THE YOUTH OF THE 21st CENTURY: EDUCATION, SCIENCE, INNOVATIONS

Proceedings of V International Conference for Students, Postgraduates and Young Scientists

Vitebsk, December 12, 2018

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The collection of articles includes the Conference proceedings submitted by the authors at the International Conference for Students, Postgraduates and Young Scientists "The Youth of the 21st Century: Education, Science, Innovations" and dedicated to solving current scientific issues in natural sciences, technical sciences and humanities. The articles may be used by scientists, teachers, postgraduates, undergraduates and students of higher educational establishments.

THE YOUTH OF THE 21ST CENTURY: TRADITIONS AND PROSPECTS

The research work in Vitebsk State University named after P.M. Masherov is one of the major priorities promoting training of qualified modern specialists. The University places emphasis upon encouraging young scholars to conduct scientific research as early in their career as possible, to support their scientific enquiry and promote their further innovative activity.

Annually the university acts as a forum for scientific events attended by both experienced scholars and scholars who are taking their first steps in science. Among the events is the international conference for undergraduates, graduates, postgraduates and young scientists "The Youth of the 21st Century: Education, Science, Innovations". The first conference meeting took place in 2014. Since then every year in December Vitebsk University has been gathering aspiring scientific youth to present the findings of their research in English.

The main targets of this large-scale scientific event are to strengthen cooperation between higher educational establishments and to help young scholars achieve excellence in their aspirations.

The conference is intended for young scientists from educational establishments of Belarus as well as foreign countries.

The sections work in different directions. Every year in accordance with new tendencies in modern science amendments are made.

During the conference young scientists present findings of their research and the chairpersons decide on the best reports. The work of the sections has received favourable reviews from both the participants and the chairpersons. Our conference gives young scholars an opportunity to test their findings, get outside recommendations concerning their further research and broaden the circle of their professional communication.

The conference has a relevant format with English as the working language because it is the language for international scientific discourse. It should be mentioned that only a part of the reports for publication were submitted by scholars from English speaking countries.

This conference gives you an opportunity to make a good start and promote your findings at the international level.

Maryna Darafeyenka,
candidate of Philological Sciences,
associate professor of department of world languages,
head of students' scientific society

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

LASER ENGRAVING MACHINES MODELING.
CONTROL PROBLEMS

D. Biryukova, A.Shidlowsky
VSU named after P.M. Masherov, Vitebsk, Belarus

A wide range of laser engraving machines is available on the computer hardware market. Qualified installation and further control of such equipment is vital to operate it appropriately.

The goal of this study is to develop a control system for a laser engraving machine.

Material and methods. In this research we studied a laser engraving machinemodel. We applied digital modeling methods and software development technics; we used DRV8825, A4988 drivers.

Findings and their discussion. We designed a laser engraving machine model in Solidworks program. The physical deviceis built in accordance with this model.

The Arduino UNO (Image 1) microcontroller board based on the microchip ATmega328P forms the core of the engraving machine control system. Simplicity and versatilityare the main advantages of the Arduino UNO as well asa USB interface to connect the board to a computer. The board can be supplied with power either by an AC/DC adapter, a USB cable or by an external battery.
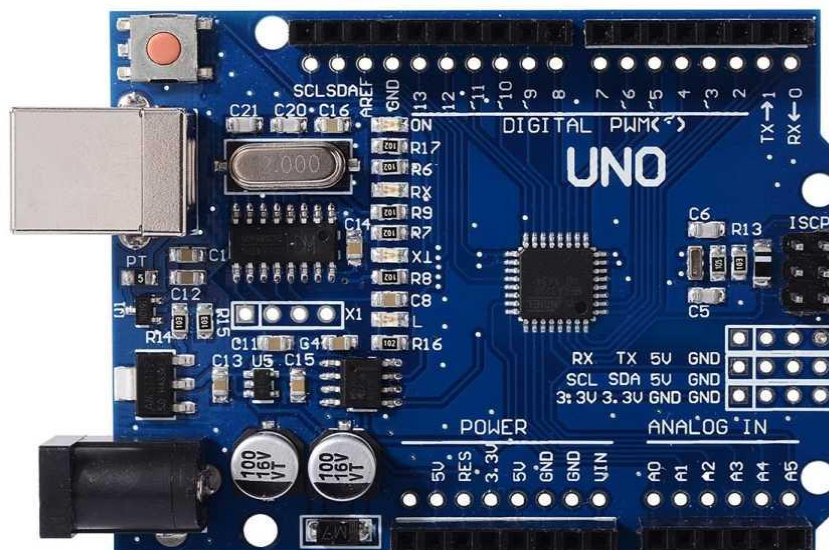
Image 1. Arduino UNO

The NEMA 17, 1.7A stepper motors were usedtomoveto position the axes carriages. The motors are controlled by the drivers DRV8825 or A4988(Image 2). These drivers different their step microstepping parameters and maximum allowed current.

Image 2. Drivers DRV8825 and A4988

The motor controllingdriver connects to the control systemthroughthe CNC Shield v.3.0 extension chipboarddesigned to be used in engraving or millingmachines with digital program control system based on the Arduino UNO microcontroller.

CNC Shield v.3.0 (Image 3) extension chipboard communicates with Arduino UNO and the motor drivers via Arduino GRBL software.The software and the hardware interact via G-code.

Image 3. CNC Shield v.3.0

Conclusion. The result soft here search were presented at the 1Internationalcontest "The Quality of Education – 2018". The project won the 1prize.

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1. Arduino For Dummies / John Nussey, 2013. – 446 p.
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USING THE MOBILE APPLICATION «PLICKERS» TO TEST THE KNOWLEDGE OF STUDENTS

N. Bondarenko
VSU named after P.M. Masherov, Vitebsk, Belarus

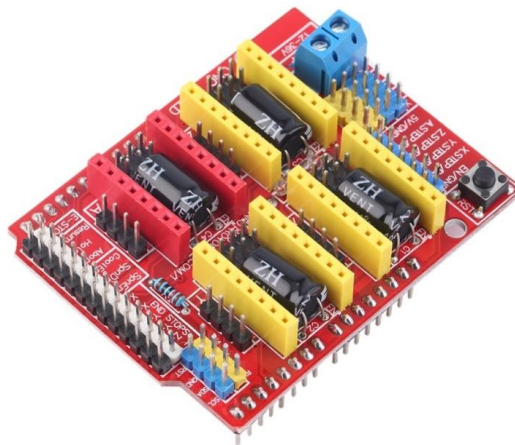In the modern world, almost every student in secondary school has a mobile device. Moreover, schoolchildren use mobile devices not only for entertainment or for obtaining diverse information, but also for solving various educational issues. In this regard, the importance of mobile applications is growing in education, and the main reason of it is the opportunities they provide: the joint work of students on the tasks during the lesson and in extracurricular activities; file sharing; organization of distance learning and interaction with parents.

Great importance in the educational process has the testing of knowledge and skills received by the student. By the way, traditional form of testing, which is often used, has several disadvantages. They are: low efficiency in conditions of mass education, time consuming, subjectivism. The most effective way to test knowledge, which is used in education more increasingly, is computer testing. The convenience of this type of knowledge testing is provided by the ability of quick analyze of the correctness of the answers and storage of the results of students' work. However, for such forms of testing computer classes are required in which the number of seats is limited.

For the organization of various types of knowledge testing, you can use the mobile application developed by the founder of the company «Plickers» and a high school math teacher in Richmond (California) Nolan Amy [1]. Through the use of QR- codes, a special program «Plickers» allows you to evaluate the answers of students instantly when conducting a frontal survey (written or oral) [2].

The purpose of the research at this stage is to investigate the functional and didactic possibilities of the «Plickers» program for testing students' knowledge when studying functions at the lessons of algebra.

Material and methods. The pedagogical experiment was conducted with students of 8 "A" class "State school № 45 Vitebsk." In the experiment the program «Plickers», a smartphone under iOS or Android running were used.

Findings and their discussion. The «Plickers» program is installed on the tablet or the phone of the teacher (under iOS or Android running) in order to read QR-codes from students' cards. A list of the class is created in the application with the help of it you can find out exactly how each student answered the questions. The program «Plickers» builds diagrams of answers and allows you to establish quickly the level of learning and the formation of skills of students.

The pedagogical experiment was conducted out after studying the topic "Quadratic function". In the application a list of nine tasks was made on the studied topic. To make a task you can use a text or an image.

During the experiment each student received a special square card, the layout of it is available for download on the official website of the program [2]. The sides of the cards correspond to the answers of the tasks presented by the teacher (A, B, C, D). After the presentation and making the task participants of the experiment almost at the same time lifted the cards up with the answer by that side, which they consider correct.

Figure 1 – raising cards

Using the «Plickers» mobile application installed on the teacher's smartphone the answers were scanned instantly. They are saved in a database and can be displayed on the screen of a mobile phone. In addition, the teacher has the opportunity to export the results to an Excel table, where they will be processed and systematized. Scan results can be analyzed directly during the survey or after it.

The table displays: a list of students who participated in the survey, a list of asked questions and the percentage of correct and incorrect answers. For clarity, diagrams are compiled.

This table allows the teacher to analyze quickly the level of learning the material of the whole class and each student individually.

As a result of the experiment, the following difficulty was revealed: the teacher needs to ensure that QR-codes are not obstructed by scanning.

Otherwise, there are problems with their reading by the mobile device. This difficulty is easily overcome after several uses of the application.

In our opinion, «the Plickers» program can be used to organize various types of knowledge testing: preliminary (diagnostic) testing, used to study the level of students' readiness for perception of new material; current testing designed to check the learning of the previous material; thematic testing, the purpose of which is to compile and systematize the educational material of the whole topic; final testing, aimed at checking the specific learning outcomes.

Conclusion. Practical use of the mobile application «Plickers» allows you to reduce the time required to survey students, to visualize the results of testing and analyze the level of learning the studied material.

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ANALYTICAL SOLUTION OF CUBIC MATRIX EQUATIONS WITH COMMUTATIVE MATRIX FACTORS OF SIZE [2X2]

M. Chernyavsky
VSU named after P.M. Masherov, Vitebsk, Belarus

Nonlinear matrix equations are found in numerous applications. Iterative methods, for example, modification of the method of Newton-Kantorovich and algorithm Bernoulli are often used for their solutions [1–2]. Also, the exact analytical solution for some types of matrix nonlinear equations, in particular, cubic ones, is interesting.

The aim of the research is to present an algorithm for the exact analytical finding of a cubic matrix equation with commutative matrices-coefficients of size $[2 \times 2]$.

Material and methods. The material of the research is cubic matrix equations with commutative coefficients and methods of their solution. Research methods-methods of mathematical and functional analysis.

Findings and their discussion. It is necessary to remind that in the scalar case of the solution of the cubic equation with complex coefficients of the form (1) can be found using the formula Cardano (2) [3, p. 235]:

$$x^3 + px + q = 0 \qquad (1)$$

$$x = \alpha + \beta = \sqrt[3]{-\frac{q}{2} + \sqrt{\frac{q^2}{4} + \frac{p^3}{27}}} + \sqrt[3]{-\frac{q}{2} - \sqrt{\frac{q^2}{4} + \frac{p^3}{27}}}, \qquad (2)$$

$$\alpha\beta = -\frac{p}{3}.$$

We will consider the cubic matrix equation (3) in which all matrixes commutative, contain real elements and have the size $[2\times2]$:

$$X^3 + PX + Q = 0.\tag{3}$$

Designate

$$D = \frac{Q^2}{4} + \frac{P^3}{27}.$$

This matrix is reduced to the Jordan normal form [4, p. 148]

$$J = \begin{pmatrix} \lambda_1 & 0 \\ 0 & \lambda_2 \end{pmatrix},$$

where λ_1 and λ_2 are the eigenvalues of the matrix D ($|\lambda_1| < |\lambda_2|$).

Extract the square roots of the elements of the matrix J:

$$J_1 = \begin{pmatrix} \sqrt{\lambda_1} & 0 \\ 0 & \sqrt{\lambda_2} \end{pmatrix}.$$

Next, you need to write the form of the transition matrix from $D^{1/2}$ to its equivalent matrix J_1. Recall that the transition matrix T consists of the eigenvectors of the matrix D.

$$D^{1/2} = D_{1/2} = TJ_1T^{-1}.$$

We will designate

$$Y = -\frac{Q}{2} + D_{1/2}$$

matrix expression, similar to the first radicand in a formula (2). It must also be reduced to Jordan normal form J_2.

Extract the cubic roots of the elements of the matrix J_2:

$$J_3 = \begin{pmatrix} \sqrt[3]{J_2[1,1]} & 0 \\ 0 & \sqrt[3]{J_2[2,2]} \end{pmatrix}.$$

In the general case, for each of the numbers $J_2[1,1]$ and $J_2[2,2]$, there are 3 different complex values of the cubic root. Therefore, writing out all possible combinations, we get 9 different matrices $J_{3,i}$ $(i=1,\ldots,9)$.

