis of

• their individual age, physiological, psychological, intellectual features;

•educational needs,

• orientation on different levels of complexity of program material,

• the selection of groups of students on the knowledge, abilities;

• the distribution of students according to their abilities and professional orientation;

The selected approach specify the following principles:

• the principle of differentiation is the selection of groups of students based on external (or rather, mixed) differentiation: the knowledge, abilities, type of educational institution;

• the principle of individualization - the distribution of students in homogeneous groups: achievement, aptitude, social (professional) orientation.

Conclusion. The developed system is the formation of vocal and performing skills of future teachers of music is a system of presenting educational material in strict logic from simple to complex with further in-depth study of specific areas (taking into account the individual characteristics of the student). In the algorithm training sessions include: psychological preparation (teaching, suggestion); singing (exercises); work on performance techniques (tehnologic job guidance and training materials); a multi-stage work on a vocal work (listening, analysis of musical language, the work of interpretation, learning musical and literary texts, practicing by repeating the disclosure of the musical image in execution).

Experimental verification of the proposed system proves its effectiveness improved performance vocal works in the classroom with a variety of final forms of control.

The study confirms that the formation of vocal and performing skills of future teachers of music includes:

• implementation of student-oriented, productive-effective, technically-driven, cognitive, sensory, creative, developmental, artistic, educational, spiritual and formative approaches that embodies the paradigm of the formation of the performing art students vocalists;

• application of the principles of formation of the performing art students vocalists in modern reading (focus, interest, awareness, availability, continuity, sequences, continuity, individual approach, unity technical and artistic development;

• integrated use of methods (explanatory and illustrative, reproductive, heuristic research, phonetic (linguistic).

The investigated problem is not exhausted its relevance in this work, suggests that further research of this issue.

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CHILDREN'S SUBCULTURE AND ITS ROLE IN THE EDUCATION CHILDREN AT JUNIOR AGE

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Children's subculture is an environment which helps a child to adapt to the surrounding world of the adults. The investigations of M.V. Osorina emphasize that a child has an entrance to children's subculture world with the help of the adults which acquaint him with finger games, stornellos, bywords, rhymes, prick songs [1, p.17]. Kids assimilate the norms with their help and they gain the fundamental directions of the living space. Just the folklore elements of children's subculture are the first things to give the idea of the surrounding environment in view of the age features that help to find a place for you in the vitally important relations with the world. It's actually to trace the age dynamics of children's subculture in child preschool age and reveal its elements and also their tutorial effect on children.

Material and methods. The analysis of the scientific-theoretical literature, the observation of the speech peculiarities of children, interview, questionnaire survey of tutors and parents was carried out during this research.

Results being discussed. The investigators of children's subculture distinguish some features inherent to it, namely:

- ✓ Being the part and subsystem of the culture of the society to which children belong to;
- ✓ Children's subculture differs in some conservatism. There are some childish pranks, games and folklore texts have been saved for a long time in children's environment (For example: childish rhymes retain unchanged not one generation of children).
- ✓ Being the product of the social interaction and collective creativity of children in free communication, games, cognitive activity.

- ✓ At the same time, subcultures of children from different countries have its own features but also have similarities, the reason of which is resemblance of the nature of children's mentality, the character of the cognitive and social tasks for children to deal with.

Children's subculture as a phenomenon is a characteristic of the age ranged between 3-13 years and it's a necessary means for the development and education of children. The most commonly used at child preschool age element is children's folklore and children use it very actively. He is not only the means of knowledge of the inner world of a child and the development of the inborn abilities but it's also the development certain skills and habits.

By means it's mastering, the correct articulation of the sounds, vowels and consonants, the ability to distinguish sounds are obtained and also the communication norms and the rules of construction of the speech become an integral part of children behaviour.

The folklore traditions of children's subculture are beneficial educational means which can be used in different situations. For example:

- The confrontation of the interests during the casting before the beginning of the play in the rhymes ("Who are you going to be? ").
- The control of the correct course of the game ("Go, go but don't cross").
- The approval of the general norms of behavior in children's group ("Mind you mustn't run, mind you mustn't scream").
- It's necessary to have an activity, action in spite of everything.
- Using of excuses ("And I am in charge of the ladder, I rearranged all the steps. The cash desk is closed and I have the keys, which call nicknames get them back").
- Presence of calmness, excerpts ("Well, why are you keep on talking about yourself and yourself but about me – there is no a word? ").
- Ability to establish friendly relations ("Agree, agree and no longer fight me. And if you fight I'll bite. And we shouldn't bite because we are friends").
- Ability to specifically refer to other children with a request and its easier do it in such a way: ("Forty-eight, forty-eight – we ask your half").

Conclusion. As you can see, children's folklore is a result of collective work of many generations of children and it's a language of children's subculture, it can be used in the resolution of the difficult situations of the social interaction. By means of the folklore elements of children's subculture, preschoolers find the ways of the peaceful ways-out of the problems, arising in the game, communication. And by means of folklore aids, the negative manifestations of the word aggression of peers are destroyed, they learn the mutual understanding that in turn is a powerful educational means. Therefore, it's advisable for the tutors to support children in their work, causing the ability to the rhyme; the understanding of the consonance in the poetic speech develops in a practical level.

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VIOLATION OF PROGRAMMING FUNCTIONS, REGULATION AND CONTROL IN CHILDREN WITH DIFFICULTIES OF TRAINING

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At present the problem of difficulties in learning is the most actual problem for modern science and teaching practice. The analysis of the mechanisms of cognitive processes and behavior is associated with searching the solutions of specific problems which occur in teaching children with learning disabilities - children who have normal hearing and vision, don't have any mental retardation, don't have any speech and expressed defects of the musculoskeletal system show persistent difficulties in learning and adaptation to school.

Frequent category of children with learning disabilities is children with a lag functions programming and control activities. These children are often restless, but among them there are also children who are slow, insufficiently active. But what all these children have in difficulties in planning and systematic implementation of the action: they can't start doing the task at one, their orienting activity is chaotic and incomplete, they are easily distracted by extraneous stimuli, they prefer doing a simpler version of the task, often they do not do the task till the end and do not collate the result with its sample.

According to the structural-functional model proposed by A.R. Luria, the whole brain can be divided into three structural-functional blocks: 1) energy unit (block); 2) block (unit) of receiving, processing and storing exteroceptive information; 3) block of programming, regulation and control of complex forms of activity. All functions are implemented with the help of these three blocks. The tasks of the third block of our brains are the organization of purposeful, conscious and mental activity, which includes in its structure purpose, reason and program of actions in order to achieve the goal, the choice of means, follow-up actions, improvement of the result. A distinctive feature of its work is the presence of extensive bilateral ties not only with the underlying formations of the brain stem, but also with all other departments of the cerebral cortex. That is why the difficulty of programming and control are often combined with the difficulties of maintaining a working, waking brain. And as a consequence, arbitrary weak organization lead not only to failure in school, but to dysregulation of arbitrary behavior.

Difficulties of programming and control occur in all school tasks which require voluntary attention, but they appear most vividly when it is necessary in solve intellectual tasks.

Mastering of proper speech also makes demands of formation functions programming and control. Therefore, the formation of them in time is the most important criterion of the degree of readiness of a child to perform socially meaningful forms of activities, including training. These children need teacher's help, their attention, but, as a rule, it is difficult to organize it secondary schools. If such pupils are not given help, which is do not just assists, aimed at the development and correction of intellectual and educational activities, secondary violations can occur: persistent school failure. What is more: low motivation and low self-esteem can lead serious personal changes.

Thus, the problem of studying the mechanisms of voluntary regulation, "control functions" is essential to analyze the mechanisms of behavioral disorders, for diagnostic, correctional objectives, as well as to the general teaching practice.

Material and methods. The methodological basis of the work is the theory of system-dynamic localization of higher mental functions given by AR Luria. In order to study the functions of programming, regulation and control of arbitrary action, and evaluation of serial organization, 5 neuropsychological tests were picked up: test of dynamic movements, graphical test, making up a story based on a series of pictures, the score, electoral, drawings. The study was conducted with 8-9 years old children, pupils of school № 160 in Minsk (10 pupils from a special class and 10 children from the general education classes.

Results and discussion. The study shows that 9 children from a special class and 4 pupils from general education classes have a relative weakness of the programming functions and control functions. Table 1 presents the main results of the study.

Spreadsheet 1 – Programming functions

Test	***Special class, 9 pupils***	***Regular class, 4 pupils***	***Typical errors, which were identified in the neuropsychological tests***
Dynamic movements	3,9	4,5	Difficulties in assimilation and retention program movements, the tendency to expand the program, the slow pace of implementation.
Graphic trial	5,9	6	The difficulties of assimilation and retention programs movements exploded execution, the tendency to expand, looking up from the sheet of paper and departure from the program.

Test	*Special class, 9 pupils*	*Regular class, 4 pupils*	*Typical errors, which were identified in the neuropsychological tests*
Story based on a series of pictures	6,2	7,75	Skip semantic units, the tendency to enumeration of details, semantic repetitions and gaps in the narrative. Short story, absence of sentences, complicated syntactic structures, slow tempo of speech.
Score	1	0	Difficulties of election score (difficulties in completing simple score and move to harder).
Drawings			The difficulty of creating of a new program image of the object, performing stereotyped drawing program. Low productivity, and repetitions of the pattern name. The predominance of generalized patterns, poor quality images. Using phrases in naming patterns.

Conclusion. Possible compensation of "weak" features of the children by "strong" children of a special class is less than children in general education classes because of the presence of these secondary defects and it requires specially organized comprehensive assistance from teachers, psychologists and parents. The shortage of programming and control functions of the children from g. e. classes can be compensated in the course of development due to the "strong" functions and it is not a factor of school failure.

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REPRODUCTION OF UNCOMPLICATED PHRASES (SENTENCES) BY YOUNGER PUPILS: DISCUSSION OF THE RESULTS OF THE RESEARCH

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The problem of memory is one of the actual in psychology today. Memory as a cognitive process is a component in any human’s activity and provides with its efficiency. Cognitiveprocessesrealizeassome cognitive acts, each of which represents a united psychological act formed integrally of all types of psychological processes. But one of them is the most important, leading, which determines a character of this cognitive process. Only in this meaning it may be analyzed separately such psychological processes as perception, memory, thinking, imagination. Memory is rather difficult process and it is used a lot of various ways and methods to learn it, as well as problems of memory have learned and are learning the present day in various domestic and foreign conceptions.

Material and methods. This empirical research was conducted on the foundation of SII “The secondary school № 46 in Vitebsk”. For learning ofa short-term memory’s volume it was used a method of M. Bityanova “Learning of the memory’s volume” [1]. There were 21 pupils in the research, among them 11 girls and 10 boys. The aim of our research was learning of the short-term memory’s volume of younger pupils. The younger pupils were offered to listen to attentively and remember a proposed collection of numbers, words or phrases. The content of memorized material diversified from one series to another. Generally the methodology consists of three series. In the first series pupils are offered to listen to and immediately after the presentation reproduce (in writing – at group investigation, orally – at individual investigation) two-figure numbers in any order. In the second series pupils reproduce a proposed collection of mono- and binate words, in the third one – uncomplicated phrases (sentences).

Results and discussion. According to the available literature information pupils from 7 to 9 years old are able immediately after presentation to reproduce 7 – 9 uncomplicated words or two-figure numbers out of 10 (the range "normal" is 5 – 9 units), which means a quantity of rightly reproduced words in the sentence. The children of this age remember the sentences with the total volume of 16 – 20 words without any difficulties. On the base of the derived data we can say that 2 persons are in the third series in the range "normal", which forms 9,52% of all pupils and the remaining 19 persons (80,48%) aren't in this range. Of the 11 girls who took part in the research in the third series only two girls (18,18%) were in the range "normal" and the remaining 9 girls (81,82%) weren't included in this range. Of the 10 boys from the 3rd form nobody could cope with the proposed task, i.e. didn't reproduce a necessary quantity of words. It can be concluded that the task of the third series (reproduction of uncomplicated sentences) was too difficult for the pupils from the 3rdform.

Conclusion: The process of memory's development of younger pupils must be organized specially, because in most cases the pupils of this age don't use semantic treatment of the material independently (without special teaching) and to remember they use well-tried means – mechanical acceleration. Itcanbeusedalotofvarioustasksandexercisestodevelopsemanticmemory,forexample, you can readacertain collectionof somewordsforachild (10 – 15),which you can divide into the groups on various indications and then ask him to tell the words which the child has remembered, you can also use the next task: replace individual things for memorization with any story clearly separated semantic unit [2].

In the course of the conducted empirical research it was revealed the nextfacts: it was more difficult to remember rather small sentences than two-figure numbers and mono- and binate words for the pupils from the 3rd form. In accordance to that we can make a conclusion that the pupils haven't coped with the third series (reproduction of rather small sentences) practically, as only 9,52% of children of the whole form has got into the range "normal" and the remaining 90,48% hasn't found themselves in this range, which gives evidence of a low level of semantic memory's development, unformed skills of semantic treatment of memorized information.

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ORCHESTRA AS A MEANS OF DEVELOPMENT OF PUPILS' MUSICAL AND RHYTHMICAL ABILITIES IN THE SECONDARY SCHOOL

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One of the most important tasks of the modern school education is to bring up a cultured and harmonious personality. Music classes take the leading role in this process. Music gives an incomparable opportunity to mental development of a creative potential of a person, especially when he is a child. At this age, a person is very sensitive to all new things. (G. A. Kurayev, Yu.E. Malyarenko, T.N. Malyarenko).

Music is a sounding, but it cannot be pleasant to our hearing if there is no any rhythm in it. That's why, the most important and difficult aim of the teacher of music is to form a sense of rhythm of pupils. Many teachers and musicians (B. Asafyev, B. Yavorsky, N. Vetlugina, K. Orff) emphasized the value of a children's orchestra as a basis of development of musicality of children:

development of musical perception and hearing, musical and rhythmical abilities, memory. Creation of an orchestra of children's noise and percussion instruments is a remarkable means for development of metro rhythmical hearing of pupils.

Despite the positive theoretical and practical prerequisites, creation of orchestras of children's elementary instruments in secondary schools of Republic of Belarus is still in the formation stage [1, page 2].

The purpose of our research is the formation of metro rhythmical hearing of pupils at music classes by the means of creation a children's orchestra of noise and of percussion instruments.

Material and methods. The research was carried out in the secondary school in Vitebsk among the children of the second form. The base of the research was a curriculum on “Music” [2, c. 12]. At the beginning of school year, the children of the second form were divided into two groups. One of the group performed a song; another clapped the hands and represented a defined rhythmical figure. Then the groups changed the activities. It helped us to diagnose the level of pupils’ rhythmical feeling. At the music classes, the pupils performed the songs from the school repertoire. The played the percussion and noise instruments that are recommended by the educational practice of Karl Orf. There were used pitched percussion instruments (xylophones, metallophones, glockenspiels, kettledrums) and unpitched percussion instruments (claps, slaps, chatter, drums, tambourines, little bells, triangles, wooden sticks, cymbals, wood blocks, castanets and others).

The main methods of the research work were analysis, comparison and visualization, practical and constructive methods.

Results and discussion. An orchestra is one of the types of children’s performance, which helps to develop their musical abilities. Playing the noise and percussion instruments develops the feeling of a rhythm of children. Creation of noise and percussion orchestras in the elementary school has a positive benefit – acquirement of musical instruments does not demand special preparation and does not take a lot of time. So, it helps the pupil to start playing the musical instrument right away and to get his own experience in the process of practical work.

The children played different marches, songs and folk melodies in the orchestra. The repertoire of the orchestra depended on the kit of the instruments, background and number of the members of the orchestra, the leader’s skills of the orchestra. Choosing the repertoire, we gave the pupils an opportunity to listen to the musical composition that was played the piano, bayan and accordion. Playing in the orchestra, the pupils were absorbed in the defined metro rhythmical area. They had to hold their own rhythm and it helped them to assimilate different rhythmical figures in a limited way. The teacher dictated the right tempo and could form the feeling of it in children. After the year of playing in the orchestra, the children showed good results. They learned durations of notes and their classification, could reproduce a complicated rhythmical figure.

So, we established that pupils’ concern with music had increased. Some of the children decided to study music seriously in special musical schools.

Conclusion. Playing the musical instruments is an interesting and useful musical activity of pupils. Children's musical instruments help to decorate the pupils’ life, to entertain them and to stimulate their own aspiration to the creativity. Playing elementary music compositions allows the pupil to understand the feeling of rhythm, tempo and dynamics, to enjoy the music and to develop attention and other skills.

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COMMUNICATIVE ASPECTS OF LEARNING RUSSIAN LANGUAGE WITH SUBJECTIVIZATION

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The speech serves as a communication and messages, emotional expression and impact on other people. Well-developed speech is one of the most important means of human activity in modern society, and for schoolchild it is a means of success in school. Speech is a way of understanding reality. On the one hand, the wealth of speech depends on the enrichment of a child with new ideas and concepts more; on the other hand, language fluency, good command of speech promote the knowledge of complex relationships in nature and society. Children with well-developed speech are always more successful in learning in different subjects.

The relevance of our research is that teaching Russian language with subjectivization means allows in a very interesting way to develop effectively the communicative culture of the child.

Subjectivization suggest a qualitatively new role for students in the organization and implementation of educational activities - their direct participation in the planning and conducting of all or most of the structural lesson stages. In accordance with this methodology students get some of the teacher's functions [1, p. 11]. In practical terms, it means that the students formulate the topic and purpose of the lesson themselves, determine the types and content of their educational activity at all or some of its structural stages, are actively involved in learning new training material, make their own conclusions and generalizations.

Aim of this research was the studying the features of using the subjectivization method in the teaching of Russian language lessons in primary school; development of the complex of exercises oriented the getting knowledge by students, skills in spelling, morphology, derivation in unity with the enrichment of vocabulary, speech development, formation of interest in the native language.

Material and methods. A theoretical study, the analysis of linguistic and methodological literature on teaching of Russian language lessons in the context of the subjectivization methodology, a study and an analysis of the educational programs, an experimental verification based on SEI "School №46 Vitebsk".

Our study was conducted in three phases: the ascertaining (gave us an idea of the level of students' knowledge in the spelling area and the ability to apply knowledge in practice, taking into account the morphemic word structure and spelling rules); the forming (was built in accordance with the requirements of the subjectivization methodology); the controlling (was conducted in order to identify the effectiveness of the proposed set of exercises).

In the ascertaining stage we chose a technique of written discussion "I am proud that I am a resident of the Republic of Belarus" to identify the level of students' knowledge. During this discussion every child has the opportunity to express written his points of views on this question, and after joint debate to bring up the reflexive in written form. In assessing the results of the discussion, we considered the content and literacy of children's responses.

In the forming stage, we have implemented a series of exercises to work on the text with the subjectivization method. For this purpose, we used three kinds of student activities with text exercises proposed in the method: the restoration of the words in the text according to the available orthograms; the recovery of the words in the text under the schemes reflecting their morphemic structure; the restoration of the text according to the tables [2, p. 15]. After analyzing a schoolbook on Russian language for 4th of secondary school ed.E.D. Grabchikova, we have concluded that it is advisable to make a set of exercises, relying on the topics proposed in it. In the selection of the texts, we were guided by the semantic criterion. Particular attention was paid to the texts of civil and patriotic orientation, as the inculcation of love for the motherland, a sense of pride for their country and patriotism are an obligatory element of child-rearing.

In the control phase as a check on students' knowledge we again used the technique of the written discussion with the same evaluation criteria. Only the question was changed: "Who is a patriot, and Could you call yourself as such?". This is due to the fact that during the year the children have learned a lot of new material, have acquainted with new concepts.

Results and discussion. After comparing the results obtained for the ascertaining and control stages in the experimental class, we have obtained the following data:

1) The speech of students has begun more intensively, what is well noticeable in the process of defending their points of view;

2) Children's interest increased in Russian language lessons (students started to prepare for them more carefully and became more active during the lessons);

3) The level of the literacy of students' speech.

I would like to emphasize the fact that the greatest interest to the exercises, developed in the context of the subjectivization method, was felt by students who had a high marks for all subjects ("Excellent"). We should also note the positive results of the students who were at the first stage among "the lagging behind students": almost all of them have raised their level.

Conclusion. Thus, it can be argued that the systematic inclusion in the lesson structure such text exercises allows to create an educational interest of students, attention to the word in terms of its spelling, lexical meaning, morphemic structure, grammatical features. Thereby subjectivization method effects positively on the development of communicative skills of junior pupils.

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PHYSICAL TRAINING, SPORTS AND TOURISM

PSYCHOMOTOR DEVELOPMENT OF STUDENTS WITH MODERATE AND SEVERE INTELLECTUAL DISABILITIES

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The problem of psychomotor development of a child is among the most significant in modern General and special pedagogy and psychology. This is natural, since in the early stages of ontogenesis characteristic feature of the development is its concretecost, when the mind and motor skills are inseparably linked (Lisowski, MLA, Anionte, Namsaraev and others). On the connection between mental and motor field indicated even the Greek philosophers Aristotle and Plato. The beginning of systematic study of psychomotoric connected in foreign science named E.Dupre, and in Russian - Niedereschach.

In modern domestic and foreign psychological-pedagogical literature reflects the results of research of many authors (Mbegani, Npise, Avallon, Lisowski, Emmalou, Lonavala, and others), revealing different issues related to psychomotor development of children. The analysis of these studies allows us to consider psychomotoric as a complex entity that combines interrelated motor, cognitive and emotional components. Well-studied are the features of psychomotor development of infants and young children. Much less frequently in the literature presents studies on psychomotor development of children with intellectual disabilities, especially those with severe forms of its manifestation. Children with moderate and severe intellectual disability enrolled in the second branch of the auxiliary school, are among the most difficult for the educational process contingent. These children are significantly behind their healthy peers from secondary school in terms of development of physical qualities, as well as the level of development of motor skills. Study and analysis of associated conditions and causes are important scientifically and have practical importance.