Substituting the obtained values $J_{3,i}$ into expression

$$Y_i^{1/3} = \Theta J_{3,i} \Theta^{-1} = \alpha_i \quad (i=1,\ldots,9),$$

find the 9 values of the cubic root of the matrix Y.

Further, for each matrix α_i, we find, by analogy with the scalar case, the matrix β_i:

$$\beta_i = -\frac{P}{3}\alpha_i^{-1} \quad (i=1,\ldots,9).$$

Thus, the solutions of the original matrix equation (3) are of the form

$$X_i = \alpha_i + \beta_i \quad (i = 1, \ldots, 9).$$

Conclusion. In the course of the work it is shown that all solutions of an random matrix equation with commutative coefficients of size $[2 \times 2]$ can be analytically obtained. Also, the algorithm for finding these solutions is presented.

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FITTING PERMUTATION CLASSES OF π- SOLUBLE GROUPS

N. Doroshinsky
VSU named after P.M. Masherov, Vitebsk, Belarus

The main goal of the paper is a description of Fitting permutation classes. All considered groups are finite. In the definitions and notation, we follow [1].

DEFINITION 1[1]. A class $\mathfrak{F}$ is a *Fitting class* if and only if the following two conditions are satisfied:

1)   if $G \in \mathfrak{F}$ and N $\trianglelefteq$ G, then $N \in \mathfrak{F}$;

2)   if $M, N \trianglelefteq \mathrm{G} = MN$ with M and N in $\mathfrak{F}$, then $G \in \mathfrak{F}$.

Let P be a set of all primes and $\pi \subseteq P$. An π-number is an integer whose prime divisors all belong to π. A subgroup H of a group G is called a *Hall π-subgroup* if $|H|$ is a π-number and $|G{:}H|$ is a π'-number, where $\pi' = P \backslash \pi$.

A subgroup H of G is called a *Hall subgroup* if it is a Hall π-subgroup for some

$\pi \subseteq P$. Evidently H is a Hall subgroup of G if and only if $(|G{:}H|, |H|) = 1$.

Let $\mathfrak{F}$ be a Fitting class of a group G. A subgroup V of G is called $\mathfrak{F}$ - *maximal* if the following conditions are satisfied:

1) $V \in \mathfrak{F}$;

2)   if $V \leq U \leq G$ and $U \in \mathfrak{F}$, then $U = V$.

The subgroup V of G is called $\mathfrak{F}$ –*injector* if $V \cap K$ is $\mathfrak{F}$ -maximal subgroup of K for every normal subgroup K of G.

DEFENITON 2 [1]. *The operator $L_\pi( )$.* Let π be a set of primes, and let $\mathfrak{F}$ be a Fitting class of finite soluble groups and $\mathfrak{S}$ is a class of all soluble groups. Then define

$L_\pi(\mathfrak{F}) = (G \in \mathfrak{S}$: the $\mathfrak{F}$-injectors of G have π'-index in G).

Thus $L_\pi(\mathfrak{F})$ consists of all finite soluble groups whose $\mathfrak{F}$-injectors contain a Hall π-subgroup: in particular, we have $L_\varnothing(\mathfrak{F}) = \mathfrak{S}$ and $L_P(\mathfrak{F}) = \mathfrak{F}$.

Let $\mathfrak{F}$ and $\mathfrak{H}$ be a Fitting class. Then $\mathfrak{F}\mathfrak{H} = (G: G/G_{\mathfrak{F}} \in \mathfrak{H})$. Let $\mathfrak{E}_{\pi'}$ be a class of all π'-groups. In [2], the theorem is proved that if $\mathfrak{F}\mathfrak{E}_{\pi'} = \mathfrak{F}$, then in any π-soluble group there are $\mathfrak{F}$-injectors and any two of them are conjugate.

Doerk and Hawkes in the class of all finite soluble groups obtained a criterion for the permutability of Fitting classes. In connection with it the actual task of extending this result to the case of partially solvable groups. The solution to this question is the main goal of this paper.

Let $\mathfrak{S}^\pi$ be a class of all π-soluble groups.

THEOREM. Let $\mathfrak{F}$ be a Fitting class, let $\pi \subseteq P$, and let $G \in \mathfrak{S}^\pi$. Let V and $G_{\pi'}$ denote respectively an $\mathfrak{F}$-injector and a Hall π'-subgroup of G, and put

$W = <V, G_{\pi'}>$. Then W is an $L_\pi(\mathfrak{F})$-injector of G if and only if $VG_{\pi'} = G_\pi V$.

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THE INVARIANCE OF PROPERTY OF SEPARATION FROM ZERO CORNER MINORS IN THE SIMILARITY TRANSFORMATION USING THE LOWER TRIANGULAR MATRIX

K. Kalita
Polotsk State University, Novopolotsk, Belarus

Exploring characteristics of a numerical matrix in its various matrix transformations (e.g., in the similarity transformation, congruence, etc.) is one of the main problems in matrix theory.

The aim of this paper is to learn preservation of the principal leading corner minors' of a square n-dimensional matrix positivity and, moreover, of their separation from zero using the similarity transformation on the set of lower triangular matrices with positive diagonal elements.

Material and methods. We obtained the main results using the methods of linear algebra and matrix theory.

Findings and their discussion. Let R^n be a n-dimensional Euclidean vector space supplied with the norm $\|x\| = \sqrt{x^T x}$ (here the symbol T means the transpose of a matrix or a vector); $e_1, e_2, \ldots, e_n$ be vectors (columns) of the canonical orthonormal basis for the space R^n; M_{mn} be the space of real $m \times n$-dimensional matrices supplied with the spectral (operator) norm

$‖H‖= \max_{‖x‖=1} ‖Hx‖$, i.e. the norm induced by the Euclidean norm in the spaces R^n and R^m [1, p. 357]; $\mathrm{M}_n := \mathrm{M}_{nn}$. Denote by $E = [e_1,\ldots,e_n] \in \mathrm{M}_n$ the identity matrix. For any number $l \in \mathrm{N}$ denote the set of lower triangular $l \times l$-matrices with positive diagonal elements by $\mathrm{R}_l \subset \mathrm{M}_l$.

Definition 1. For any fixed number $k \in \{1,\ldots,n\}$ and any matrix $H = \{h_{ij}\}_{i,j=1}^n \in \mathrm{M}_n$ by $(H)_k \in \mathrm{M}_k$ denote it's *principal leading k-dimensional submatrix* [1, p. 30], i.e.

$$(H)_1 = (h_{11}), \quad (H)_2 = \begin{pmatrix} h_{11} & h_{12} \\ h_{21} & h_{22} \end{pmatrix}, \quad \ldots, \quad (H)_n = H.$$

Determinants of leading principal submatrices of a matrix $H \in \mathrm{M}_n$ are called the *principal leading corner minors* [1, p. 30].

For any number $l \in \mathrm{N}$ by $\mathrm{H}_l \subset \mathrm{M}_l$ denote the set of l-dimensional matrices with positive principal leading minors, i.e.

$$\mathrm{H}_l := \{H \in \mathrm{M}_l : \det(H)_k > 0, \; k = \overline{1,l}\}.$$

Definition 2. For any number $j = \overline{1,n}$ by $S_j \in \mathrm{M}_n$ denote the matrix received from a matrix R by changing it's first j strings by the appropriate strings of a matrix H, i.e.

$$S_j := R + \sum_{i=1}^j e_i e_i^T (H - R), \quad j = \{1,\ldots,n\}.$$

In the sequel, with the use of monograph's terminology [2, p. 283], consider matrices $S_j \in \mathrm{M}_n$, $j = \overline{1,n}$, to be the *intermediate steps on the way from R to H*.

Definition 3. An ordered pair (R,H) of matrices on the set M_n is called *law-abiding* [2, p. 283], if the ratio $\det R > 0$ is correct and for each number $j \in \{1,\ldots,n\}$ of matrices S_j, which are the intermediate steps on the way from R to H, such ratios as $\det S_j > 0$ are correct.

Definition 4. *Square n-dimensional matrices M and N are called* similar [1, p. 61], if such matrix as $S(\det S \neq 0)$ exists so the following equality is correct

$$M = SNS^{-1}$$

and the transformation of matrix N itself with the use of the matrix S is called the similarity transformation.

Theorem 1. *Let $R \in \mathrm{R}_n$, $H \in \mathrm{H}_n$. If a pair (R,H) is law-abiding, then the positivity of the principal leading minors of the matrix H is preserved by the similarity transformation with the use of the matrix R, so the inclusion $RHR^{-1} \in \mathrm{H}_n$ is performed.*

The invariance of the positivity property of the principal leading corner minors of the matrix $H \in \mathrm{H}_n$ in the similarity transformation using the matrix $R \in \mathrm{R}_n$ is established by theorem 1, if these matrices are law-abiding. However,

a stronger statement is also true. It is about the preservation of the principal corner minors' of the matrix H separation from zero in the similarity transformation using with not only the law-abiding condition but also the ρ-law-abiding of the same pair (R,H).

For any real numbers $r \ldots 1$ and $\rho \in (0,1)$ let $R_n(\rho, r) \subset R_n$ be a set of lower triangular $n \times n$-matrices R with positive diagonal elements for which $PR - EP,, r$ and $\det R \ldots \rho$ are correct, i.e.

$$R_n(\rho, r) := \{R \in R_n PR - EP,, r, \det R \ldots \rho\},$$

and a set of $n \times n$-matrices $H_n(\rho, r) \subset M_n$, for which $PH - EP,, r$ and all the principal leading minors are not less than ρ, i.e.

$$H_n(\rho, r) := \{H \in M_n : PH - EP,, r, \det(H)_k \ldots \rho, k = \overline{1,n}\}.$$

Definition 5. Let $\rho \in (0,1)$ be a random fixed number. According to the definition from [2, p. 283] an *ordered pair* (R,H) on a set M_n^2 is *called ρ-law-abiding*, if $\det R \ldots \rho$ and for any $j \in \{1,\ldots,n\}$ belonged to S_j, which are intermediate steps on the way from R to H, such inequalities as $\det S_j \ldots \rho$ are correct.

Theorem 2. *Suppose $r \ldots 1$ and $\rho \in (0,1)$. If a pair (R,H) for which $R \in R_n(\rho, r)$ and $H \in H_n(\rho, r)$ is ρ-law-abiding, then there exist such numbers as $\rho_1 = \rho_1(\rho, r) \in (0,1)$ and $r_1 = r_1(\rho, r) \ldots 1$, for which $RHR^{-1} \in H_n(\rho_1, r_1)$.*

Consclusion. The obtained results can be further used in the theory of controllability of asymptotic invariants of linear systems of ordinary differential equations in the study of global Lyapunov reducibility [2, p. 258 - 259] and even the global attainability [2, p. 253] of such systems.

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ASSESSMENT OF THE MATCHING OF THE RECOMMENDED GAS VELOCITIES IN CYCLONES TO THE ECONOMICALLY OPTIMAL ONES

D. Kaziak
BSTU, Minsk, Belarus

Gas cleaning in the chemical industry is a complex and urgent problem with a number of aspects. The economic aspects are the development of the methods and systems that can significantly improve the efficiency of extraction of the valuable components from raw materials, maximize the utilization of the

products captured during the gas purification, increase the efficiency of equipment operation.The technological aspects are the introduction of the new methods and systems of gas purification in chemical production, based on the latest achievements of the world science and technology, the modernization of the inefficient gases separation units, the development of the highly efficient instruments and schemes of removal of gaseous and particulate contaminants from gas streams, unification and standardization of gas cleaning equipment, etc[1].

The aim of the study is to verify the applicability of the recommended conventional method of selection of cyclones values of gas velocities in modern economic conditions. According to this, the cost-optimal velocity values are calculated at the current prices for electricity and cyclones.

Material and methods. The method of Kouzov and Belevitsky [2], which takes into account both the design parameters of cyclones and operating costs, has been considered the best of the analyzed techniques for technical and economic optimization of cyclone dust collection plants [1,2,6,7].

The calculations have been carried out according to the method of Kouzov and Belevitsky for the cyclones of various types widely used in the CIS countries (CN-24, CN-15, CN-11).

The optimal diameter values for different types of cyclones and the corresponding gas velocities have been calculated in order to select the variants suitable for the comparison at the reduced costs.

The optimal diameter corresponding to the minimum of the reduced costs is determined by the formula (1) [2]:

$$D_{opt} = 0{,}49\tau \sqrt[3]{\frac{K_M K_H}{\xi PE\,\rho_{\text{г}}}},\ \text{m} \tag{1}$$

where D_{opt} – optimum cyclone diameter, m.