The aim of the research is to study the readiness skills gross and fine motor skills and personal skills ,self-help skills that form the basis of the movements of the pupils of the primary school’s age with moderate and severe intellectual disability.

Material and methods. There were 7-10 year old children with diagnoses of moderate and severe mental retardation , who participated in the research (n=9, 5 boys and 4 girls), who were studying in 1-2 auxiliary classes at the school №26, Vitebsk

For the researches of psychomotor development of children was used: 21 motor tasks, defining ownership total motility; 8 jobs ,that characterize the development of fine motor skills; 8 skills and self-help skills.

The levels of mastery of motor skills (control tasks) were determined in points from 0 to 5: 0 points (zero, an inadequate level) - a student is not able to do it or reproduce quite another; 1 point (very low, cover) - the activity is carried out through constant physical assistance of an adult; 2 points (low, unsatisfactory) activities performed by connecting physical assistance and coaching from an adult, numerous errors (75%) prevail over rational execution (25%); 3 points (average, satisfactory) - is able to perform almost himself with difficulty, stops and many (up to 50%) errors; 4 points (above average, good) - knows and is able to perform independently, efficient and effective party absolutely dominated (75% of the irrational); 5 points (high level) is an independent, confident, without significant errors execution [1].

Results and discussion. Of the 37 control tasks, 67% of students were able to play from 22 to 34 of the control of motor actions, including 33% from 29.7% to 40.5 percent of control tasks were not available without the physical support of adults.

Among the tasks of General motor, most often an overwhelming skills (0 points) for 33.3% of students were throwing the ball with both hands behind the head, hit the ball in the goal on the floor, kicking the ball in the direction of the goal, the movementon the bench with the arms, forward tilt over the ball from a seated position. Performing stand on 1 leg without visual control, jumping on one leg, squat and standing up on two legs, participation in competitive games were unavailable for 44.4% of children; jumping on one leg with the advancement of 66.6%.

The greatest difficulties during the performing of tasks involving fine motor skills caused : copy the pattern of squares and circles, stroking the outline of the diamond in 33.3% of students; cutting the sheet with scissors following the drawn line - 44,4%; copying the model of a triangle, a cross with arrows on the ends of the 66.6% of students.

Among living skills and self-help skills in 33.3% of students turned out to be impossible with such skills as the release of products from packaging, cleaning the dishes and wiping the table, brushing and combing; 66.6% of students - lay and cover the bed.

Conclusion. Pupils with moderate and severe intellectual disabilities , who are studying in 1-2 classes of auxiliary schools reproduce the main models of transportation (walking, crawling, running), the basic positions (sit, stand, lie down, elevate, and others, making some elementary manipulations with objects, training equipment, personal belongings. However, unaided replay (at the level of 3-5 points)of the most of the actions and their varieties for children are unavailable. The children without disabilities with ontogeny , posses these actions in preschool age. All this may indicate that the motor experiences of the surveyed children is just a lack of physical activity and its diversity in the preschool period of life.

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ANALYSIS OF VELOCITY AND FOCAL MAYBE YOUNG FOOTBALL PLAYERS UNDER TIME PRESSURE

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Ability to detect the early stages of preparation of promising athletes to optimize them for the volume and intensity of training loads while increasing efficiency. To identify this group, you must have a set of tests with highly informative for objectification of the current state of physical fitness of young athletes. The aim of this work is to develop technology to identify informative test "ladder" and "Relay" and identifying the current level of physical fitness of young soccer players.

Material and methods. Test "ladder" involves overcoming a 10 meter interval from 21 hurdle of gymnastic sticks with a diameter of 2.5 cm and a length of 120 cm, laid at a distance of 50 cm from each other. The task runs three times at maximum speed on condition setting foot in the gap between the poles at intervals between attempts 30 seconds. Time fixed by the initial movement in seconds with an accuracy of 0.01. Presence of errors be recorded in the graph correspond to the attempt. This test allows you to identify the relationship of coordination and speed capabilities.

As a material for testing the method used data on the time test execution"ladder" of the two groups of young athletes FS "Avangard" at age 12 in 2000 Born in number 17 persons. Results were measured twice with an interval of 5 training lessons.

Results and discussion. In the test "Relay" test performs the following tasks on catching 40-centimeter ruler, standing, arms stretched forward, 4 finger together, the thumb is taken aside. Testee tries to catch tempered vertical ruler in the shortest time. The task runs three times with each hand, test execution begins with the right hand. The results are recorded in the minutes. On average rate determined by the difference between the right and left hand. This test determines the speed of the motor response of the athlete.

In a test using the test "Relay" was attended by 61 Athlete 1993, 1999, 2000, born 15 (22 men), 12 (17 men) and 10 (22 men) years, respectively, involved in football in FS "Vanguard" and CYSS №3 the city of Kursk.

For the analysis of the results obtained during the implementation of these two tests were carried out comparative analysis of indicators,built corresponding graphs. In order to identify and analyze the relationships between indicators was conducted by the method of correlation analysis Zavyalova [1, p 40] and were ranked correlation coefficient to 10 point scale.

According to the test, "ladder" on the basis of a two-week training cycle observed an increase in the results of the first and the second attempt and the decrease of this index in the third attempt. According to the results of the correlation analysis it was found that after 5 lessons connection between attempts in the group increased from 4 to 8. Noting the low correlation of errors with time. To increase the visibility to use the graphical mapping connection, the example in Figure 1 by the method presented in previous papers [2, p 50], [3, p 254].

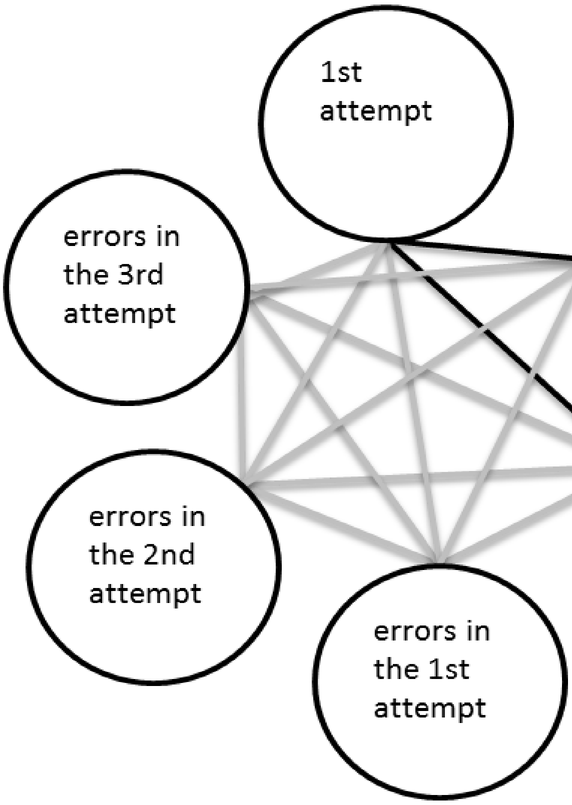

Fig.1 - Graphical display of rank connectivity indices in the test "ladder" after 5 sessions.

According to the test, "Relay" for athletes 10, 12 and 15 years showed similar change indicators. A decline in the second attempt and the increase to the third.

Correlation analysis indicated the absence at this stage of a significant association between indicators. Coefficient did not exceed a value of 5 for either age group young players (tab. 1).

Table 1 - Rank of connectivity indices for the total age group on the test "Relay".

		Right Hand			Left Hand		
	number attempts	1	2	3	1	2	3
Right Hand	1	10	0	0	0	0	0
	2	0	10	0	0	0	0
	3	0	0	10	0	0	0
Left Hand	1	1	1	1	10	0	0
	2	0	1	1	1	10	0
	3	1	0	1	1	0	10

Conclusion. The results obtained in the two-step testing indicated the closeness of the relationship and the dynamics between the approaches and steps. Ranking method helped establish the degree of importance of each approach and stage separately. This complex technology set value of a particular physical qualities and its level in each age group at the current moment. Also found no functional asymmetry between the upper extremity during the test "Relay".

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AUTONOMY OF CHILDREN WITH INTELLECTUAL DEFICIENCY THROUGH THE EYES OF TEACHERS A SPECIAL SCHOOL

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Education and upbringing of children with mental retardation are engaged in for more than one decade. In foreign and domestic bibliography we can find scientific works dedicated to the development of methodologies for the improvement of physical qualities, movements and mental abilities, socialization and integration of this category of children, as also their means of psychological and pedagogical factors and the facilities of physical culture and sports.

At the core of our public policy in the sphere of special education lies the idea of social and domestic preparation and integration of children with special needs, which is the ultimate goal of all correctional and developmental education. Of particular importance is the process for children with moderate to severe degree of intellectual deficiency, as the most difficult socially adaptable and integrable in the society category.

According to the United Nations, in the world there are about 450 million people with mental and physical disabilities. This is the tenth part of the inhabitants of our planet. World Health Organization data show that the number of inhabitants in the world is 13% (3% of children are born with intellectual deficiency and 10% of children - with other mental and physical disabilities). Total in the world 200 million children with disabilities [2].

However, until now it remains an open issue of independence and autonomy of the manifestations of children with intellectual deficiency.

Explore the state of autonomy problems in children with moderate and severe degree of mental retardation who study at a special school.

Material and methods. To achieve this goal we carried out a survey of teachers at the schools of Minsk and Vitebsk. The survey involved a teacher and an educator of the second branch, in a total of 17 people.

Profile includes 10 questions:

- What is autonomy?
- Can children with intellectual deficiency be autonomous?
- Which one is the most favorable period of age for the formation of autonomy?
- What kind of social environments mostly affect the formation of autonomy?
- Which are the most significant components of autonomy?
- Does physical culture and sport help at manifestation of autonomy?
- What kind means of adaptive and medical physical culture are needed, in order to develop components of autonomy?
- Which lessons in the secondary school help students develop autonomy?

- Should post-graduate children residing at the second level be accompanied by specialized staff ?
- Which ones can be obstacles to the formation of autonomy?

Respondents are asked to choose more than one answer for each of the questions.

Results and discussion. Regarding the question, *what do you think autonomy is*: 47% responded that it's a manifestation of independence 70.6% responded that it's the relative livelihood one teacher responded that it's complete independence one respondent was unable to answer.

Regarding the question, *do you think children with moderate and severe degree of intellectual deficiency can achieve autonomy*: 60% responded in favour of the probability, provided the existence of certain conditions slightly more than 35% excluded such a possibility one respondent was affirmative.

It is worth noting that all remedial developmental learning process aim at the formation of self-sufficiency and full integration into society. However the survey showed that only one teacher considers it possible, while more than half emphasize the necessity of creating certain conditions.

About 60% of the teachers refer to the pre-school period as the one most favourable for the formation of autonomy, while the other 40% indicates the early school age. This is supported by the studies of teachers and psychologists, such as Vygotsky L.S., El'konin D.B., Leontiev A.N., Pevzner M.S. [1,3,4,5].

Regarding which factors of the social environment and how much each one affects the formation of autonomy, teachers unanimously take the first place, followed by school and remedial developmental centres sharing the second place and last coming the medical facilities.

Regarding the question *which are the most significant manifestations of autonomy*, teachers responded as follows:

- Adaptability in everyday life - 100%;
- Hygienic skills and self catering - 94%;
- Movement autonomy - 82% ;
- Speech, self-image and orientation in the environment - 76%;
- Social activity - 65%;
- Mental processes (attention, thinking, memory) - 59%;
- Motor learning was the least important-only 41% considered it necessary.

Regarding the question *do you believe physical culture and sports have a positive impact on the process of autonomy formation:*

53% of the teachers answered affirmatively;

47% of the teachers answered it is possible;

Regarding the question *which means of adaptive and therapeutic physical culture are the most helpful*:

- Outdoor games and sports - 94.1%;
- Massage - 64.7%;
- Fit ball gymnastics - 47.1%;
- Swimming, walking, running and jumping - 35.3%;
- Skiing and tempering - 23.5%.

Regarding the question *where autonomy can be better developed* teachers responded as follows:

94.1% - at social adaptation classes;

88.2% - occupation at household labour;

47.1% - at the lessons of physical culture and sport events.

Regarding the main issue *if children after graduation should be accompanied for the rest of their lives*:

30% of the teachers responded affirmatively;

70% of the teachers answered this is promising under certain conditions.

Regarding the issue of *which are the most common problems to the formation of autonomy*, most respondents noted overprotective parents and the individual characteristics of each child. Some educators referred to the lack of proper equipment for individual work.

Conclusion. From the analysis of the research's results we can conclude the following:

- The beginning of autonomy's formation must be at the pre-school age;
- To form the autonomy it is most necessary to create certain special conditions;
- Family and school are the main social environmental factors in the formation of autonomy and the development of each child's unique skills;
- Physical culture and sports contribute for autonomy of the children;
- The main obstacle is the parental overprotection.

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DUNAMICS INDICATORS HAMMER THROW ON TECHNIQUES AND RANGE ROMUALD KLIM IN OLYMPIC YEAR

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Being a world champion is honorable.

A person who has achieved this title deserves no respect. But the title is not forever. Over time, the words "world champion" added the prefix "ex", that is the former.

For athlete's name, inscribed in gold in an Olympic record, you can not add the prefix "ex", it is impossible to say - "the former Olympic champion".

Every four years, in the eternal book Olympic history there are new names of the winners, the list goes on glorious athletes [1, p. 3].

Romuald Iosifovich Klim. – one of the known, honored and respected Olympic champions in women's hammer throw. Romuald Iosifovich Klim. - Honored Master of Sports in the hammer throw, Title XVIII Olympic Games in Tokyo (Japan) in 1964, a silver medalist of the Games XIX Olympiad in Mexico City (Mexico) in 1968, the world record holder and European, European Cup winner.

Progress achieved by high sports results in the hammer throw became possible due to the complex and diverse processes of training and continuous monitoring, accounting them.

The purpose of research - determining the dynamics of the hammer throw technique and range Romuald Klim in the Olympic year.

Material and methods. We used the following methods:

– analysis of the working documentation Honored trainer of the USSR - Yevgeny Mikhailovich Shukevich.

– analysis of the diary Romuald Klim in the preparation for the Olympic Games XVIII Olympiad.

– mathematical and statistical processing of the data.

Results and discussion. The figure placed indicators hammer throwing on the range in full force and indicators hammer throw, made on technology Romuald Klim. Analyzing the performance of throws on the technique should be noted that the highest number of shots made in the hammer throw Romuald Klim in July (163) and August (144). In January and February, the number is low, respectively, 78 and 95 in all other months on the implementation of throwing technique is in the range 101–132.

Total on R. Klim technique performed in the Olympic year 1136 throws.

Dynamics of indicators throws the hammer at a distance in full force as follows:

– in the preparatory period the number of shots slightly (in January – 17 February – 16 March – 23).

– in the competitive period in the early stage of the competitive training Romuald Klim performs a large number of shots at a distance. In April and May, the average number of tosses increases, respectively, 79 and 71 In June, a decrease in the number of shots to 44, and in July, performed a total of 14 shots. This is the lowest rate year cycle of training. Total shots on the range for a one-year training cycle Romuald Klim fulfilled – 343.

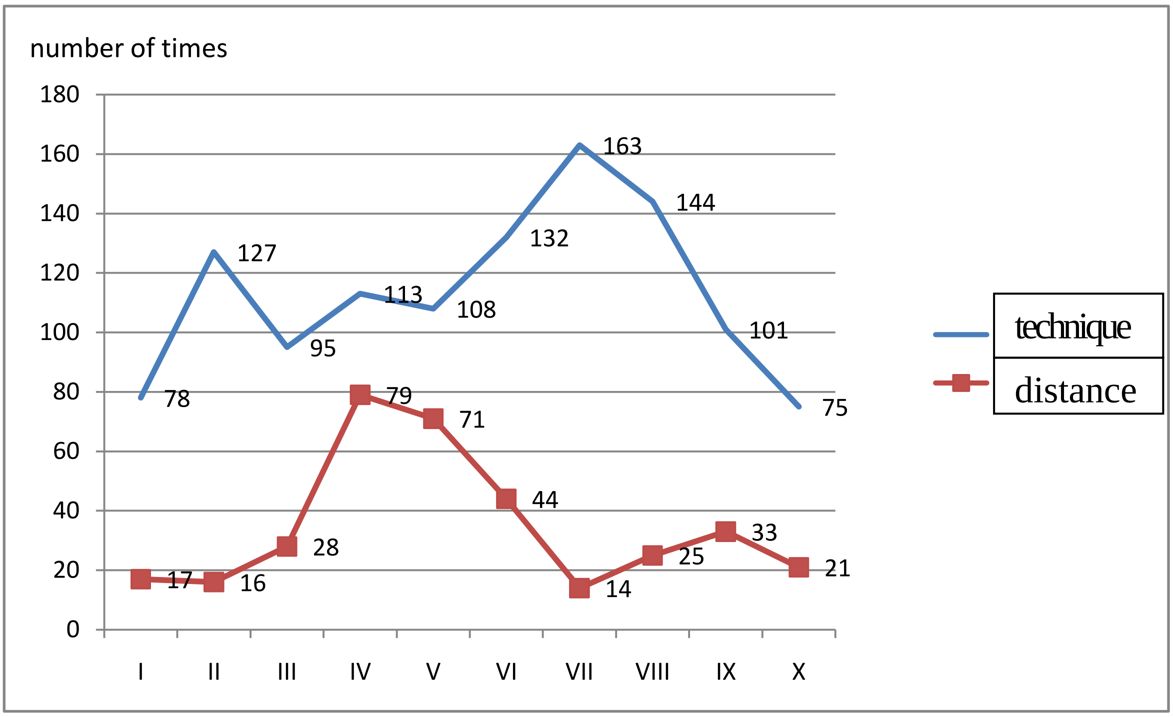

Figure - Comparable figures hammer throwing on the distance and technique Romuald Klim

Conclusion. Thus, comparing the material throws the hammer technique and range should be noted that the shots on the range carried Romuald Klim in January, February and March (preparatory period) have some stabilization, and hammer throwing on the technique has a wavy character.

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A STUDY OF CURRENT TRENDS IN THE ORGANIZATION'S FINANCIAL AND ECONOMIC RELATIONSHIPS IN THE GAME SPORTS (TENNIS)

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At the stage of formation of the modern market economics of the Russian state the industry has undergone and it still undergoes structural changes, these changes affected sports as well. Development of physical education and sport in modern society is a social and political factor. Participation of broad cross-section of the population in physical education and sports, as well as success in international competitions are one of the proofs of the vitality and spiritual power of any country. One of the fundamental aims of the state politics is to create conditions for the development of physical culture and sports, involving children, teenagers and youth into active lifestyle and sports. This is important because the demographic situation in Russia, despite some positive developments, remains hard. Nowadays the success in sports is often determined not only by talent, diligence and efficiency of training process, but also by highly professional management, as it is necessary for the athletes to achieve good results at minimum cost. This is especially important for such an expensive sport as tennis.

Objective: to study the financial and organizational, medical and social problems that arise when working with tennis players.

Object of study: organizational and financial, medical and social relationships in tennis.

Material and methods. Methods: social survey, a complex, structured and systematic analysis, statistical methods, and others.

Children who are involved in tennis are not only physically well developed, but are also healthy, as they fall ill on average 1-2 times per year, while the duration of treatment and rehabilitation does not exceed 10 days, in contrast to other sports. Diseases are spread easily, rehabilitation is fast, the average amount of money spent on treatment, does not exceed 1,000 rubles. Besides, sports help to form positive attitude towards a healthy lifestyle [2].

Results and discussion. Tennis is an expensive kind of sport. The main items of expenditure - the cost of renting of courts and sessions with a trainer, the cost of equipment, as well as the cost of trips to the competitions. All in all, on average the athlete spends 79,200 rubles on renting of courts and sessions with a trainer per year, 5000 rubles on equipment and 56100 rubles on participation in the competitions, ie 145 300 rubles in total. However, as in this work one of the tasks is to examine the dependence of the cost on the result achieved, the sample which included athletes who win the competition prizes (1-3) was studied separately. On average, the expenses were: lessons with trainer and renting courts - 100800 rubles, inventory and equipment - 5,000 rubles, participation in competitions -61100 rubles. So, the total expenditure for the year is equal to 171,900 rubles, which is 85% more than for the total group [7].

Also the factors affecting the individual cost items were examined. So the cost of 1 hour sessions, renting courts and working with a coach depends on many factors. It depends on whether a person trains individually or in a group (in group classes at 1.5- 2 times cheaper), on the geographical location of activity - so the highest price per hour was registered in Moscow - 1156.61 rub., the second place goes to Omsk - 181.82 rubles., in Belgorod trainings average cost 89.16 rubles per hour and 64.54 rubles in Kursk depending on the age and sex of the child. The older the child is the higher the costs are, at younger ages trainings for boys usually cost higher than for girls, but it gets equalized with age, as the trainings are moving to a more professional level and for girls it becomes even higher by 12% [4].

Analyzing the dynamics of change in the cost of school hours, equipment and inventory by age categories separately it was concluded that there is a trend that costs are increasing with age and reach their maximum size at the ages of 12-14 years, and then they either remain the same or decrease. The reason is probably that at the age of 14-16 years teenagers think more about their future, and many of them understand that tennis cannot become their profession and pay attention to other areas, as a result the intensity of exercise decreases as well as the sport expenses [3].

Further the sources of funding the lessons have been studied. In the first place there are the personal funds of parents, then the state support and sponsorship, grants and scholarships and prizes. Sponsorship is received by 9% of respondents and 70% of them belong to the group of the people who win prizes, its main direction is sponsoring trips to competitions (56% of the funded). 17% of the respondents get help from the state 94% of which belongs to the group of people who win prizes, most often it is also funding trips to competitions (56%), as well as renting courts (38%). 32% earn money from lessons, most often it is the prizes and the income from sparring. 94% of them are the athletes who win prizes. The average size of income is from 1000 to 5000 rubles. Getting scholarships and grants is yet very rare among our sportsmen. Only two respondents are the scholars of the "Yeltsin Fund" [5].