The velocity of the gas in the cyclone is determined by the formula:

$$w = \frac{D_{opt}}{\tau}. \tag{2}$$

After substitution of values in this formula, the corresponding values of gas velocities in cyclones at old and new prices have been found.
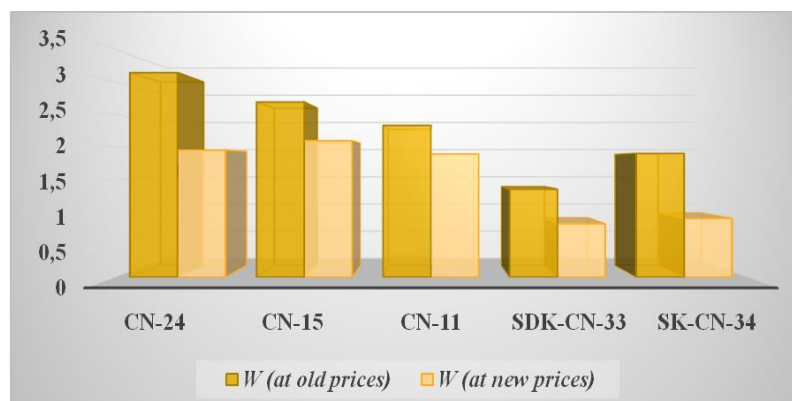

Fig. 1. Comparison of the values of velocities of the gas for the cyclones of different types using the old and new prices for electricity.

Reduced costs were determined by the formula (3):

$$C = \left(\frac{5.25\rho_{\text{г}}\xi PED^2}{\tau^2} + \frac{1.27K_M K_H \tau}{D}\right)Q \text{ RUB / year,} \qquad (3)$$

where $\rho_{\text{г}}$ – gas density, kg / m^3;

ξ – coefficient of resistance of the cyclone with a snail on the exhaust pipe;

PE – the price of electricity, $ /kW·h;

D – cyclone diameter, m;

τ – conditional deposition time, s;

K_M – the ratio of capital expenses, RUB/m^2;

K_H – regulatory capital efficiency ratio;

Q – capacity of the cyclone unit for gas, m^3/s.

The construction-technological and technical-economic indicators of the cyclone are related to each other in equation (3), that is, the given equation is its technical and economic model.

The technical and economic calculation based on the optimization technique has showed that the use of a technically highly effective group of cyclones (SDK-CN-33, SK-CN-34) is not technologically justified. Only three of the initially selected five of the cyclones fit on techno-economic considerations.

The capital cost factors K_M, determined on the basis of the 1982 prices used at the time of development of the optimization technique, have been recalculated taking into account the cost of cyclones for 2018. In the physical sense, we can assume that it expresses a "reduced" thickness of the metal.

Findings and their discussion. Technical and economic optimization of cyclone dust collection plants is an urgent scientific and technical task.

The cyclones with economically optimal diameters have been selected as the result of the calculations, that is, corresponding to the minimum of the reduced costs, and the optimal values of gas velocities have been calculated at current electricity prices.

The calculations based on current prices have showed that the velocities calculated according to the recommended at present conventional simplified method of selection of cyclones [2] at the current prices are much higher (≈1,4 times) than the economically optimal ones and, therefore, need to be adjusted. It is necessary to use a more accurate method of selecting the optimal size (number and diameter) of cyclones, for example, [2], when assessing them.

Conclusion. The use of outdated data and methods will lead to economic as well as energy losses, as the cyclone's hydraulic resistance and energy consumption for gas purification are proportional to the gas velocity in the second degree.

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ON PROPERTIES OF QUASINORMAL FITTING CLASSES

A. Marcinkevich
VSU named after P.M. Masherov, Vitebsk, Belarus

All groups considered in this paper will belong to the class E of all finite groups. Our notation and terminology are standard [1].

A Fitting class F is a class of groups closed under normal subgroups and products of normal F-subgroups. From the definition of a Fitting class, it follows that for any nonempty Fitting class F every group G possesses a unique maximal normal F-subgroup which is called F-radical of G and is denoted by G_{F}. If H is a subgroup of a group G and $H \in \mathsf{F}$ with the property that $H = T$ whenever $H \leq T \leq G$ and $T \in \mathsf{F}$, we call H an F-maximal subgroup of G. Recall, that an F-injector of a group G is a subgroup V of G with the property that $V \cap N$ is an F-maximal subgroup of N for all subnormal subgroups N of G.

Let S be a class of all soluble finite groups. A Fitting class F is called soluble if $\mathsf{F} \subseteq \mathsf{S}$.

Investigations of the structure of Fitting classes and characterizations of F-injectors and F-radicals of soluble groups are related to the study of Fitting classes with normal F-injectors (see works of D. Blessenohl and W. Gaschütz [2], A. R. Makan [3] and P. Lockett [4]).

Let G and H be groups. Then $G \, wr \, H$ denote the regular wreath product of G with H.

By generalizing the concept of normal Fitting class, P. Hauck [5] defined the so called quasinormal Fitting classes.

Definition 1 [5]. Let F and X be Fitting classes such that $\mathsf{F} \subseteq \mathsf{S}$ and $\mathsf{F} \subseteq \mathsf{X}$. The class F is called X-quasinormal if for every prime p, groups $G \in \mathsf{F}$ and $G \, wr \, Z_p \in \mathsf{X}$ there exists a natural number m such that $G^m \, wr \, Z_p \in \mathsf{F}$.

In the case $\mathsf{X} = \mathsf{S}$, according to [1, Theorem X.3.7], F is a normal Fitting class.

The main purpose of this work is to expand the results of P. Hauck [5] for the case of non-soluble groups.

Material and methods. In this paper we use methods of the evidence of abstract group theory, also methods of the theory of classes of groups, particularly methods of the theory of Fitting classes.

Findings and their discussion. Recall, that for an every nonempty Fitting class F, F^* is denoted as the smallest Fitting class [4], which contains F and for every groups G and H the equality $(G \times H)_{\mathsf{F}^*} = G_{\mathsf{F}^*} \times H_{\mathsf{F}^*}$ is true. Another Fitting class F_* may be defined by $\mathsf{F}_* = \bigcap \{ \mathsf{X} : \mathsf{X}$ - класс Фиттинга, $\mathsf{X}^* = \mathsf{F}^* \}$.

Since the intersection of X-quasinormal Fitting classes is an X-quasinormal Fitting class, it follows that for every Fitting class F we will denote by $\mathsf{F}_{(\cdot)}$ the smallest Fitting class quasinormal in F.

We have investigated the properties of the operator "$(\cdot)$". The next theorem is proved.

Theorem 2. Let F and X be Fitting classes. Then the following statements are true:

1) if $\{\mathsf{F}_i\}_{i \in I}$ and $\{\mathsf{X}_i\}_{i \in I}$ are the families of Fitting classes and F_i is X_i-quasinormal for each $i \in I$, then $\bigcap_{i \in I} \mathsf{F}_i$ is $\bigcap_{i \in I} \mathsf{X}_i$ -quasinormal;

2) if $\mathsf{F} \subseteq \mathsf{X}$, then $\mathsf{F}_{(\cdot)} \subseteq \mathsf{X}_{(\cdot)}$;

3) $\mathsf{X}_{(\cdot)} = (\mathsf{X}_{(\cdot)})_{(\cdot)} = (\mathsf{X}_*)_{(\cdot)} = (\mathsf{X}_{(\cdot)})_*$.

Conclusion. Thus for the case of non-soluble groups we have proved some new properties of X-quasinormal Fitting classes.

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INJECTORS OF FACTOR GROUPS OF π-SOLUBLE GROUPS

T. Petrova
VSU named after P.M. Masherov, Vitebsk, Belarus

Let P be a set of all primes and $\pi \subseteq P$. There are all considered groups are π-soluble in the paper. In the definitions and notation we follow [1].

DEFINITION 1. Group G is called a π-soluble, if every principal factor of G is either an abelian π-group or π′-group, where $\pi' = P/\pi$.

DEFINITION 2 [1]. A non-empty set $\mathcal{F}$ of subgroups of a group G is called a Fitting set of G if the following three 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 $S^x \in \mathcal{F}$.

In [2], the concept of a product of a Fitting set and a Fitting class was introduced. For a Fitting set $\mathcal{F}$ of G and a Fitting class $\mathcal{X}$, we call the set $\{H \leq G | H / H_{\mathcal{F}} \in \mathcal{X}\}$ of subgroups of G the product of $\mathcal{F}$ and $\mathcal{X}$ and denote it by $\mathcal{F} \circ \mathcal{X}$.

DEFINITION 3 [2]. π-Saturated Fitting set $\mathcal{F}$ of G is a Fitting set with the property that $\mathcal{F} \circ \mathcal{E}_{\pi'} = \mathcal{F}$, where $\mathcal{E}_{\pi'}$ is a set of all π′-groups.

In contrast to the theory of Fitting classes, in the theory of Fitting sets, one can determine the structure of $\mathcal{F}$-injectors of factor groups.

DEFINITION 4 [1]. Let $\mathcal{F}$ be a Fitting set of a group G. A subgroup V of G is called $\mathcal{F}$-maximal if the following conditions are satisfied:

1) $V \in \mathcal{F}$;

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

DEFINITION 5 [1]. The subgroup V of G is called $\mathcal{F}$-injector if $V \cap K$ is $\mathcal{F}$-maximal subgroup of K for every normal subgroup K of G.

The problem of describing injectors of factor groups was solved in the work of Anderson [3] in the class of all finite solvable groups. Concerning the problem of expansion Anderson's results to the case of partially solvable groups is relevant. The solution to this problem is the main goal of this work. Proven

THEOREM. Let $\mathcal{F}$ be a non-empty π-saturated Fitting set of π-soluble group G and $N \trianglelefteq G$.

1) The set $\mathcal{F}_{G/N} = \{SN/N: S \text{ is a } \mathcal{F}\text{-injector of } SN\}$ is a Fitting set of G/N;

2) If V is a $\mathcal{F}$-injector of G, then VN/N is a $\mathcal{F}$-injector of G/N.

In the case when $\pi = P$, we get

CONSEQUENCE. Let $\mathcal{F}$ be a Fitting set of soluble group G, and $N \trianglelefteq G$.

1) The set $\mathcal{F}_{G/N} = \{SN/N: S \text{ is a } \mathcal{F}\text{-injector of } SN\}$ is a Fitting set of G/N;

2) If V is a $\mathcal{F}$-injector of G, then VN/N is a $\mathcal{F}$-injector of G/N.

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COPING STRATEGIES OF ADOLESCENT CHILDREN WHO ARE IN DIFFERENT THE CONDITIONS OF HARMONIOUS LIFE

A. Sankovskaya
VSU named after P.M. Masherov, Vitebsk, Belarus

In adolescence, there is a process of active formation not only physical and psychological development of the child, but also his coping behavior. Personal development are in progressive dynamics, so it is especially important to conduct a timely psych diagnostic study of adolescents in this age period, especially children in particularly difficult situations.

The aim of our research is to study the strategies of coping behavior of adolescents in different conditions of life.

Material and methods. At the stage of psycho-diagnostic studies we used the questionnaire "Ways of coping" S. Folkman, R. Lazarus [1] as well as the method of diagnosis coping strategies Khaimah (Test Khaimah deal with stress) [2].

Findings and their discussion. The psych diagnostic study was attended by subjects of adolescence - the department of dialysis and extracorporeal detoxification of the 2nd Children's Clinical Hospital in Minsk, as well as students of grades 7–11 of the educational institution "Novskaya secondary school of Vitebsk district». The results showed that the highest scores among adolescents who are at the hospital and receiving program hemodialysis, according to the "Methods of coping" method, they were registered using such coping mechanisms as "self-control" and "planning problem solving", when they found themselves in a difficult situation, these subjects try not to show their feelings and can hide from others, how bad things are, they are not inclined to impulsive actions, systematically looking for ways to resolve the situation. The lowest score is marked by the flight-avoidance strategy. This indicates that this category of adolescents does not often resort to passive and non-constructive ways of overcoming difficulties (moving away from reality into the world of fantasy, hoping for a miracle, that the situation resolves itself, passion). Similar trends are observed in healthy schoolchildren: the leading coping methods are "problem solving planning" and "self-control", the lowest score is for "flight-avoidance".

A comparative analysis of coping strategies used by children receiving dialysis and healthy adolescents revealed a number of differences. The researched category of adolescent schoolchildren, use methods of confrontational coping; ie, these children are not characterized by persistence in achieving goals, assertiveness, tendency to rivalry and aggressive actions. Largely, these adolescents tend to "distancing" (unwillingness to see the negative aspects of the situation, ignoring them). A higher than normal score on "self-control" in the children undergoing dialysis indicates an unwillingness to openly express their feelings, secrecy, combined with thoughtful and not too hasty decision-making. Also among the children in the hospital, there is an ineffective way of coping with difficult situations - "flight-avoidance": these adolescent children are not inclined to passive "care" from difficulties. The reduced indicator of the "positive revaluation" strategy indicates a lack of ability to find positive moments in a difficult situation, to see in it an opportunity for self-improvement.