Satisfaction of the athletes by the tennis lessons is high. 92% of respondents are involved in sports because they like it, but it should be noted that the purpose of trainings for 13% is getting paid. On average, about 85% are planning to play tennis professionally in the future or hope that it will help to get education and career development. The lowest expectations are about material costs, i.e. only 70% believe that their costs will be repaid [1].

Conclusion. The results obtained allow to optimize the material costs of training and expensive process and improve the efficiency of formation of sportsmanship at lower financial cost.

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STATISTICAL ANALYSIS OF THE ANTHROPOMETRIC QUALITIES OF YOUNG SPORTSMEN OF THE GROUP OF INITIAL TRAINING

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To study the dynamics of anthropometric parameters of the group of young athletes in the initial training group to identify the most significant parameters and their degree of connectivity.

"By the beginning of the new century, stable negative trends in the health of the younger generation were formed" [1]. Significant decline in health of children show the need for increasing attention to the physical development of children from early stages of development. Estimate of physical development plays an important role in the sport. Forecasting has always played an important role in sport, which is impossible without a detailed and thorough study of the various anthropometric and other characteristics of athletes, in order to pick out the parameters that have a significant impact on the overall level of physical fitness and the estimation of perspectivity on the basis of the data received. Certainly, evaluation event for groups of initial training of young athletes seems most rational [3].

Material and methods. According to the aforesaid we have decided to analyze the anthropometric characteristics of young athletes related to the initial training group (9-11 years). For this age slowdown preceding puberty is typical. Yermolaev Y.A. [3] called the period of 7-11 years the second period of rounding.

For analysis, we selected the following anthropometric indicators and indices: weight, height, age in days, spirometry, chest excursion, chest circumference at the inhalation, chest circumference at exhalation, and its intermediate value. In order to minimize the uncertainty factor during estimation the value of age in days was used.

Results and discussion. For the processing of the results were used the statistical analysis methods. In order to identify the most close relationships between indicators and their dynamics methods of correlation and regression analysis were used. As a material anthropometric qualities of young athletes from children's sports school №3 of Kursk of medical-control charts of athletes and sportsmen in form 061 / U observed from 2001 to 2013 from the age of 9 to 11 years were used. The sample included data of 62 young athletes. For convenience of processing the data available, we found it possible to assign a code to each athlete, including the performance of investigated parameters.

Tables of characteristics were constructed and by means of Excel correlation analysis was conducted (Table. 1), the criterion of the Student and error of the first kind was count (Table. 2). For visualization and convenience, the color differentiation of the obtained values of p was applied (Table. 2): signs with p value of 0.001 are highlighted with the darker color; a p-value of 0.001- with the lighter and a 0.001 are white.

The strongest correlation was found between weight, chest circumference indicators on inhalation and exhalation, height. A weaker correlation was found between the indices of the intermediate chest circumference and age, spirometry. Found no correlation relationship indicators with chest excursion, except for the chest circumference at inhale, which can be explained by the lack of capacity of the sample and the presence of individual features in this group. Also the weak association between age and a circumference of the chest on inhale and exhale was shown. These interim results mostly coincide with those made in earlier work [4] for the larger sample.

Table 1. The correlation coefficient

		weight	*height*	Chest circumference: *On the inhale*	Chest circumference: *on the exhale*	Chest circumference: *Intermediate value*	*Chest excursion*	spirometry	*age*
weight		1,00							
height		0,71	1,00						
Chest circumference	On the inhale	0,82	0,46	1,00					
	on the exhale	0,91	0,53	0,93	1,00				
	intermediate value	0,73	0,57	0,83	0,79	1,00			
	Chest excursion	0,05	-0,15	0,50	0,21	0,37	1,00		
spirometry		0,55	0,46	0,51	0,53	0,44	0,17	1,00	
age		0,42	0,56	0,37	0,33	0,46	0,07	0,59	1,00

Table 2. The error of the first kind

p		weight	*height*	Chest circumference: *On the inhale*	Chest circumference: *on the exhale*	Chest circumference: *intermediate value*	*Chest excursion*	spirometry
weight								
height		2,1E-08						
Chest circumference	On the inhale	1,4E-12	1,7E-03					
	on the exhale	3,9E-19	1,9E-04	1,0E-21				
	intermediate value	4,7E-09	4,3E-05	8,4E-13	6,7E-11			
	Chest excursion	3,8E-01	2,3E-01	4,4E-04	1,4E-01	1,2E-02		
spirometry		7,4E-05	1,4E-03	3,8E-04	1,7E-04	2,5E-03	2,0E-01	
age		4,4E-03	6,6E-05	1,1E-02	2,8E-02	1,5E-03	3,5E-01	2,0E-05

Conclusion: On the basis of the values of the correlation coefficient and the error of the first kind (see Table. 1, 2) it was concluded that there is a close relationship between the majority of the studied characteristics. This method has allowed to pick out poorly correlating factors such as chest excursion. It was found that the strongest correlation is observed between indicators of weight, height and circumference of the chest on inhalation.

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PHYSICAL EDUCATION IN THE FAMILY

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It is generally accepted that outdoor games and physical exercise had a significant influence on the normal growth and development of the child, and if these classes are held outdoors and keep fit body. Properly conducted physical exercises contribute to the development of positive qualities such as self-reliance and self-control, attention and ability to focus, resourcefulness and courage, endurance, etc. The timely development of basic motor skills are almost as important as the early intellectual development of a child.

The purpose of this research. Explore the place in family life takes physical education. Improving the physical education of children of preschool age. Analyze how sports equipment is available in the family, and what sports clubs attended by children of 3-4 years.

Material and methods. To achieve this goal was to develop a questionnaire and conducted a survey of parents. The survey was conducted on the basis of kindergarten №12 of Vitebsk, in the three groups. In the course of studying specific literature, to use mathematical showgirl.

Results and discussion. As a result of the survey, 57.7% of respondents have one child, 42.3% - two or more children. All respondents agree that physical education and sport are of great importance for the harmonious development of the child. 69% of parents used to be engaged in some kind of sport, 31% - never. In 54% of families at home there is not any sports equipment, and 46% - there is equipment for physical training. 57% of families sometimes doing morning exercises with children, 9% - this is done every day, and 34% - in general it never did. 27% of children attend different sections, 73% - have not engaged yet. Mostly girls attend classes associated with dancing directions and boy’s athletic sports (hockey, soccer, skiing, gymnastics). 42% of respondents keep to a regime of a day on weekends, 16% - do not adhere to the regime, and 42% - do it sometimes. 16% of parents spend with their children tempering activities such as washing with cold water, room ventilation, dousing with cold water and stop taking air baths, but 84% - do not spend tempering procedures. Due to parents heavy workload only 8% walk with children after the kindergarten, 77% - do not do it at all, and only 15% - sometimes. The question: "What place do you prefer to walk with a child?" - 73% said children's playground, 42% - the forest, 38% - the park, 34% prefer to visit places of cultural entertainment. 61% of children on weekends and evenings playing games, 54% - playing computer, 50% - play board games or they are engaged in folding puzzles, 46% - are engaged in watching TV, 42% - in a role-play role-playing games, 38% - devote time to designing, 27% - are involved in sports, and 16% - are addicted to musical-rhythmic activity.

Conclusion. Joint training of parents with children bring the following benefits: parents become interested in "motor maturity" of children and contributes to the development of motor skills in children according to their age and abilities; make the relationship of parents and children; provide an opportunity to work out deeper in a short period of time, not only a child but an adult: a parent shows a child certain exercises and performs the majority of them with him; allow us to spend our free time which a mother and a father devote to their child and all-round development of a child.

THE DYNAMICS OF PHYSICAL TRAINING OF GIRLS AT THE AGE OF 12–13 UNDER THE INFLUENCE OF PHYSICAL ACTIVITIES ON A HEALTH LANE WITH INCIDENTAL MUSIC IN SANATORIUM CONDITIONS

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Health of growing generation is one of the major problems of near and distant future of every country, as this population category presents reproductive, intellectual, economic, social and cultural reserve of any State [1, 2]. The current tendency to health deterioration of pupils living on the territory of Belarus, especially in regions of increased level of radioactive contamination, determines the *actualization* of physical education health-improving trend and researchers' and practicians' intent interest to modernization of the structure and the matter of physical education lessons in children's and sanatorium institutions [3, 4].

The search and development of new content of 12–13-years-old girls' physical education classes on a health lane with incidental music in the children's rehabilitation and recuperation center (CRRC) has identified the topic and the purpose of our research.

Purpose of our research: analysis of the dynamics of 12–13-years-old girls' physical preparedness under the influence of physical activities on a health lane with incidental music in the children's rehabilitation and recuperation center.

Material and methods. To achieve the set purpose a comparative pedagogical experiment was organized on the basis of CRRC «Zhemchyzhinka» of Vitebsk region during a sanatorium change from 14.06 to 07.07.2012. 41 girls at the age of 12–13, having a physical fitness level (PFL) above the average and belonging to the main health group took part in the experiment. According to the results of the draw a control (CG, n=20) and an experimental group (EG, n=21) were formulated. According to the program of the pedagogical experiment 18 physical education classes were attended by the pupils of CG and EG. Herewith in the CG was used a traditional method with cyclical nature exercises and in the EG – a health lane with incidental music developed by us.

In the process of pedagogical research, the following methods were used: analysis of the scientific and methodological literature, control and pedagogical tests, pedagogical experiment, mathematical and statistical methods.

Results and discussion. Mathematical processing of the data (table) at the beginning of the pedagogical experiment showed no significant differences in age, as well as in the most of the studied parameters of the CG and EG (P> 0,05) testees, indicating the homogeneity of the sample.

Table - Dynamics of the physical fitness of girls at the age of 12-13 years

RATES	Period of the research	Control group (n=20), age 12,00±0,51 years		Experimental group (n=21), age 12,62±0,59 years		Significance of the intergroup differences
		$\bar{X} \pm \sigma$	%	$\bar{X} \pm \sigma$	%	
PFL (points)	before	7,33±0,69	2,39	7,63±0,66	5,83	t=1,39; P>0,05
	after	7,51±1,74*		8,07±0,63**		t=2,82; P>0,05
1000 meters run (s)	before	309,40±13,28	0,89	304,57±11,76	1,86	U=157,50; P>0,05
	after	306,65±11,25*		298,90±8,74**		**t=2,47; P<0,05**
30 meters run (s)	before	5,82±0,27	0,52	5,97±0,22	0,64	t=1,98; P>0,05
	after	5,79±0,25*		5,93±0,23*		t=1,93; P>0,05
4x9 meters shuttle run (s)	before	10,78±0,43	0,23	10,78±0,26	0,66	U=193,00; P>0,05
	after	10,75±0,42		10,80±0,23**		U=203,00; P>0,05
Standing jump (sm)	before	160,50±9,43	1,53	1,64±5,53	1,88	U=153,50; P>0,05
	after	162,95±8,57**		168,05±4,93**		**U=135,50; P<0,05**
Tilting forward from a sitting position (sm)	before	6,95±2,01	4,23	7,52±2,42	8,86	U=184,50; P>0,05
	after	7,25±1,74*		8,19±2,06**		U=158,00; P>0,05
Raising the trunk per min (times)	before	37,35±4,98	1,20	41,05±3,28	0,58	**U=116,00; P<0,05**
	after	37,80±4,56*		41,29±3,36*		**U=120,00; P<0,05**

Notes: % - dynamics of indexes for the period of the experiment; PFL - physical fitness level, $\bar{X} \pm \sigma$ – arithmetical mean ± standard deviation, t – Student criterion, U – Mann-Whitney criterion, * – P<0,05; ** – P<0,01.

It was established, that the proposed contests of classes on a health lane with incidental music used in the EG allowed to achieve higher PFL of 12–13- years- old girls in relation to traditional activities organized in the CG. So EG testees' PFL for the period of pedagogical experiment increased by 5,83%, from 7,63 ± 0,66 to 8,07 ± 0,63 points (P <0.01), while in the CG these changes reached only 2,39%, from 7,33 ± 0,69 to 7,51 ± 1,74 points (P <0,05). EG's results of correlation analysis state high statistical connection of the PFL with indexes in running for 1000 (r=0,75) and 30 (r=0,69) meters.

It also should be noted that among EG girls more expressed development of the majority of the investigated motor qualities was observed. Statistically significant intergroup differences in the results of the standing jump were observed in the groups, 1,88% in the EG in comparison to 1,53% in the CG (P<0,05). In the results of the shuttle run 4x9 m significant intragroup differences at a level of<0.01 – 0.66% were established among the EG's girls, however, in the CG data changes are insignificant, and are at a level of 0,23% (P>0,05). A similar situation was observed in the results of tilt forward from a sitting position. In the EG results of pedagogical tests changed to 8,86% (P<0,01) and in the CG only to 4,23% (P<0,01). The changes in the results of raising the body per 1 minute present less interest, as at the beginning of the pedagogical experiment significant statistical differences between the groups were observed in them.

Conclusion. In the result of the pedagogical experiment it was established, that the regular classes on a heath lane with incidental music during a sanatorium change of children's rehabilitation and recuperation center contribute to more effective improvement of the PFL of 12–13-years-old girls' relatively traditional occupations. It is established that in the EG PFL growth is determined mainly due to the dynamics of the indicators in 1000 (r=0,75) and 30 (r=0,69) meters run. In our opinion, this circumstance is logically explained by using physical exercises of cyclical nature in the form of walking and running during the lesson, re-used by interval methods with clear regulation of the physical exercises parameters by means of incidental music on a health lane.

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FIRST-YEAR STUDENTS' ADAPTATION IN THE CONDITIONS OF A HIGHER EDUCATIONAL ESTABLISHMENT

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The problem of students' health is drawing more and more attention of researchers these days. Intensive educational activity, combining study with work, sessional periods are those factors which influence health of students, their working ability and adaptive potential of an organism. Efficiency of adaptation of an organism to different types of activity is defined by the degree of mechanisms of functions regulation reliability. In this regard the objective of this research is the assessment of level of adaptation of first-year students to educational activity during terms and sessional periods in the conditions of a higher educational establishment.

Material and methods. A complex psycho-physiological examination of the students of the faculties of physical culture and sports, social pedagogics and psychology was conducted .The degree of students' mental stress was determined by the Talyor's method of measuring the level of anxiety in Nemchinov's adaptation. As a method of evaluation of adaptation of adaptive ability of an organism, the method of mathematical analysis of heart rate was used in the research there used a hardware based complex «Omega-M».

Results and discussion. The results of the research show that during the intersession period the highest level of anxiety have 55.3% of students (FPC&S), and 64.8% of students (FSP&P). Practically the same number of the students surveyed in both faculties have an average with a tendency to low of anxiety 23.7%, (FPC&S), 17.6% (FSP&P). 21% of students (FPC&S), and 17.6% (FSP&P) have high level of anxiety. There are no students with very high and very low level of anxiety on both faculties. During intersession period first-year students show deficient degree of stress adaptation systems which is seen by the average index of stress 87.06 points and 111.95points respectively. Approximately 7% of students are characterized by unbalance of mechanisms of regulation.

Owing to the increase of mental and emotional load during sessional periods the number of students with a high rate of anxiety 30%(FPC&S), and 40%(FSP&P) grow. There are no first-year students with low level of stress in both faculties in this period. The received data show unsatisfactory psycho-emotional condition of first-year students. The quantity of IS is still in the area which is characterized by insufficient level of regulative mechanisms of an organism (92.03points-FPC&S, 112.3points- FSP&P). The number of first-year students of FSP&P with unbalance of mechanisms of regulation is 1.5 times higher those among the students of FPC&S.

Conclusion. Thus, first-year students adaptation to educational activity both during the sessional period and intersession period in the condition of higher educational establishment is accompanied by adverse changes in regulative systems of an organism. Taking it into consideration, one should pay attention to functional and psychological condition of first-year students during all the periods of study and hold preventive measures among them.

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CORRECTION OF PHYSICAL CONDITION OF STUDENTS THIRD TRIMESTER OF PREGNANCY AT HIGHER EDUCATION INSTITUTIONS

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Maintaining the health of pregnant women – the most urgent problem of the state. To date, one of the most important social problems – is the health status of women and their offspring. In the context of the demographic crisis in the country, the problem of preserving the health of pregnant women, and in particular students, is an important task of the state. Currently, the problems associated with complications of pregnancy, is one of the most urgent.

The purpose of research – analysis of changes in the functional parameters of the body of pregnant students in special classes by physical exercises, in accordance with the program of optional classes on discipline «Physical Culture» in the «Schools of the future mother».

Material and methods. To achieve this goal on the basis of the educational establishment «Vitebsk State University» in the «School of the future mom» we held sports and recreation activities with pregnant female students for the first time organized in the framework of the pedagogical experiment in the period from April 2014 to June 2014 (third trimester).

Methods: analysis of the scientific and methodological literature, pedagogical experiment, the methods of mathematical statistics.

Results and discussion. As result of the pedagogical experiment, we obtained the following data (Table 1).

According to the results of the questionnaire, functional parameters and evaluate the effectiveness of the pilot program testing physical exercise, pregnant students of the third trimester of pregnancy, in the CG had a higher heart rate 90,25±1,49 beats/min. compared with pregnant students of the third trimester of EG in which the heart rate was 84,75±1,04 beats/min. The data obtained show a slight improvement of myocardial contractility, increased elasticity of the blood vessels of pregnant students involved physical exercises, which in turn affects the overall health of students.

Table 1

Functional indicators accounting effectiveness of the exercise by pregnant female students (third trimester) control and experimental groups

Showing	III trimester of pregnancy CG (n=8)		%	III trimester of pregnancy EG (n=8)		%	Veracity (P)
	$\bar{X}\pm\delta$			$\bar{X}\pm\delta$			
HR, beats/min.	83,75±2,92	90,25±1,49	7,76	83,13±3,60	84,75±1,04	1,95	> 0,05
$BP_{syst.}$, millimeters of mercury	113,50±1,77	108,00±2,00	-4,85	116,87±1,64	120,13±0,99	2,80	> 0,05
$BP_{dias.}$, millimeters of mercury	75,25±3,45	71,63±3,31	-4,81	75,36±2,06	79,13±3,06	5,00	> 0,05
RR	16,50±4,24	22,00±1,85	33,33	17,38±1,21	18,13±1,62	4,32	> 0,05
CE, cm	6,00±1,41	5,50±0,87	-8,33	6,13±0,60	7,50±1,07	22,35	> 0,05
VC, mm	2600±320	2187±127	-15,88	3200±173	3462±121	8,19	> 0,05
Dynamometers (left hand), kg	19,38±1,11	17,38±0,	-10,32	21,25±0,83	23,75±0,66	11,76	< 0,05
Dynamometers (right hand), kg	25,00±1,58	22,25±1,09	-11,00	26,25±1,48	28,00±0,76	6,66	> 0,05

Note: CG - control group; EG - the experimental group; $\bar{X}\pm\delta$ - the arithmetic mean ± standard deviation; % - the dynamics of the index over the period of the pedagogical experiment, as a percentage; HR - heart rate; $BP_{syst.}$ - blood pressure (systolic); $BP_{diast.}$ - blood pressure (diastolic); RR - respiratory rate; CE - chest excursion; VC - vital capacity.

According to the results of blood pressure: namely CG $BP_{syst.}$ ranged 108,00±2,00 mm.hg and $BP_{diast.}$ equal to 71,63±3,31 mm.hg in EG $BP_{syst.}$ was 120,13±0,99 mm.hg and $BP_{.}$ equal to 79,13±3,06 mm.hg. These indicators show the best work of the heart, circulatory system and the best adaptive reactions of pregnant students to exercise.

When analyzing the performance of respiratory rate is within the acceptable norms we received minor change them accordingly in the CG RR - 22,00±1,85, in EG – 18,13±1,62.

In the study of external respiration CG and EG was found a significant increase in performance VC pregnant students to exercise, in the CG VC was 2187±127 ml, and EG 3462±121 ml. Due to physical exercise and regular exercise changes the volume of the lungs, develops muscles of the chest and her strength and as a result increases the VC in pregnant students EG.

Chest excursion in CG was 5,50±0,87 cm, and EG 7,50±1,07 cm. These indicators show a better performance of the functions of breathing in pregnant students EG.

CG muscle strength of the right hand was 22,25±1,09 kg, left 17,38±0,86 kg. Do students EG muscle strength of the right hand 28,00±0,76 kg, and muscle strength of the left hand 23,75±0,66 kg. A study of carpal absolute indicators of muscle strength, it was found that pregnant students by a special set of physical exercises there is a significant increase in performance dynamometer.

Thus, pregnant students involved performing physical exercises, in general, tend to improve the study of functional parameters.

Comparative characteristics, the functional state of the students of the third trimester of pregnancy indicate the reliability of the changes in the EG. Then in the CG there is a significant decrease in heart rateat 7,76%, $BP_{syst.}$ – 4,85%, $BP_{diast.}$ – 4,81%, RR – 33,33%, CE – 8,33%, VC – 15,88%, left hand dynamometry is – 10,32% and right hand dynamometry – 11,00%.

Conclusion. The introduction in the educational process methodology of fitness training «School of the future mom» for the students of the third trimester of full-time education by unsportsmanlike specialties in higher education institutions in accordance with the program of optional classes on discipline «Physical Culture», confirmed its effectiveness.

SPORTS TRACKING AUTOMATION WITH MOBILE INFORMATION TECHNOLOGIES

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With the increasing popularity of sports games in the modern society, there is a growing demand for an acceleration of sports information acquisition and analysis. On the other hand, there is a huge number of information technology achievements in the world of mobile handsets and tablets which are being widely distributed nowadays. The idea to bring these two facts together has drawn up an elegant solution to apply enhancing capabilities of the up-to-date mobile devices and satisfy the need for sports tracking automation.

Material and methods. Every sports game is tightly bound with some systems of running the competition, has its special game rules for scoring and the winner determination, game evaluation statistical parameters, the statistics describing the players and the tournament. Normally all this information makes sense and is highly important for players, coaches, fans and other stakeholders. Besides that the following items usually mean a value for the stakeholders: the player profile, the preferences in the game equipment usage, the media recording of the game or its fragments, the photos of the participants and important game moments, the referee comments, game or tournament location data, the time mapping of the above information.