Conclusion. Thus, exploring the coping strategies of adolescent children who are in different conditions of life, it should be noted that children who are in more difficult life situations (dialysis in our case) are prone to more thoughtful actions, to "self-control", which showed not only psych diagnostic research, but also proves their behavior: such children in life become "older" from their attendant difficulties. Teenager's schoolchildren, who are characterized by confrontational coping behavior, show a desire for their goals, using aggressive methods of behavior.

Based on psych diagnostic research and in general work with this category of children, it should be noted that all the coping strategies of children that are manifested are the result of their living conditions, their activities, their immediate environment, and the attention of parents, psychologists and educational specialists.

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ON CREATING A REMOTE COURSE
ON DIFFERENTIAL GEOMETRY

I. Slinchak
Pskov State University, Pskov , Russia

For more effective implementation of educational programs of higher education, active, motivated and interested participation of the students themselves in the process of mastering the program , increasing

their responsibility for the quality of the achieved learning outcomes is necessary . It seems relevant to find ways to stimulate students to work independently to achieve the stated results of education, innovative teaching methods that stimulate learning, carried out in collaboration between teachers and students. For this purpose, it is advisable to use the possibilities of information support for students during the period of their mastering educational programs. Developed solutions to the tasks are possible only in the conditions of informatization of educational activities and the involvement of distance learning. The purpose of this research is to present the experience of remote support of students in the process of mastering differential geometry by them [1].

Material and methods. The pedagogical experiment has been carried out since 2017 at the Faculty of Physics and Mathematics of Pskov State University . The experiment involves third-year students studying differential geometry.

Findings and their discussion. To implement remote support in Pskov State University , distance learning portals are used http : // dosu . pskgu . ru / and http://do.pskgu.ru/, working on the platform «Moodle». This distance learning system is freely distributed, quite versatile, able to work in any operating system, has a convenient interface. The system can create and store electronic learning materials and set the sequence of their study. Due to the fact that access to Moodle via the Internet or other networks, students are not tied to a specific place and time, can move through the material at their own pace. The course of differential geometry traditionally belongs to the most complex sections of geometry studied at a university. Thus, the task of creating remote support for this discipline arose. When developing a remote accompaniment, the chosen platform allows using various elements of the course: lecture, seminar, survey, forum, test and others. Let us dwell in more detail on the course element "Test", which allows the teacher to create test questions open and closed types, compliance and others. You can create a test with several attempts, with mixed questions or random questions that are selected from a question bank, you can set a time limit. Ratings are recorded in a rating log. If several attempts to pass the test are allowed, the following methods can be used to calculate the final grade: best estimate of all attempts, average rating of all attempts, first attempt (all other attempts are not counted), last attempt (all other attempts are not counted). Low grades of students in differential geometry are also due to the fact that, when studying it, it is necessary to have a confident mastery of the basics of mathematical analysis and analytical geometry, which are studied in the first course and are already forgotten by the third course. In order to motivate students to repeat the above sections, it was decided to carry out an assessment of basic knowledge and skills in analytical geometry and mathematical analysis. The entrance test consisted of 18 tasks on the basics of mathematical analysis and analytical geometry, all tasks were with the choice of

answer a (closed type). In order to better prepare for expert assessment, on a distance course you could pass a self-assessment before testing, by running the demo test and receiving a comment for each task, it could be done remotely, which allowed students to manage their time. The teacher was able to see how actively the students are preparing for testing. Definitely it seems useful to establish interactive communication between the training and camping and teacher studying with each other, without being a direct meeting and an independent repetition of a specific body of knowledge and skills in the chosen course within the established forum. Input testing was carried out in computer classes, the assignment of tasks was generated in an arbitrary manner, which allows a greater degree to avoid cheating. In addition, in the case of the second attempt at passing the test, the answers were randomly mixed. The students worked in the "Pending review" mode, the answers they could be seen only after how they will see the results of the whole test. In the case of tests in the learning mode, it is advisable to apply the regime "Interactive with several attempts E ', where students, answering every question immediately get feedback and, if they are from the first answer is incorrect, then immediately acquire the right to a second attempt, in this case, if at the same time carried out the assessment, the assessment may be reduced. Upon completion of the entrance test, the teacher could immediately see the log of results, detailed results for each student, reports on the results of the whole group , with the help of which the questions most forgotten by students and which should be repeated were immediately revealed at the first practical lesson. To perform this work effectively without remote support is not possible. Differential geometry in a higher education institution is represented by three sections: lines in Euclidean space, surfaces in Euclidean space, and internal geometry. For each of these sections, tests have been developed that are also located in the distance course. Moreover, based on the specific situation in the academic group, the system allows you to organize testing completely (within a whole pair) or to conduct rapid testing on the most key concepts.

Conclusion. Thus, the didactic features of the distance accompaniment course stimulate students' intellectual activity by defining learning objectives and applying the material, enhancing learning motivation, which is achieved by clearly defining values and internal reasons that encourage learning, developing skills and learning and self-learning, assessments and self-assessments. . We believe that it is advisable to combine distance learning with contact training, this allows you to more effectively build the development of educational programs.

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COMPUTER ALGEBRA SYSTEM GAP IN THE THEORY
OF SCHUNCK CLASSES

I. Staselka

VSU named after P.M. Masherov, Vitebsk, Belarus

The aim of this talk to find an **algorithm** for the computation of F-projectors for arbitrary Schunck classes F given by an algorithm testing membership in F (or even only in the basis or boundary of F) using GAP package CRISP.

Computer algebra system GAP – Groups, Algorithms and Programming – initially has been developed as a tool for Combinatorial Group Theory. Further GAP began to be used in other areas of algebra (the Theory of Finite Soluble Groups, the Theory of Formations and the Theory of Schunck Classes). In particular in 2000 GAP package CRISP was developed by Burkhard Höfling. CRISP stands for Computing with Radicals, Injectors, Schunck classes and Projectors of finite soluble groups. All groups considered are finite and soluble.

Recall that F is a Schunck class if it consists of all groups G such that $G/Core_G(M) \in$ F for every maximal subgroup M of G and note that a Schunck class is closed with respect to factor groups. A group G having a maximal subgroup M with trivial core will be called primitive.

Let F be a class of groups. A subgroup H of the group G is an F-maximal subgroup of G if it belongs to the class F but is not properly contained in another subgroup of G belonging to F. F-projectors are examples of such maximal subgroups. A subgroup H of a group G is an F-projector of G if HN/N is F-maximal in G/N for every normal subgroup N of G. Projectors play an important role in the theory of finite soluble groups and have been studied intensively (see [1]). In particular, projectors exist in every group if and only if F is a Schunck class. In the special case when the Schunck class F is also a local formation, an algorithm for computing F-projectors of a group G has been described in Eick and Wright [2]. However, the Eick-Wright algorithm essentially uses the description of local formations by means of functions called inner local satellites (see [3,4]).

Let F be a Schunck class. It is clear that the class F is completely determined by the primitive groups in F. This class of primitive groups belonging to F is called the basis of F. A Schunck class F can also be represented by its boundary, which consists of all groups G such that $G \notin$ F but every proper homomorphic image of G belongs to F.

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ABOUT THE PRODUCT FISHER SET AND FISHER CLASS

H. Vaitkevich
VSU named after P.M. Masherov, Vitebsk, Belarus

Throughout this paper, all groups are finite. In the definitions and notation, we follow [1].

Remind that class $\mathfrak{F}$ is a *Fitting class* [1] if and only if the following two conditions are satisfied:

(i) If $G \in \mathfrak{F}$ and $N \unlhd G$, then $N \in \mathfrak{F}$;

(ii) If $M, N \unlhd G = MN$ with M and N in $\mathfrak{F}$, then $G \in \mathfrak{F}$.

A subgroup U of a group G is said to be *subnormal in G* if there exists a chain of subgroups $U_0, U_1, \ldots, U_r$ of G such that
$$U = U_0 \unlhd U_1 \unlhd \cdots \unlhd U_{r-1} \unlhd U_r = G.$$

This is called a *subnormal chain from U to G*. If U is subnormal in G, we shall write $U \unlhd\unlhd G$.

Theorem [1]. Let $\{U_i : i \in I\}$ be a *set of subnormal subgroups of a finite group G*. Then their join $\mathcal{J} = < U_i : i \in I >$ is also subnormal in G.

For a class $\mathfrak{F}$ of groups we define:

$N_0 \mathfrak{F} = (G : \exists K_i \unlhd\unlhd G \ (i = 1, \ldots, r) \ with \ K_i \in \mathfrak{F} \ and \ G = < K_1, \ldots, K_r >).$

A class $\mathfrak{F}$ of arbitrary finite groups is called a *Fischer class* [1] if

(i) $\mathfrak{F} = N_0 \mathfrak{F} \neq \varnothing$, and

(ii) If $K \unlhd G \in \mathfrak{F}$ and H/K is a nilpotent subgroup of G/K, then $H \in \mathfrak{F}$.

A non-empty set $\mathcal{F}$ of subgroups of a group G is called a *Fitting set of G* [1] if the following three conditions are satisfied:

FS1: If $T \unlhd\unlhd S \in \mathcal{F}$, then $T \in \mathcal{F}$;

FS2: If $S, T \in \mathcal{F}$ and $S, T \unlhd ST$, then $ST \in \mathcal{F}$;

FS3: If $S \in \mathcal{F}$ and $x \in G$, then $S^x \in \mathcal{F}$.

Lemma [1]. *Let $\mathfrak{F}$ be an N_0-closed class and G a finite group. Then the set $\mathcal{G} = \{N \unlhd\unlhd G : N \in \mathfrak{F}\}$, partially ordered by inclusion, has a unique maximal element, denoted by $G_{\mathfrak{F}}$ and called the $\mathfrak{F}$-radical of G. It is a characteristic subgroup of G, and if $\mathfrak{F}$ is a Fitting class and $K \unlhd\unlhd G$, then $K_{\mathfrak{F}} = K \cap G_{\mathfrak{F}}$.*

A *Fischer set of G* [1] is a Fitting set $\mathcal{F}$ of G which has the following property:

FS4: If $K \unlhd L \in \mathcal{F}$ and if H/K is a nilpotent subgroup of L/K, then $H \in \mathcal{F}$.

In the theory of classes of groups the know result of Lockett [2] that the product two of Fischer classes is Fischer class.

In [3] it is defined the product Fitting set and Fitting class.

Definition [3]. For a Fitting set $\mathcal{F}$ of G and a Fitting class $\mathfrak{F}$, we call the set $\{H \leq G | H/H_{\mathcal{F}} \in \mathfrak{F}\}$ of subgroups of G *the product of $\mathcal{F}$ and $\mathfrak{F}$*, and denote it by $\mathcal{F} \circ \mathfrak{F}$.

As stated in [3] $\mathcal{F} \circ \mathfrak{F}$ is a Fitting class.

The main purpose of this paper study of the product of Fischer set and Fischer class. It is proved.

Theorem. Let $\mathcal{F}$ is a Fischer set of G and $\mathfrak{F}$ is a Fischer class, then $\mathcal{F} \circ \mathfrak{F}$ is a Fischer set of G.

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ON SOLVABILITY OF SOME CLASSES OF ALGEBRAIC EQUATIONS IN RADICALS

V. Zhgirov
VSU named after P.M. Masherov, Vitebsk, Belarus

The relevance of this work is to obtain the most convenient method for solving algebraic equations, and to answer the question whether this equation is solvable in radicals.

The purpose of the article is formulate and justify the necessary and sufficient conditions for the representability of algebraic polynomials of the fourth and eighth degree in the form of a superposition of quadratic polynomials, as a consequence of the solvability conditions in the eighth degree equation by radicals.

Material and methods. Material of this article the algebraic equations. In the study, methods of algebra, mathematical analysis and the computer mathematics system Maple 2017 were used in the research.

Findings and their discussion. Suppose the algebraic equations of the form:

$$f(z) = 0,$$

where $f(z)$ - fourth degree polynomial, which is a superposition of a quadratic polynomial. That is, has the following form:

$$f(z) = (z^2 + b_1 z + c_1)^2 + b_2(z^2 + b_1 z + c) + c_2 \,.$$

Opening the brackets, we get:

$$f(z) = z^4 + 2b_1 z^3 + \left(b_1^2 + b_2 + 2c_1\right) z^2 + \left(b_2 b_1 + 2c_1 b_1\right) z + b_2 c_1 + c_1^2 + c_2 \,. \qquad (1)$$

Find out under what conditions a polynomial of the fourth degree of the form:

$$f(z) = z^4 + a_1 z^3 + a_2 z^2 + a_3 z + a_4 \,, \qquad (2)$$

is a superposition of a quadratic polynomial. To do this, we analyze the system of equations arising after equating the coefficients of the polynomial (1) with the coefficients of the polynomial (2):

$$b_1 = \frac{a_1}{2} \,;$$

$$b_2 = a_2 - \frac{a_1^2}{4} - 2c_1 \,;$$

$$a_3 = -\frac{1}{8} a_1^3 + \frac{1}{2} a_1 a_2 \,.$$

It follows that the coefficient a_3 is associated with the coefficients a_1 and a_2. Similarly, we express the coefficient a_4 :

$$a_4 = a_2 c_1 - \frac{a_1^2}{4} c_1 - c_1^2 + c_2 \,.$$

We get the following identity:

$$\left(z^2 + \frac{a_1}{2} z + c_1\right)^2 + \left(a_2 - \frac{a_1^2}{4} - 2c_1\right)\left(z^2 + \frac{a_1}{2} z + c_1\right) + \frac{a_1^2 c_1}{4} + c_1^2 - a_2 c_1 \equiv$$

$$\equiv z^4 + a_1 z^3 + a_2 z^2 + \frac{a_1}{2}\left(a_2 - \frac{a_1^2}{4}\right) z + a_4 \,. \qquad (3)$$

Identity (3) follows a necessary and sufficient condition for the representation of a fourth-degree polynomial as a superposition of a quadratic polynomial, that is, the following theorem holds.