Thanks to the fact, that modern mobile devices are embedded with a big quantity of various sensors and possess operating systems providing high performance and ease of operation, the devices are capable of sports data acquisition of any type. A development of a special software leveraging the capabilities of the popular mobile devices can facilitate, accelerate and simplify the process of sports data acquisition as well as attract more attention to the sports from stakeholders.

Results and discussion. A special software package has been created to collect, process and store the sports information. The package consists of the web site, the web services and the mobile application. The web application is based on the ASP.NET MVC 4 [1]. The web services comply with the REST invocation style leveraging Web API [2]. The mobile application has been written for the popular operating system Android [3].

The web site serves as a source of processed sports information for the stakeholders, grouping it by sports clubs, tournaments or players. Any sports club member can trigger a new tournament, invite the other users of the system to take part in it and can handle incoming requests for participation. Based on the system of running the competition the software automatically generates the order of the games. The players assigned for the game choose a referee from the list of system users, who are not related to the tournament.

At the time of the game the referee uses the mobile application. The application facilitates acquisition of the game relevant information. The application controls the game scoring rules, expecting from the user only minimum input about who scores at a successive game stage. Optionally extra data can be provided like stage result details or various media information.

The collected information is combined by the mobile application and is sent to the web services for analysis and storing. Because the information is sent in portions representing every stage of the game, it becomes immediately available for the live transmission to the stakeholders. At the end of the game the services generate reports and notify the game information subscribers. A detailed history of achievements is stored for every user within the related sports club.

Conclusion. A new software package for the sports tracking automation significantly simplifies and accelerates the process of sports data acquisition. It gives possibilities for the players and their coaches – to analyze and assess the completed games, for the fans, tournament participants and other stakeholders – to catch up with the latest sports events among amateurs.

Except of being a tool for achievements analysis, the software package is aimed at promotion of the amateur sports skills to the professional sport, by placing the users with achievements in the spotlight.

The software package can be useful for any companies which need sports tracking and sports data analysis automation like sports schools, sports clubs, sports clothes and equipment producers, National Olympic Committees, and other sport-oriented organizations.

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INDICATORS SPECIAL PHYSICAL PREPAREDNESS OF YOUNG HOCKEY PLAYERS

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Ice hockey is one of the most complex, multi-component, situational sports requiring instantaneous evaluation and selection of a complex action under time pressure.

Ice hockey – a collective game, which is a particular form of wrestling within the existing rules. Increasing the speed and increase the rigidity of the game forced to pay attention to the condition of the player.

The maximum rate throughout the match – a basic requirement of modern hockey [2, p. 220].

Preparing young players – a complex, multifaceted and long process. Young hockey players reach high functional parameters through physical training, which also increases the level of motor abilities, creating in turn the basis of performance of the player.

The purpose of research – determining the dynamics of special physical readiness in young players to long-term training process.

Material and methods. The study used the following methods:

– Analysis and synthesis of scientific and methodical literature;
– Pedagogical supervision;
– Control and pedagogical tests;
– Methods of mathematical statistics.

To assess the level of special physical readiness test case used - skating 36 feet face forward and skating 36 meters backwards. The test was performed according to the method developed by Y.V. Nikonov [1, p. 82].

The study involved young hockey players: the group of initial training – 1 (GIT-1) – 14 people; group of initial training – 2 (GIT-2) – 14 people; group initial training – 3 (GIT-3) – 12 people; training groups – 1 (TG-1) – 12; a training group – 2 (TG-2) - 10; training groups – 3 (TG-3) – 10; a training group – 4 (TG-4) – 10; a training group – 5 (TG-5) – 10; group of sports perfection – 1 (GSP-1) – 6 people; group sports perfection – 2 (GSP-2) – 6 people; group of sports perfection – 3 (GSP-3) – 6 person.

Results and discussion. As the table shows indicators special physical preparedness for example skating 36 feet face forward and skating backwards 36 meters improved with age, reaching the highest values at the age of 17 years. It is important to note that in the age of 14–15 years, the results of young hockey players are stabilized in this test as skating 36 feet face forward (see table).

Table – Indicators of special physical preparedness of young hockey players aged 7–17

Group, age	Tests, statistical parameters					
	Skating 36 m face forward			Skating 36 m back forward		
	$\bar{x}$	σ	v	$\bar{x}$	σ	v
GIT–1, 7 years	7,9	0,42	5,3	10,9	0,54	4,9
GIT–2, 8 years	7,2	0,47	6,5	9,4	0,69	7,3
GIT–3, 9 years	6,3	0,31	4,9	7,9	0,21	2,6
TG–1,10 years	6,2	0,48	7,7	8,3	0,33	3,9
TG–2,11 years	5,7	0,52	9,1	7,4	0,31	4,1
TG–3,12 years	5,5	0,45	8,1	7,1	0,27	3,8
TG–4,13 years	5,4	0,44	8,1	6,9	0,25	3,6
TG–5,14 years	5,1	0,22	4,3	6,7	0,27	4,0
GSP–1,15 years	5,1	0,27	5,2	6,4	0,25	3,9
GSP–2,16 years	5,2	0,21	4,0	6,3	0,24	3,8
GSP–3,17 years	5,0	0,28	5,6	6,1	0,22	3,6

Conclusion. Thus, in the long-term training of young hockey players special physical preparedness indicators are positive ascending dynamics.

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ECONOMICS

PERSONNEL POTENTIAL OF THE BELARUSIAN SCIENCE AS A FACTOR OF INNOVATIVE DEVELOPMENT

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In the conditions of scientific and technical revolution, continuous studying and introduction in production of new technologies, as a result of increase of level of the software, in connection with continuous growth of need for receiving operational information and for a set of other reasons it is necessary to pay close attention to the importance of the intellectual capital in the modern world.

The intellectual capital in modern society becomes a basis of wealth and defines competitiveness of economic systems, acts as a key resource of growth and development as factors of non-material character, unique by the nature, cause competitive advantages of the countries in the world market. At the present stage the intellectual capital is of particular importance, it defines structure of national economy, quality of the production and services, efficiency of economy functioning. The intellectual capital is also one of the most important factors of innovative development of the country. Ability of economy to create and use effectively the intellectual capital increasingly influences the economic force of the nation and its welfare. The increasing value of the intellectual capital becomes clear not only for heads of the separate companies and organizations, but also for politicians of many countries in the world.

The purpose of this work is to consider features of personnel potential of the Belarusian science as factor of innovative development.

Material and methods: the system approach, monographic, the comparative analysis, statistical, expert estimations.

Results and discussion. One of the main operating conditions of national innovative system is presence of the highly qualified specialists who own knowledge and skills of research activity professionally [3]. It should be noted that now development of the Belarusian science meets certain difficulties.

First of all it is so-called deformation of age structure, or aging of scientific personnel. So, persons of retirement age among doctors of science in 2013 make more than 60%, among candidates of science – more than 40% of the total number of scientific personnel in Belarus [1]. These figures testify that the youth isn't interested in devoting their lives to the belarusian science.

One more problem in the sphere of personnel potential of science of Republic of Belarus is insufficient, in comparison with a business sector, salary level, lack of due updating of material base of science and information support of scientific and technical activity. In many respects these factors are also the reason of outflow of youth from the sphere of science.

It is also impossible to recognize optimum the size of specific internal costs of scientific researches and development. So, on statistical data, in 2013 it made 0,69% to GDP of Republic of Belarus. For comparison: in 2011 this indicator made 0,7%. And it reached the greatest value in 2007 – 0,96% of GDP of the country [1]. It should be noted that the level of specific costs of scientific research and development lower than 1% is critical, according to experts [3].

To solve a problem of personnel potential in the scientific sphere of Belarus, it is necessary to take the following steps: to increase expenses on research and development to the level of 2,5-2,9% from GDP by 2015; to create personnel potential taking into account the priority directions of scientific and technical activity; to attract investments into secondary vocational and higher education according to inquiries of the formed innovative labor market; to increase the level of social protection of scientists, the social status of the scientist and prestigiousness of scientific work; to improve material and information support of scientific activity [2].

Specific actions have already being taken for revival of personnel potential of the Belarusian economy according to the State program of innovative development of Republic of Belarus for 2011-2015 which sets a task of scientific ensuring priority development of the leading industries on which in the greatest measure decisive shifts in the field of national economy depend. Results of its performance for 2012-2013 became: optimization and reduction of number of the state comprehensive target scientific and technical programs and the state scientific and technical programs entering their number for concentration of financial means on the perspective scientific directions and "breakthrough" development; the accreditation of the scientific organizations which was carried out in 2012, certification of scientific laboratories, optimization of number and structure of National academy of Sciences of Belarus, its structuring in scientific and practical associations and the centers; attraction of a business sector which is still insufficiently active in this direction has to become an essential component of development and maintenance of the scientific sphere of the country. There are positive examples among the companies, such «Golograficheskaya industriya», "Adani" and "Magnomed" [2].

Conclusion. As we see, there are still problems in the sphere of scientific and innovative activity in Republic of Belarus . However specific actions which will help to remove the Belarusian science on new, comparable to the international standards, level are being taken. The prospects opening at the moment refer to the support on the available highly skilled personnel resources and schools of sciences recognized in the world to create innovative culture as the favorable environment which will promote fundamental scientific breaks, strengthening of the new technological directions, formation on their base of highly effective competitive economy which, in turn, will become a starting point for improvement of the Belarusian social and economic model.

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IMPORT SUBSTITUTION IN TERMS OF INNOVATIVE DEVELOPMENT ECONOMY

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Import substitution is a type of economic policy and industrial policy, aimed at protecting domestic producers by replacing imported goods manufactured goods of national production. The result of import substitution should be improving the competitiveness of domestic production by stimulating technological modernization of production, increase its efficiency and the development of new competitive products with relatively high added value, as well as the preservation and accumulation of foreign exchange reserves of the country [1].

Today Belarus trades with 186 countries. Products are exported to 143 countries, imported from 166. In the republic there are 15 thousand. Importers and exporters as well [4].

Results and discussion. The most profitable option for the economy of the Republic of Belarus is the development of production on local resources. This is the main reserve of import substitution, labor productivity growth, increasing the depth of processing of local raw materials. Strategic directions in this regard: woodworking, mining and processing of potash, as well as the production of construction materials. The country has a unified scheme of import substitution, whereby the three groups of goods. First - are goods, analogues of which are produced in Belarus, but lose in quality imported or demand, but are produced in insufficient quantities. The task of the ministries and regions - to enhance their competitiveness and expand existing capacity. In 2011, for the first time managed to reach a positive balance in this group of products. At the same time, this result is not achieved due to structural changes in the economy, but due to monetary factors.