Theorem 1. A necessary and sufficient condition for the representation of a polynomial (2) as a superposition of a quadratic polynomial is the following condition:

$$a_3 = \frac{a_1}{2}\left(a_2 - \frac{a_1^2}{4}\right),$$

expressing the relationship between the coefficients of the polynomial (2).

Similar reasoning can be applied to polynomials of the eighth degree, which is a superposition of a square polynomial of the fourth degree. Polynomial has the form:

$$f(z) = z^8 + 4b_1 z^7 + (6b_1^2 + 2b_2 + 4c_1)z^6 + (2b_1 b_2 + 4c_1 b_1 + 4(b_1^2 + b_2 +$$
$$+ 2c_1)b_1)z^5 + (b_3 + 2b_2 c_1 + 2c_1^2 + 2c_2 + 4(b_1 b_2 + 2c_1 b_1)b_1 + (b_1^2 + b_2 +$$
$$+ 2c_1)^2)z^4 + (2b_3 b_1 + 4(b_2 c_1 + c_1^2 + c_2)b_1 + 2(b_1 b_2 + 2c_1 b_1)(b_1^2 + b_2 +$$
$$+ 2c_1))z^3 + (b_3(b_1^2 + b_2 + 2c_1) + 2(b_2 c_1 + c_1^2 + c_2)(b_1^2 + b_2 + 2c_1) +$$
$$+ (b_1 b_2 + 2c_1 b_1)^2)z^2 + (b_3(b_1 b_2 + 2c_1 b_1) + 2(b_2 c_1 + c_1^2 + c_2)(b_1 b_2 +$$
$$+ 2c_1 b_1))z + b_3(b_2 c_1 + c_1^2 + c_2) + (b_2 c_1 + c_1^2 + c_2)^2 + c_3. \tag{4}$$

Find out under what conditions a polynomial of the eighth degree, which is a superposition of three quadratic polynomials. Such a superposition is as follows:

$$f(z) = z^8 + a_1 z^7 + a_2 z^6 + a_3 z^5 + a_4 z^4 + a_5 z^3 + a_6 z^2 + a_7 z + a_8. \tag{5}$$

To do this, we will analyze the system resulting from equating the coefficients of the polynomial (3) and the coefficients of the polynomial (4):

$$a_3 = \frac{7}{32}a_1^3 + \frac{3}{4}a_1 a_2; \tag{6}$$

$$a_5 = \frac{1}{256}a_1(7a_1^4 - 20a_1^2 a_2 + 128a_4); \tag{7}$$

$$a_6 = -\frac{7}{4096}a_1^6 + \frac{1}{256}a_1^4 a_2 + \frac{3}{64}a_1^2 a_2^2 - \frac{1}{8}a_1^2 a_4 + \frac{1}{2}a_2 a_4 - \frac{1}{8}a_2^3; \tag{8}$$

$$a_7 = -\frac{1}{2048}a_1(3a_1^2 - 8a_2)(a_1^4 - 8a_2^2 + 32a_4). \tag{9}$$

The following theorem holds.

Theorem 2. A necessary and sufficient condition for representing a polynomial (5) as a superposition of a quadratic square polynomial is conditions (6) - (9)

Example.

Given the fourth degree equation:

$$z^4 + 5z^3 + 4z^2 - \frac{45}{8}z + 1 = 0.$$

It is necessary to find the solutions of this equation. Using the method given earlier, we represent the equation in the form (1).

Find the coefficients b_1, b_2, c_1, c_2. We will substitute the obtained coefficients into system (2) and solve it. We obtain the following roots of a fourth-degree equation:

$$z_1 = -\frac{5}{4} + \frac{\sqrt{43 + 2\sqrt{17}}}{4}, \quad z_2 = -\frac{5}{4} - \frac{\sqrt{43 + 2\sqrt{17}}}{4}, \quad z_3 = -\frac{5}{4} + \frac{\sqrt{43 - 2\sqrt{17}}}{4},$$

$$z_4 = -\frac{5}{4} - \frac{\sqrt{43 - 2\sqrt{17}}}{4}.$$

Conclusion. As a result of the study, necessary and sufficient conditions for fourth and eighth degree polynomials were found, in the form of a superposition of two and three second degree polynomials.

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

THE EFFECT OF NICOTINIC ACID ON THE GROWTH AND DEVELOPMENT OF POTATO'S MICRO GROWTH IN VITRO

D. Avramov
VSU named after P.M. Masherova, Vitebsk, Belarus

To solve the problem in modern economic conditions, it is necessary to improve the methods of reproduction of the healthy seed material and its further reproduction at subsequent stages. To maintain the embedded characteristics of potatoes during breeding processes free from viral, bacterial and other infections, a culture in vitro - or meristem culture. This culture allows you to quickly and unlimitedly propagate planting material, maintain a living "livingcollection " collection and, thus, have constant access to a healthy source material, as well as reduce the entire period of primary seed production [1] .

The aim of the research is to study the effect of increased concentration of nicotinic acid in the nutrient medium Murasige and Skoog on the growth and development of meristem plants of various potato varieties (*Solanum tuberosum* L.).

Material and methods. The studies were performed in the laboratory for clonal micropropagation of plants in the Vitebsk Zonal Institute of Agriculture of the National Academy of Sciences of Belarus. He is a leading research institution in the agricultural sector of the Vitebsk region.

In the laboratory Curative carried administering potato varieties *in vitro* culture . To this end, the apical meristem, which is a group of active dividing cells, is isolated from the growth zone of the kidney of a specially selected parent plant under sterile conditions and planted in test tubes on a nutrient medium. This is how the isolation of the healthy part of the plant, genetically identical to the original maternal part, and its subsequent vegetative reproduction occur . When cutting the source material, no more than three cycles are allowed. Cultural Mode in vitro : temperature 18-24 ° C, illumination 5 thousand lux at a 16-hour light period with a relative humidity of 75–85% [2] .

Experimental studies were performed with the following potato varieties: Uladar, Skarb, Manifesto, Vector, Breeze .

Findings and their discussion . We odifitsirova m th on nutrient media and Moore asige and Skoog medium for the growth of the apical meristem potato. For this Expand wali nicotinic acid concentration to 1mg / liter. Such a modification is very economical.

Experiments were carried out with 20 microplants of each variety. 10 test tubes with a standard nutrient medium (control) and 10 with a modified.

Table – Effect of nicotinic acid on the multiplication factor of potatoes *in vitro*

Sort	Nutrient medium	Initial quantity, pieces	Left Plants for planting in the greenhouse, pc	Coefficient breeding
Uladar	Nicotine acid	ten	2,159	215.9
	Control	ten	1 609	160.9
Breeze	A nicotinic acid	ten	2 195	219.5
	Control	ten	1,546	154.6
Skarb	Nicotine acid	ten	2 197	219.7
	Control	ten	1,573	157.3
Vector	Nicotine acid	ten	2 154	215.4
	Control	ten	1,629	162.9
Manifesto	A nicotinic acid	ten	2,140	214
	Control	ten	1,603	160.3
Total	Nicotine acid	50	10,779	1077.9
	Control	50	7,960	796

Cutting was carried out in 3 cycles (0–12 weeks). After each cutting, microplants were counted, which were placed in a nutrient medium and those that were culled. We found that with each cutting the number of microplants in the nutrient medium increases compared with the control (table). We found that a nutrient medium with nicotinic acid increases the multiplication factor of potatoes *in vitro* on average at 289. In this nutrient medium, micro-plants developed actively. We obtained plants length - 10.5 ± 1.8 cm green bubbled, rounded bubbled, photosynthesizing plants. Varietal affiliation as a whole does not affect the qualitative and quantitative characteristics of microtubers. Nicotinic acid for all varieties increases the multiplication factor from 30-35%. Such data allow us to conclude that the addition of nicotinic acid to the nutrient medium favorably affects the reproduction of potatoes *in vitro* .

As a result of these studies, it becomes possible to increase the yield of test-tube plants 3 months after planting a single source for 200-215 pieces, depending on the varietal accessories. In addition, the addition of nicotinic acid increases the length of internodes, which is convenient when graing micro plants.

The root system of meristem potato plants *in vitro* cultivated on this medium is more powerful, and such plants root better in the soil, as a result, the multiplication factor also increases.

Adding an increased concentration of nicotinic acid to the Murashige and Skoog nutrient media does not significantly affect the number of culled plants. So in control, 144 plants were culled , which amounted to 1.78%. In a nutrient medium with a high concentration of nicotinic acid, this indicator totals 1.55%. In a quantitative ratio, the control is 144, and in a nutrient medium with nicotinic acid 170. The yield of plants is 7,960 and 10 779 correspond to the control and M S + 1 ml nicotinic acid.

Conclusion. In modern conditions, it is extremely important to find effective ways to optimize the process of original seed production in the direction of reducing the necessary material, labor, energy resources and reducing production costs, especially at the stage of growing mini-tubers.

Thus, we have established that an increased concentration of nicotinic acid in the nutrient medium Murashige and Skoog has a positive effect on the number of microplants. By The number of plants increased by 2 845 pieces relative to the control, which in percentage was + 15%. The development of microplants is directly dependent on the composition of the nutrient medium.

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CHANGES IN THE STATE ATMOSPHERIC AIR IN THE TERRITORY OF THE GOMEL REGION UNDER THE INFLUENCE OF STATIONARY SOURCES OF POLLUTION

I. Borovtsov
F. Skorina GSU, Gomel, Belarus

Atmospheric air is the most important component of the natural environment, providing life and having unlimited capacity, tremendous mobility, chemical activity and ability to penetrate various spheres. The release of pollutants alters the composition of atmospheric air, thereby causing respiratory diseases. The purpose of the work is to study the state of atmospheric air under the influence of stationary sources of pollution, as well as to determine how stationary sources affect the health status of the Gomel region.

Material and methods. The material of the study was the state of the atmospheric air of the Gomel region (National Statistical Committee of the Republic of Belarus, 2012–2017). In this work, analytical and descriptive methods were used.

Findings and their discussion. In 2017, 203,4 thousand tons of substances polluting atmospheric air were released into the air in the Gomel Region. The share of pollutants emitted from stationary sources of pollution is 105,6 thousand tons, which is 9,7% more than in 2012 (95,4 thousand tons). On average, per inhabitant of the Gomel region accounts for 74 kg of pollutants. There is a trend towards an increase in pollutants per 1 km^2 of the territory. Thus, since 2015, there is an increase in pollutants by 1-5,7% (Table 1).

Table – Amount of pollutants from stationary sources of pollution

Year	Total, thousand tons	From stationary sources, thousand tons	Per inhabitant, kg	Per 1 km 2 of territory, kg
2012	222,1	95,4	67	2363
2013	225,9	102,7	72	2543
2014	215,3	101,6	71	2512
2015	205,3	99,9	72	2467
2016	207,7	104,6	74	2591
2017	203,4	105,6	74	2617

The main stationary sources of air pollution: woodworking, pulp and paper, chemical, petroleum industry, enterprises for the production of mineral fertilizers, heat and power, engineering and machine-tool construction, enterprises of the forest, electrical industry, which account for more than 51% of all pollutants [1].

The structure of emissions from stationary sources is dominated by (more than 33%) hydrocarbons, in second place is sulfur dioxide (19%), and the third (more than 15%) is carbon monoxide. Then follow NMVOC, nitrogen dioxide, solids, other substances and nitrous oxide (Figure 1).
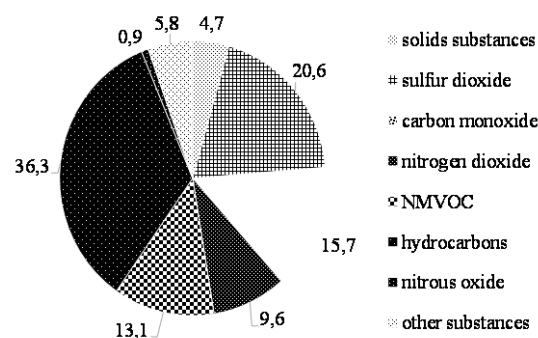
Figure 1 - Composition of pollutants (%) entering the air from stationary sources

Over the past 5 years, 1341,7 thousand tons of pollutants were caught and neutralized on the territory of the Gomel region. In 2017, significantly less pollutants were captured and neutralized, compared to 2012 – 223,2 thousand tons and 218,4 thousand tons (Table 2).

Table 2 – Number of stationary sources

Year	Total, in units	Organized sources, in units	With sewage treatment plants, in units	Caught and neutralized, thousand tons
2012	20966	18100	2836	230,4
2013	19962	16880	2781	218,4
2014	18548	15818	2941	230,5
2015	19673	16269	2667	211,4
2016	21457	17463	2670	227,8
2017	22812	18521	2766	223,2

During the same period, the amount of pollutants used was determined. Out of 1341,7 thousand tons, 658,4 thousand tons were used (more than 49%). In 2017, 97,3 thousand tons of pollutants were used. This figure is much lower (more than 18%) than in 2012, where they used 119,2 thousand tons of air pollutants.

Since 2013, the number of stationary sources of pollution has increased rapidly (by 1127–1784 units). At present, there are 22812 stationary sources on the territory of the Gomel region, of which 18521 are organized and 2766 are equipped with sewage treatment plants (Table 2).

Conclusion. The level of total air pollution in 2017 is estimated as "moderate" (III degree of pollution), on certain days with the appropriate wind direction to the observation station – as "strong" (IV degree pollution). We have attempted to establish a relationship between the quality of atmospheric air and the incidence of respiratory diseases. The findings are ambiguous. It was found that, against the background of moderate air pollution in the Gomel region, there is an increase in the incidence of respiratory diseases among the adult population: from 33,0 to 33,9% (for 2016-2017) and a decrease among the child population: from 75,5% to 73,3% [2–3].

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QUANTITATIVE ASSESSMENT OF PROTEOLYTIC ENZYME HOMOLOGY *HOMO SAPIENS* AND *BIOMPHALARIA GLABRATA* USING A RESOURCE BLAST

V. Dolmatova, I. Semenov
VSU named after P.M. Masherov, Vitebsk, Belarus

It is now considered established that proteolytic enzymes and their inhibitors are conservative. These systems originated in eukaryotic cells using preliminary preparations of prokaryotic cells.

Proteases play a diverse role in regulating the biology of virtually all organisms. In fact, they make up about 5% of all genes in any given genome. Before protease had a molecular unit removal "garbage", which just degraded proteins are used to maintain general homeostasis. However, detailed studies have shown that the functions of proteolytic enzymes are much more complex because they play key roles as regulators of important cellular processes such as cell signaling, cell division, cell death, and metabolism. Extracellular proteins and some cell surface proteins are absorbed by endocytosis and degraded in lysosomes. Some cytosolic proteins are degraded in the lysosomes after uptake in autophagic vesicles that fuse with lysosomes. Chaperone-dependent autophagy is also known, in which the directed transport of partially denatured proteins from the cytoplasm through the lysosome membrane into its cavity occurs. However, in all tissues of living organisms, most intracellular proteins are degraded by ubiquitin (ubiquitin, Ub)-proteasome pathway (UPP). This adjustable type of proteolysis plays the most important role in cell signaling [1].

The relevance of the study of the degree of homology of proteolytic enzymes in different types of organisms is associated with the search for tissues and cells that can be sources of these enzymes for practical needs (biopharmaceuticals, cosmetics, food).

The aim of the research is a comparative analysis of the degree of homology of proteolytic enzymes of regulated and unregulated proteolysis in humans and pulmonary freshwater mollusks. As a possible source for obtaining proteolytic enzymes, mollusks widely distributed in the reservoirs of Europe – *Planorbarius corneus*, the closest relative of which is a well-studied *Biomphalaria glabrata*, are chosen [2].

Material and method. The paper uses bioinformatic approaches based on the use of different servers: search and selection of nucleotide sequences encoding human proteins was carried out on the server https://www.ensembl.org; the search for homologous sequences for molluscs was carried out on the server https://www.ncbi.nlm.nih.gov using the resource BLAST.

The following enzymes of unregulated proteolysis were used for the analysis: Prolyl oligopeptidase (EC 3.4.21.26); Furin (EC 3.4.21.75); Signal Peptide Peptidase; Aminopeptidase B (EC 3.4.11.2); Leucyl aminopeptidases (EC 3.4.11.1); Thimet oligopeptidases (EC 3.4.24.15); and regulated proteolysis (ubiquitin-proteasome pathway): Ubiquitin conjugating factor E4 B-like (EC 6.3.2.19); Ubiquitin conjugating factor E2 W-like; Ubiquitin carboxyl-terminal hydrolase L5; Ubiquitin-like modifier-activating enzyme 5. For comparison, two enzymes of purine metabolism important for the synthesis of nucleotides are taken: Amidophosphoribosyl transferase (EC 2.4.2.14); Adenylosuccinate lyase (EC 4.3.2.2).

Findings and their discussion. As a result of the work done, the following indicators have been established: Expected value (the accuracy of the alignment), Identities (the percentage of matching amino acids or nucleotides; the similarity percentage), Query coverage (what percentage of the length of the original sequence is aligned with the found sequence). Table 1 presents the established indicators of the enzymes of the mollusk *Biomphalaria glabrata* in comparison with human enzymes.

Table 1. Parameters of enzymes mollusks *Biomphalaria glabrata*.

Enzyme	Type of sequence	Expected value	Identities	Query coverage
Unregulated proteolysis				
Prolyl oligopeptidase	NS[1]	2e-88	66 %	61 %
	AAS[2]	0.0	62 %	99 %
Furin	NS	1e-105	69 %	22 %
	AAS	0.0	68 %	79 %
Signal Peptide Peptidase	NS	8e-71	67 %	23 %
	AAS	7e-177	68 %	94 %
Amino-peptidase B	NS	1e-66	66 %	38 %
	AAS	0.0	50 %	89 %
Leucyl aminopeptidases	NS	9e-48	66 %	35 %
	AAS	0.0	55 %	94 %
Thimet oligopeptidases	NS	9e-52	66 %	16 %
	AAS	0.0	63 %	94 %
Regulated proteolysis				
Ubiquitin conjugating factor E4 B-like	NS	7e-33	72 %	4 %
	AAS	0.0	49 %	71 %
Ubiquitin conjugation factor E2 W-like	NS	2e-57	75 %	14 %
	AAS	1e-87	74 %	99 %

Ubiquitin conjugation factor E2 E1	NS	3e-66	74 %	24 %
	AAS	2e-84	88 %	65 %
Ubiquitin carboxyl-terminal hydrolase L5	NS	3e-89	72 %	12 %
	AAS	4e-162	67 %	96 %
Ubiquitin-like modifier-activating enzyme 5	NS	2e-88	76 %	17 %
	AAS	2e-151	59 %	99 %
E3 ubiquitin ligase	NS	3e-91	69 %	31 %
	AAS	0.0	51 %	85 %
Purine exchange				
Amidophos-phoribosyl-transferase	NS	1e-61	68 %	60 %
	AAS	0.0	67 %	97 %
Adenylosuc-cinate lyase	NS	7e-19	64 %	20 %
	AAS	2e-139	60 %	84 %

[1] – nucleotide sequence; [2] – amino acid sequence.

From the analysis of table 1 it follows that the percentage of similarity of nucleotide sequences of unregulated proteolysis is in the range of 66–69 %, and regulated proteolysis – 69–76 %. The percentage of similarity of amino acid sequences for both types of proteolysis has lower values (except for a few cases). The percentage of coverage for amino acid sequences is greater than for nucleotide sequences, because they have a shorter length in comparison with nucleotide sequences of enzymes and do not contain introns. The high degree of homology of the enzymes of the ubiquitin-proteasomal pathway in human and mollusc associated with the formation of the close of the tertiary structures of proteins.

Conclusion. The homology of enzymes unregulated proteolysis in humans and pulmonary freshwater mollusks is in the range of 66–69%, and the ubiquitin-proteasomal path – 69–76%.

The practical importance of a high degree of homology of proteolytic enzymes in humans and freshwater pulmonary mollusks justifies the formation of aquaculture of molluscs, for obtaining from their tissues protein enzyme preparations of proteolytic action within the tasks of biopharmaceutics, cosmetics and food industry.

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GENERATIVE REPRODUCTION OF MALE KISIL IN CULTURE IN NORTHEAST BELARUS

D. Ivanova
VSU named after P.M. Masherova, Vitebsk, Belarus

At present, the task of reviving gardening in the Republic of Belarus is particularly relevant. But the main areas in industrial and amateur gardening are occupied by traditional fruit crops (apple, pear, cherry, etc.). At the same time, among the so-called, rare fruit crops, there are many species with rich sets of valuable biologically active substances. These crops include male dogwood (*Cornus mas* L.) [1, p. 124 – 126].

One of the difficult moments in the agro-technique of the male cornel is the reproduction of this culture. Therefore, the purpose of this research is to study the peculiarities of generative reproduction of male cornel in the conditions of culture in the north-east of the Republic of Belarus.

Material and methods. The objects of the study were seeds, seedlings, adult plants of male dogwood, grown on the territory of the Vitebsk Botanical Garden of the Vitebsk State University named after P.M. Masherov.

We carried out a study of generative reproduction of male dogwood with various methods of stratification.

The studies were performed in 2016–2018. the type of dormancy of the male kizil seeds and the methods for removing it were determined using the work of Nikolaeva M.G. [2].

Findings and their discussion. The fruits were fermented in 2016 for one month, then the pulp was washed, the seeds were dried and stored in the basement before sowing. Seeds were sown in boxes with soil in January 2017. The repetition of the experiment was 4 times, 80 seeds were used in each replicate. Seeds were sown at a distance of 2 cm, the distance between the rows was 3 cm.

The boxes with soil were exposed to open ground for the passage of natural stratification. In June 2017, masses of male dogwood began to appear. During the growing season, seedlings were taken care of (watering, loosening, weeding).

In the spring of 2018, the male dogwood seedlings were removed from the boxes, the biometric indicators were measured and measured (the total length of the plant, the length of the shoot, the length of the main root were measured, and the number of vegetative buds was counted). Then the male dogwood seedlings were planted in rows in rows. The distance between the rows of 25 cm, between plants in a row – 20 cm.

Control – seeds of male dogwood, without first collecting the fruit.

It is known that seed germination is one of the main indicators of seed sowing qualities. The germination of male dogwood seeds was determined in June 2017 by counting seedlings.

We found that the field germination of cornel seeds from preliminarily fermented fruits amounted to 78.25 ± 4.5% (table). The control sowing of seeds from unfermented fruits showed a germination rate of 4.1 ± 0.02%, which is 14 times lower than in the experimental crops. This figure is alarming and requires further checks.

Table

Germination of seeds of male dogwood

Seed germination,%	
Control	Experience
4,1±0,02,	78,25 ± 4,5

In April 2018, we conducted biometric studies of one-year male dogwood seedlings. Measured (total plant length, shoot length, length of the main root, the number of vegetative buds was counted).

We found that the total length of an annual plant was 22.33 ± 0.59 cm, the length of the shoot was 10.29 ± 0.35 cm, the length of the main root was 12.04 ± 0.35 cm, the number of vegetative buds – 2.99 ± 0.09 cm.

Since there are few control plants, we do not present biometric data, because the indicators are not statistically reliable because of a small sample.

Conclusion. Thus, studies have shown that fermentation of male cornel fruit is a promising method of scaffolding, since a significant difference in seed germination is shown, which made it possible to obtain a sufficiently large number of plants.

Seeds of male dogwood feel good, grow, develop under the conditions of the Vitebsk Botanical Garden of the Voronezh State University named after P.M. Masherova.

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COMPARISON OF CATALASE ACTIVITY IN TISSUES OF THE PULMONARY FRESHWATER MOLUSKES THAT HAVE INHABITED IN NATURAL RESERVOIRS

E. Katsnelson, G. Orazmuradova
VSU named after P.M. Masherov, Vitebsk, Belarus

Currently, it is relevant to assess the status of aquatic ecosystems, due to an increase in the level of anthropogenic pressure. The widespread use of natural water bodies in industry and agriculture, the development of domestic water

supply, the impact of pollutants of various origins cause a variety of factors of anthropogenic pressure on water bodies. The main threat to the life of hydrobionts is pollution of water bodies with waste and heavy metals. The vital activity of biological organisms is influenced by the antioxidant defense system, which is involved in the neutralization of reactive oxygen species produced in cells under the influence of oxidative stress, whose mechanisms are associated with free radical oxidation. Excessive free radicals increase lipid peroxidation, resulting in oxidative transformations of polyunsaturated fatty acid phospholipids, neutral fats and cholesterol, which are the main components of cell membranes [1].

Today, the use of pulmonary freshwater mollusks as test organisms for assessing the state of the environment is relevant. Shellfish make up an important component of benthos. Being a bioindicator, mollusks have the following advantages among macrozoobenthos: a variety of taxonomic composition, ease of collection and a sedentary lifestyle [2].