Second - products that are not produced in the country is not being developed under government programs and activities. Under their production creates new capacity. This is a classic example of direct import. For these goods in 2011 reached a zero balance of foreign trade. Third - goods that are imported, as their production in Belarus was considered unwise, and that 16% of all imports. These products belong to the so-called "critical imports" [2, p.44]. The main article for Belarus energy. Them to one of the closest in the list of goods lattice grill. Furthermore Giftware screws, nuts, screws. The entry of the Republic of Belarus in the world economic community and preserving at the same time their economic independence of the country confront the task of translating the national economy on a path of innovative development of import substitution. In addition, a synergistic effect resulting from the combination of the effective implementation imporozameschayuschey and innovation policy will minimize the negative effects of the global economic crisis. The task of the foreign trade policy of the state is the formation of an innovative national model of import substitution and establish a system of incentives that will help balance the relative effectiveness of various import-substituting industries and thus to support national production of innovative products while fostering innovative production for export [3, p. 30].

In order to improve the regulation of the development of public policy of import substitution and export-oriented industries are the following priority areas:

1. Develop a system of measures to support the import-substituting industries, which include:

a) the development of proposals for the production enterprises of certain goods, the provision of support measures (subject to their effective functioning). Proposals are developed on the basis of market research, taking into account the financial condition of producers; b) development of a mechanism to increase the competitiveness of products, namely:

- Promote the development of standardization and certification of products,
- Improving the quality of production management systems,
- Promoting innovation,
- The creation of favorable conditions for private investment in the development of new technologies,
- State support of leasing activity for the purpose of development of high-tech industries,
- Improvement of the system of financing and information provision exhibition activity;

c) the development of proposals for the replacement of imported components at competitive domestic with the formation of closed process chains;

g) tax incentives for import substitution;

d) the question of protecting the domestic market from imports, the establishment of economically viable tariff barriers;

e) The establishment of quality control of imported products, the import ban, the organization antiadvertising defective and harmful products;

g) the development of measures to support the economic production of their own competitive products instead of imported. Keep in mind that domestic producers have the economic advantage of minimal transport costs.

Conclusion. Thus, an effective mechanism not only the integration of a small open economy in a global, but also to ensure its national security is a long-term strategy of import substitution innovation. Innovation is a part of the import substitution policies of import protectionism, aimed at stimulating national production and producer with a view to displacing imports from the production of new products or services that are based on innovative ideas, advanced technologies, achieving self-sufficiency and reorienting consumer demand for domestic products.

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INTELLECTUAL CAPITAL IN THE INNOVATION ECONOMY

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Intellectual capital in modern society becomes the basis of wealth and determines the competitiveness of economic systems, is a key resource for growth and development. With it, the economy becomes more information-intensive, technology-oriented and innovation. The economy's ability to create and use intellectual capital increasingly determines the economic strength of the nation and its welfare.

Results and discussion. Intellectual capital is intangible assets, without which the company can not exist, increasing competitive advantage. The constituent parts of intellectual capital are: human capital (knowledge, skills, experience and qualifications of staff); intellectual property, or structural capital (the rights to industrial property, protected by patents and licenses, copyrights, know-how); customer capital or marketable assets (contracts, orders, sales opportunities, trademarks); organizational capital, or infrastructure assets (traditions, goals, company culture, management philosophy, business processes, internal networks, systems, databases).

Characterizing the category of "intellectual capital", you must select the following features:

- In modern terms this form of capital determines the main trends of economic growth;
- The formation of intellectual capital demands on the individual and society large and increasing costs;
- Its accumulation in the form of knowledge, skills and experience of the staff of the enterprise;
- The accumulation of intellectual capital of its yield increases up to a certain limit, the upper limit of the limited active labor (active working age), and then decreases sharply;
- The nature and types of investment in intellectual capital due to historical, national, cultural characteristics and traditions;
- Investment in intellectual capital should provide its owner receive a higher income;
- Investments in intellectual capital gives quite significant in terms of volume, long-time and integrated over the nature of economic and social effects;
- Intellectual capital is different from physical capital in the degree of liquidity, it is not the current assets; only its individual elements or services that are suitable for the patenting of knowledge can be bought or sold;
- The use of intellectual capital is always controlled by the individual regardless of the source of investment in its development;
- The functioning of the intellectual capital, the degree of the impact of its use due to the free will of the subject, his individual interests and preferences, its material and moral interest, responsibility, outlook and the general level of culture, including economic [1].

Intellectual capital sets the pace and nature of the production technology and upgrade its products, which then become the main competitive advantage in the market. Quality intellectual resources and the extent of their involvement in social production have a direct impact on economic growth and the level of national wealth. Intellectual capital of the nation is creating a society of certain material and technical conditions for the formation and development of the productive capacity of people. On the development of total intellectual capital of the country directly affected by such factors as the cost of education, science, culture, public health, environmental protection, improved working conditions, investment in production and marketing sector.

Intellectual capital is inextricably linked with the innovation development. The centerpiece of the intellectual capital in the production of human capital appears that forms of interaction and networking, through effective team work allows you to organize the innovation process, as part of structural capital, which, in turn, determines the efficiency of the innovation process, and the effect on innovation.

In recent years, in the Republic of Belarus conducted purposeful work on the preservation and development of scientific, technological and innovation capacities. Improve the management system of science, to expand and strengthen the basis of the modern legal and regulatory framework of scientific and innovation activities, reorganize academic and university science, take measures to raise the level of innovation of production, the development of information infrastructure and innovation, small and medium-sized high-tech enterprises, complex high technology etc. All these measures were not, however, a systemic nature and tries to establish the adequate development of market relations and the international standards of the national innovation system of Belarus.

An important socio-economic objective of the present stage of development is to ensure a high level of innovation activity of Belarusian enterprises. However, the implementation of a significant part of innovation enterprises faced with such negative factors as the lack of own sources of funds, high interest rates, high rates of construction and equipment, high inflation, lack of creditworthiness and others. Therefore, reducing or eliminating the impact of negative factors on innovation activity is a priority of the state.

At the same time, it is worth noting that the index of knowledge (the ability to generate, receive and disseminate scientific knowledge) in the ranking of 146 countries in the world in recent years, Belarus has risen from 52th to 45th place [2].

According to the index of the knowledge economy (presence in the country the conditions for the effective use of scientific knowledge for economic development), the Republic of Belarus has risen from 73 th to 59 th place [2].

Conclusion. Thus, it can be argued that Belarus is doing the right steps in its innovative development. This is evidenced by the international ratings. However, in order to achieve sustainable growth in the future, there should be an increase in the cost of development, training and development of new types of high technology and high-tech products, pay close attention to the performance of organizations and the impact of innovation. Work on the construction of an innovative economy in Belarus should include dynamic advancement in the following areas: human capital development of high quality; construction of a modern market innovation system; adaptation processes; development of the sphere of advanced services; informatization and building the network economy; sustainable development of the territories.

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INTELLECTUAL SECURITY UNDER GLOBALIZATION

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Modern economics has paid close attention to the study of such problems as providing national security intelligence in the state of the global economy. This is particularly a problem for the economy of the Republic of Belarus, located on the stage of transformation of the economic system. In the XXI century can't be considered socio-economic phenomena in isolation from the process of globalization of the world economy. Globalization is a complex and multifaceted phenomenon, encompassing all aspects of public life. In modern conditions, the transformation of the economic system of knowledge and intelligence are among the key factors contributing to long-term success in the economy of any country.

Results and discussion. Smart Security is an essential part of national security as a whole, as well as the most important component of national economic security. It not only refers to other forms of economic security, but also provides the foundation for most of them. National security intelligence - a state of protection of public intellectual resources, intellectual property rights of citizens, scientific and creative teams, science and education of real and potential threats [1, p. 441].

In many countries, intellectual security is part of the living economy, social and political issues. In case of failure to achieve the required level of security of intellectual intellectual crisis could turn into a serious problem that affects the economy, and national security information. Considering the nature and the growing importance of intellectual security, we can conclude that it has become one of the most "alive" preconditions for the growth of the world economy. On the other hand, the intelligent security set to such an important area of the economy, as the transformation of knowledge, having all of the increasing volume and rapid growth.

With the system approach is appropriate to talk about national security intelligence in several aspects. In the first place, as part of - the subsystem of a higher level, which is national security, and secondly, the national intellectual security should be considered a complex multilevel system including its subsystems (components) of a lower order, and third, the national intellectual security should be considered as an internal or external condition or position of a state in which there are no real and potential threats to the intellectual interests of the individual, society and state, and when they occur - as a system of measures to ensure the safety and protection of media intelligence and products of their intellectual labor. In this connection, the National Intellectual security advisable to provide a complex system that includes at least three levels of subsystems.

Indispensable for national security is the accumulation and preservation of intellectual capital. In modern conditions, economics focuses on the study of the role of intellectual capital in ensuring the effective functioning of the process of economic systems, their intense development and improving the quality of production. It is important to note that the study of the mechanisms of its influence on economic processes are usually based on the fact that the impact of its constituents, and especially human resources, is qualitatively different from the use of logistical assets of enterprises and organizations. Currently intellectual capital becomes the basis of society's wealth and determines the competitiveness of economic systems, is a key factor for economic growth and sustainable development, as it is unique by nature intangible resources determine competitive advantage. During use and transformation of intellectual capital employed commercial organizations, state and public institutions. With the help of the effective use of the intellectual capital of the state's economy is becoming more technological, information and innovation. Intellectual capital is of particular importance, ie. It has the ability to determine the structure of the national economy of the state as a whole, and the performance of the business entities in particular. The ability of the national economy to accumulate, preserve and leverage intellectual capital affects the welfare of the state.

Main directions of national security intelligence in the Republic of Belarus are based on the intellectual independence of the country in conditions of inclusion in the global division and cooperation, harmonization of state innovation and education policies, as well as the implementation of the priority directions of scientific and technical sphere.

The Republic of Belarus has enough intellectual capital to ensure its national security intelligence. Based on data from the World Bank, the index of the knowledge economy Belarus occupies position 59 of the 146 countries of the world. At the same time, Belarus has the lowest rates on the most important indicators of intellectual security, indicating that the lack of effective use of the intellectual capital of the country. In 2013, the research intensity of GDP was 0.69%, which is below the critical level at 1%, while domestic expenditure on research and development in the developed countries reach 3%, and in such small countries like Sweden and Finland, it reaches milestone of 4%. Recently, the country reduced the number of organizations that perform research and development, so in 2013 there were 482 units, down 9.05% less in relation to the level of 2012. Together, these factors threaten the maintenance of national security intellectual state. [2]

Among the most important directions of the state policy in the field of national security of Belarus intellectual expedient to identify the following: an increase in domestic expenditure on research and development; financial support for innovative projects in the organization and conduct of the research and development; orientation of research and innovation at the preferential development of science-intensive and resource industries and technologies; increase the prestige of the scientific and technical creativity of labor; mutually beneficial cooperation with other countries, to create conditions for attracting foreign investments to the development of science and technology, development of new technologies and new products.

Conclusion. Thus, in terms of increasing the role of knowledge as one of the most important elements of the productive forces of society, the state seeks to ensure a high level of intellectual security. In real time, intellectual capital is a major factor in the progress of society, includes national achievements in the field of scientific thought and educational technology. It is a potentially inexhaustible economic growth. All this makes it necessary to ensure national security state in intellectual knowledge economy.

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