The purpose of the study is to assess the activity of catalase of pulmonary freshwater mollusks of natural reservoirs of the Republic of Belarus, taking into account seasonality, habitat and type of oxygen transport.

Material and methods. The experiments were performed on 252 freshwater pulmonary mollusks divided into two groups: 126 individuals of *Lymnaea stagnalis* (common pond) and 126 individuals of *Planorbarius corneus* (horn coil). Mollusks were collected spring (April-May), summer (June-July) and autumn (September-October) from reservoirs of four districts of the Vitebsk region and three districts of the Gomel region (table 1). Each research subgroup contained 9 mollusks.

Table 1 – Places for the selection of mollusks

Shellfish collection area	Collection place	Pond name
Vitebsk district	Vitebsk	r. Vitba
Dubrovensky district	v. Lyady	l. Afanasyevskoe
Ushachsky district	v. Dubrovka	l. Dubrovskoe
Shumilinsky district	a/g Bashni	l. Budovest
Gomel district	Gomel	l. Lubenskoe
Mozyr district	v. Krasnaya Gorka	r. Pripyat
Rogachev district	Rogachev	r. Drut

Catalase activity was determined by the amount of undecomposed H_2O_2 determined by reaction with ammonium molybdate [3].

Mathematical processing of the results was carried out using parametric and non-parametric statistics using the statistical software package Microsoft Excel 2010, STATISTICA 6.0.

Findings and their discussion. The state of the environment has an impact on the growth, development and livelihoods of living organisms. Especially the environment affects hydrobionts, since toxicants and xenobiotics easily

accumulate in the water. According to the metabolism of mollusks, it is possible to judge the state of the aquatic ecosystem, to predict the degree of anthropogenic influence, the role of biotic and abiotic factors.

According to the results of the study, it was found that the indicators change not only under the influence of the environment, but also cyclically depending on the season of the year. This distribution of the values of the studied parameters, apparently, is due to the fact that the spring period is associated with a sharp rise in temperature during the daytime and lower during the night (instability of the temperature regime), insufficient food supply at the beginning of the season, and the release of anabiosis of hydrobionts.

Table 2 – Catalase activity (µmol / min / g) in hepatopancreas *Lymnaea stagnalis(M±m)*

Shellfish collection area	Season of the year		
	Spring (n=9)	Summer (n=9)	Autumn (n=9)
Vitebsk district	3,13±0,05[1]	2,56±0,07	2,85±0,09[1]
Dubrovensky district	3,03 ± 0,12	2,81±0,05	2,94 ± 0,08
Ushachsky district	3,20±0,29	2,87±0,16	3,06±0,40
Shumilinsky district	3,13±0,30	2,59±0,23	2,94±0,10
Gomel district	3,12±0,08	2,99±0,07	3,06±0,12
Mozyr district	4,57±0,12	3,62±0,08	4,19±0,11
Rogachev district	5,28 ± 0,19[1]	3,35±0,04	4,28 ± 0,12[1]

Note – [1]p <0,05 compared with the summer period of collecting mollusks; [2]p <0,05 compared with the autumn period of collecting mollusks

Compared with the spring and autumn collection periods in the hepatopancreas of *Lymnaea stagnalis*, the activity of catalase was reduced in the summer period in all the studied areas (table 2). Compared with the summer collection period, catalase activity increased 1,2 times in the Vitebsk and Shumilino regions, 1,3 times in the Mozyr district and 1.6 times in the Rogachev district in the spring collection period.

Table 3 – Catalase activity (µmol / min / g) in hepatopancreas *Planorbarius corneus (M±m)*

Shellfish collection area	Season of the year		
	Spring (n=9)	Summer (n=9)	Autumn (n=9)
Vitebsk district	2,80±0,05	2,17±0,07	2,66±0,11
Dubrovensky district	3,04 ± 0,09	2,38±0,04	2,76 ± 0,08
Ushachsky district	2,89 ± 0,09	2,66±0,05	2,79 ± 0,08
Shumilinsky district	2,71 ± 0,04	2,47±0,08	2,60 ± 0,10
Gomel district	3,16±0,06	2,83±0,11	3,02 ± 0,07
Mozyr district	4,58 ± 0,15[1]	1,10±0,05	2,34 ± 0,09[1]
Rogachev district	4,52 ± 0,14[1]	1,12±0,06	2,86 ± 0,17

Note – [1]p <0,05 compared with the summer period of collecting mollusks; [2]p <0,05 compared with the autumn period of collecting mollusks

Compared to the summer collection period, catalase activity increased 1.3 times in the Vitebsk and Dubrovno districts, 4,2 times in the Mozyr and Rogachev districts in the spring collection period (table 3).

There were no statistically significant differences in catalase activity in mollusks depending on the type of oxygen transport in all the studied regions of the Vitebsk and Gomel regions.

According to the data obtained, the activity of catalase in the metapopancreas of mollusks has been established that mollusks from the Vitebsk region are lower on average by 1,5 times compared to the Gomel region (Mozyr and Rogachev districts).

Conclusion. In the course of the work, it was established that the indicators of AOS of the tissues of pulmonary mollusks change under the influence of the environment and depend on the season of the year and the background radiation background. The content in water of various pollutants (metal ions, organic substances, etc.) negatively affects the work of enzymes. All the results described in the summer period were an order of magnitude smaller than the spring indicators. This suggests an increased work of AOS of pulmonary mollusks at the time of their release from anabiosis. Depending on the oxygen carrier, no regular changes in catalase activity were recorded.

The difference in the activity of indicators of the enzyme system of mollusks of the Gomel and Vitebsk regions lies in different temperature conditions. Gomel is characterized by a warmer climate, which means that hydrobionts in this area previously come out of hibernation, as a result of which their response to environmental conditions will differ from the reaction of hydrobionts from the Vitebsk region. The increased background radiation indicates that the FLOOR will be higher in the territory of the Gomel region. As a result, the enzymatic AOS itself does not cope with this level of oxidative stress.

The results of the study can be used for biomonitoring and bio-diagnostics of the state of freshwater bodies, in assessing the degree of anthropogenic impact on the environment.

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PREREQUISITES FOR THE DEVELOPMENT
OF ETHNOGRAPHIC TOURISM IN THE VETKA DISTRICT

J. Melnikova
Francisk Skorina Gomel State University, Gomel, Belarus

Ethnographic tourism is a special kind of tourism, the basis of which is a visit to the ethnographic objects in order to learn the culture, architecture, life of a people (ethnos), living or living in this territory [1].

Ethnographic tourism is important to develop in vetkovskiy district, as this area is the focus of old believers 'culture, where the old believers' craft is preserved.

The aim of the study is to identify the potential of ethnographic development in vetkovskiy district.

Material and methods. Information sources were the museum fund of the Vetka Museum of Folk Art and Weaving Center, archival documents, the results of conversations with museum staff, residents of the city and rural settlements of the district.

When performing the work, empirical research methods (observations and qualitative comparison, description), theoretical cognition and general logical methods and techniques were used.

Findings and their discussion. The center of vetkovskiy district is the city of Vetka. Vetka is a small town in the Gomel region, founded by old believers (they are old believers, they are schismatics). In this regard, vetkovskiy district is distinguished by its old rites, customs and traditions – culture and craft: books, icons, wood carving, embossing, weaving, sewing. All this is presented in the vetkov Museum of folk art-unique and one of a kind. It is based on the collection of vekovshinina F. G. Shklyarov, a representative of the old believer family, and later it was supplemented by exhibits from all of the Vetka district. The permanent exhibition was opened on November 1, 1987 in the renovated and reconstructed historical building – the house of merchant Groshikov.

The exposition of the Museum is primarily notable for a large number of old believers ' icons. Most of them are from the Vetka school of icon painting. A distinctive feature of the icons are strong highlights around the mouth-chin and the characteristic shape of the upper lip, hanging over the swollen, bifurcated lower lip. Witkowska painters were isolated by cinnabar (raw materials for production of mercury) Maiduguri, and sometimes the border of the lower lip, which is an ancient tradition.

The tradition of weaving towels Belarusians preserved longer than others. Bench hammers accompanied the person throughout all life: from the birth and before burial. As a result of researches and expeditions along the Slavic rivers about three thousand woven bench hammers have been assembled, now it is one of the most interesting collections of Belarus. In an ornament red color prevails.

This color at radimichy was identified with color of blood, life, the sun. At the heart of an ornament – ancient geometrical signs. Once employees skilled workers learned to distinguish one element from another the museum: for each sign there is a special name. Today such names about 700 are recorded.

The centers of weaving are the majority of villages of Vetkovsky district: Neglyubka, Svetilovichi, Cossack Bolsuny, Yanovo, Prisno, Yurkovichi, Pykhan.

In collections of national fabrics (a suit, tapestry materials, bench hammers) there are more than 1800 objects. Weaving from the village of Neglyubka significantly differs from other types of weaving. His special line is improvisation and an unusual variety of patterns. Today ethnographers contain 120 kinds of ornaments in the Vetkovsky region. Semantics of a national suit is presented on the example of tradition of the village of Neglyubki, unique on safety of ancient elements. Transition from one age and marital status to other every time was followed by changes in a suit. For each age – the world.

In the museum it is possible to see the weaving loom – "krosna". Europeans borrowed this type Arabs in the 10th century. Before there were vertical machines, but at the weaver hands quickly were tired. Weaved generally in the winter when there were no agricultural works. Five show-windows of the embroidered fabrics rise to a ceiling. Geometrical symbols are followed by graphic "translations".

Uniqueness of book culture of the Branch not so much that she has kept and has informed us of the most rare old printing and hand-written books, how many that she has kept ancient traditions of book art. Here continued to create manuscripts in the 20th – the 30th years of the XX century.

The Fund of the Museum more than a hundred manuscripts of the XVI-XIX centuries, 590 old monuments (including the works of Ivan Fedorov, Peter Mstislavets, Basil Garaburdy, Onesimus Radishevskogo, Belarusian, Ukrainian and Moscow printing yards of the XVI-XVIII centuries). The Museum presents the exhibition "the Way of books on the Branch" – a map-scheme, which marked the city and the way, where and where they were directed. It turned out quite a vast geography: from Arkhangelsk to Maikop, from Zabludov to Krasnoslobodsk, on the Volga. Today it includes 77 cities and gives an almost complete picture of the long ways in which the books "went" on a Branch.

In the window of "Creation books" the book as would have been decomposed: paper of different centuries, fragments of binding (leather, Board), sample fasteners, cast plaques with pictures of the evangelists. In the center is the gospel, published in Vilna in 1600. Unfortunately, we rarely get the rich clothes in which he dressed book. But this can be learned from the records left in books Vitkovskij merchants, how much gold and silver they have invested for the manufacture of book salaries.

A fragment of the exhibition, which presents the tools of the master bookbinder: a machine, a round knife for trimming the block of the book, a

roller for stamping ornament on the skin. Using such tools in the 30-ies of XX century, intertwined books in vetkovsky settlement. They were dressed in new clothes so that they could continue their journey to the next generations. Carefully preserved every surviving fragment of the printed the text, which was very important for the old believers, who preserved an amazing culture of communication with the book, the relationship to it.

In the early twentieth century ethnographer Ivan Abramov wrote that house of Twigs decorated with carvings. Builders-Vidovdan, returning from the outhouse crafts for the winter, tried to make the architectural marvel, and his own house. Elements of this culture can be seen now both in the branch And in the villages of vetkovskiy district: Svetilovichi, Neglyubka, Big Nemki, Small Nemki… It is known that many motifs of architectural carving were taken from decorated ancient manuscripts, It was". This peculiarity of the Old Believer dwelling influenced the formation of the "interfaith" style of carved art of the Gomel region, which flourished almost until the end of the 20th century.

Museum staff are engaged in research activities. One of the best projects of the museum is the "Vyratavanne of the Inexpensive Signs" – the salvation of cultural monuments of the region. The project has several directions. One of them is archaeological research and measures to preserve the archaeological monuments of the area. in addition to this project, the museum explores the traditions of weaving of the Vetka district, systematizes information about the Old Believers' book culture (makes the exhibition "Belarusian History School" in the Museum of a rare book in the Gomel Regional Library name of Lenin), about the Vetka school of icon painting, about the house architectural carving, collects and popularizes oral folk art.

Conclusion. Vetka district has a unique and rich potential for the development of ethnographic tourism.

Everyone has heard about the Old Believers, but it is in the Vetka Museum that one can learn a lot of new and exciting things about this community of persecuted people. here you are immersed in truly ancient Belarusian traditions and rituals. There are collected such interesting exhibits, which can hardly be seen elsewhere. A visit to Vetka will be interesting to those people who are interested in the history of folk crafts and rituals. It is a place of pilgrimage for Old Believers from around the world.

Unique traditions of folk handicrafts, such as weaving, wood carving, chasing, have been preserved here. Rushniki from this area have a special colorful pattern. The ancient culture of typography also attracts attention.

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THE CONDITION OF TWO POPULATIONS OF THE BELLS BROADLINK ON THE TERRITORY OF VITEBSK AREA

E. Neson
VSU named after P.M. Masherova, Vitebsk, Belarus

In order to carry out environmental protection measures of plant objects of the Republic of Belarus, it is necessary to periodically conduct an examination of the state of coenopopulation of protected plants listed in the Red Book of our country. This will make it possible to correct the work on the protection of these objects and to plan further practical practical methods for the protection of these populations in our region.

The purpose of this work is to study the state of two populations of the protected species of the Republic of Belarus – a bellshaped bell (*Campanula latifolia* L.) in the Vitebsk region.

Material and methods. The object of our study is 2 broadleaf bell populations on the territory of the Vitebsk region. Population 1 is located in the neighborhood of the village of Sakolniki. Population 2 is located in the floodplain. Zaronovka 800 m southwest of the village of Malaya Letsy.

Broadlea bell is protected in the status of IV category of national environmental value. It is included in the 1-st – 3-rd editions of the Red Book of the Republic of Belarus. Included in the Red Books of the Pskov and Smolensk regions of the Russian Federation [1, p. 238–239].

Studies were performed in 2017–2018. Geobotanical studies of populations were performed using the technique described in the multivolume publication "Полевая геоботаника" [2]. Specification of the species composition was carried out according to the "Определитель высших растений Беларуси" [3].

Findings and their discussion. We have compiled a geobotanical description of two natural populations of Campanula latifolia in the territory of the Vitebsk region. In the description, the average projective cover, occurrence, viability, average height and phenophase of plants at the time of description were determined. The abundance in points by occurrence and projective cover, by Drude and by Brown-Blanca in points was also determined. Population Description 1 was carried out on 06.20.2017. The population is already located in the city limits of Vitebsk in the floodplain of the stream flowing into the r. Luchesa west of the village Sakolniki. For the geobotics description, this population was also chosen because here, together with a kolokolchik broadleaf, northern aconite grows (the only place of growth in Belarus). The data on the description are summarized in Table 1. In addition to the wide-leaf bell, this table and the following are the protected species, or those that need preventive protection.

Table 1

Geobotanical description of the *Campanula latifolia* population in the vicinity of the village of Sakolniki, Vitebsk District

No.	Of the name of the plant	Average protive coverage, %	Meeting rate, %	Abundance			Average height, cm	Vitality, point	Feniofaz score
				On meeting and pro-tive nomu kyutiyu, point	On Drude, point	On Brown-Blanke, point			
1	Wide-leaved bellflower	4,63	40	3	Sp	1	71,58	3	veg.
2	Peresleska noble	1,67	23,33	3	Sol	1	16,71	3	veg.
3	North aconite	9,8	40	4	Sp	2	92,08	4	veg., col.

The average projective cover of the broad-leaved bell is 4.63%, the occurrence is 40 %, the vitality is 3 points. The abundance of occurrence and projective coverage was 3 points. Phenophase at the time of the description – vegetation. The total projective ground cover of grass cover was 75.67 %. The average acidity of the population was 6.8. The state of this population of the broad-leaved bell is satisfactory. A set of vegetation for this habitat is typical with the exception of northern aconite. The stand is represented by willow brittle and alder gray. Among the undergrowth identified: gray alder, common ash, Norway maple. The undergrowth is bird cherry, common hazel, black currant, honeysuckle.

Geobotanical description of the population 2, located in the floodplain Zaronovka, 800 m south-west of the village of Maliye Lettsy, Vitebsk region, was held on 09.07.2018. The data are summarized in Table 2. The average design coverage of the broadleaf bell was 6.6%, the prevalence was 53.3%, and the vitality was 3 points. The abundance of occurrence and projective coverage was 4 points. Phenophase at the time of the description – flowering and budding. The total projective cover of the ground grass cover was 37 %. The average acidity for a population was 6.73.

Table 2

Geobotanical description of the *Campanula latifolia* population in the vicinity of the village of Maliye Lettsy, Vitebsk district, in the floodplain of the r. Zaronovka.

No.	Of the name of the plant	Average protive coverage, %	Meeting rate, %	Abundance			Average height, cm	Vitality, point	Feniofaz score
				On meeting and pro-tive nomu kyutiyu, point	On Drude, point	On Brown-Blanke, point			
1	Wide-leaved bellflower	6,6	53,3	4	Sp	2	47,22	3	bottles, col.
2	Ostrich Man	0,87	20	1	Sol	+	23,75	3	veg.

The state of this population of the broadleaf bell is satisfactory. The stand is represented by pedunculate oak and Norway maple. Among the undergrowth identified: pedunculate oak, elm elm, quivering poplar, gray alder, common ash, acute maple maple. The undergrowth is bird cherry, common hazel, black currant.

Conclusion. Based on the indices of the occurrence of a wide-bell in the studied populations 1 and 2 (40 and 53.3%, respectively) and a high vitality index (3), we can draw a conclusion about the satisfactory condition of these broad-leaved bell populations.

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MODERN TENDENCIES OF SCIENTIFIC INTEREST IN THE PROBLEM OF INVASIVE ANIMAL AND PLANT SPECIES IN EUROPEAN COUNTRIES' SCIENTIFIC PUBLICATIONS

J. Novikova, A. Yakimenko
VSU named after P.M. Masherov, Vitebsk, Belarus

The resettlement of various types of plants and animals around the planet is a side effect of the commodity circulation in the world's development, climate change, the commodity-transport networks' development. One of the modern environmental problems is the rapid spread of invasive species. Invasive species are objects of wildlife that are settled in the course of human activities, which may raise the question of the local flora and fauna species' existence.

Relatively recently, research has begun on the identification of such species, their inventory, the development of destruction measures, etc. All activities involving the prevention of the alien species to new territories' spread are regulated according to the Convention on Biological Diversity, signed in 1992 in Rio de Janeiro [1].

Active research has begun worldwide in the field of work with invasive species: determining the rate of spread, analyzing the results of alien species into new territories' introduction.

In the Republic of Belarus, as well as throughout the world, the last few years have been actively combating rapidly spreading invasive species, such as *Heracleum sosnowskyi*, *Solidago Canadensis* and *Echinocystis lobata*.

The purpose of this study was to analyze the scientific interest in the problem of the invasive species' spread, the experience gained in their inventory.

The relevance is a certain summing up over the past decades of experience in conducting research of invasive species field.

Material and methods. The main material for the work was the content analysis of leading international scientific databases, such as PubMed, Scopus and Web of Science.

Articles of journals and conference materials including topics of invasive species in Europe since 1990 were chosen for consideration.

The primary analysis was carried out according to several criteria: the type of plant or animal (we were primarily interested in plants and insects); determination of the frequency of occurrence of a species in this kind of research and the possibility of applying the described experience.

Findings and their discussion. 64 articles were selected for the analysis, where most met all the established search criteria. In general, in one way or another, the problem of biological invasions has been touched upon in more than 300 scientific articles. Changes in interest in this research topic can be

represented as a graph showing the interest of the scientific community's increase (Figure 1).
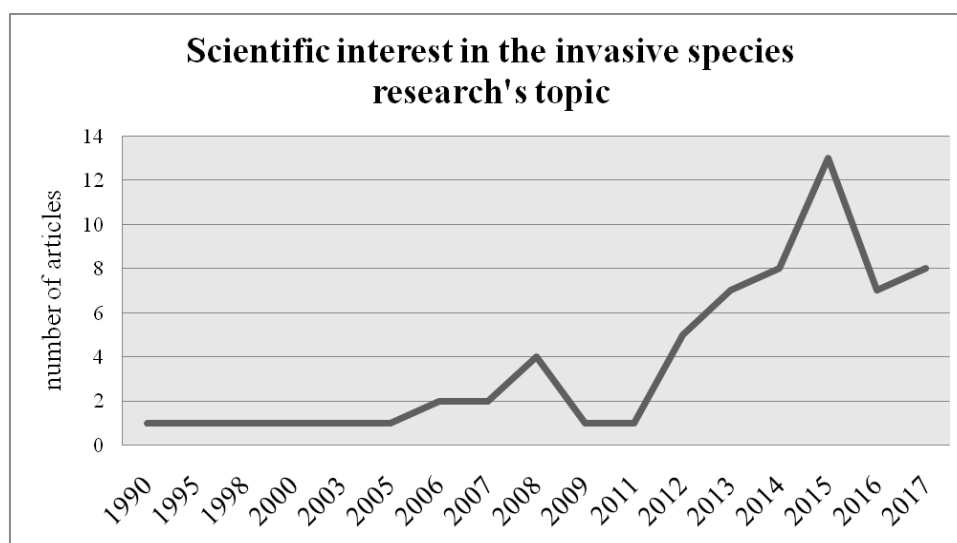

Figure 1 – Scientific interest's changes in the invasive species' topic

As a result of the analysis, it became clear that interest in the invasive species study increases of every year, although it has undergone a slight decline in some years. Probably, the growth of scientific interest is directly proportional to the rate of spread and rate of change of native flora and fauna's biodiversity. As a rule, this sharp reduction of species already in the first years of the "neighborhood" with invasion [2].

In the analysis of articles, it was found that the focus is on insects (39 articles out of 46 published in the period from 1990 to 2017). First of all, mosquitoes (*Aedes albopictus* and *Aedes japonicus* are two main invasive species), which are actively "capturing" new territories. Also, these are *Harmonia axyridis*, *Diabrotica virgifera*, *Anoplolepis gracilipes* and other species of hipworms.

It can be seen that the focus is on the mosquitoes' (*Aedes albopictus* and *Aedes japonicus*) study because these species are especially dangerous to humans. Mosquitoes are carriers of viral infectious diseases to Europe, such as chikungunya and dengue fevers. More rarely, there may be carriers of another viral disease, yellow fever, but cases of the disease are extremely rare. The fight against both invasive species and the consequences of their spread (reduction in the number of native species, treatment of diseased people) is conducted not only at the local levels but also at the international level. For example, the World Health Organization (the Regional Office for Europe) carries out a strict epidemiological survey and control over the implementation of measures to combat invasive species (conducting transboundary programs) [1].

Analyzing the publication activity of invasive plants, we can distinguish two of the most common genus: *Heracleum* and *Solidago*. In their composition

and species common in Belarus: *Heracleum sosnowskyi*, *Heracleum persicum*, *Heracleum mantegazzianum*, *Solidago canadensis*, *Solidago gigantea*. The active uncontrolled spread of invasive species in Eastern Europe, threatening not only the biodiversity of the territories but also the health of the population, *Heracleum sosnowskyi* has been known since the 1980s. At the same time, the first events on the invasion's local destruction began, but in the absence of a coordination center that could organize a coordinated and qualified "struggle" there was no. In 2005 the collective authors released The Practical Guide to Combating Giant Hogweed (based on European experience in dealing with invasive weeds), which became the main reference source for all land users faced with the problem of "contamination" of the territories by *Heracleum*. The fight against the spread of *Solidago* is also underway, but not so organized, since direct contact is not dangerous either to humans or to animals.

Conclusion. We can conclude about the high level of work's related relevance of to the study of invasive species. For comparison, in the Republic of Belarus such scientific papers began to appear only in the last 5-7 years. Such studies are gaining popularity since the problem of active propagation takes a leading position on par with other environmental problems of our time. The main work is carried out on invasive plant species' inventory and analysis of growth in our country, while studies related to the examination of invasive insect spreads are very rare.

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ACTIVITY OF GENERAL GLUTATHIONPEROXIDASE IN THE HEMOLYMPH OF A PONDER OF THE ORDINAL

N. Polozova, V. Morozova
VSU named after P.M. Masherov, Vitebsk, Belarus

Environmental changes affect aquatic ecosystems in general and their inhabitants in particular. Therefore, pulmonary freshwater mollusks are used as bioindicators of anthropogenic influence on the environment. Bioindication methods have a number of significant advantages compared with physicochemical methods of analysis: high sensitivity and specificity of bioindicators to toxic substances; summation of all pollution data without exception; the ability to characterize the state of a particular environment over a long period of time; low cost of research.

Determination of the metabolism characteristics of pulmonary freshwater mollusks was carried out taking into account seasonal changes and habitat conditions of individuals selected from six studied reservoirs. The study of the biochemical parameters of these organisms gives us a theoretical basis for the qualitative assessment of the state of the studied ecosystem [1].

The aim of the research is to investigate the content of glutathione peroxidase in the hemolymph of Lymnaea stagnalis, depending on the season of the year and habitat.

Material and methods. The experiments were conducted on 108 individuals of *Lymnaea stagnalis* (common pond snail). Mollusks were collected in spring (April-May), in summer (July) and in autumn (September-October) from reservoirs of six districts of the Vitebsk region (table 1). Each research subgroup contained 9 mollusks.

Table 1 – Places for the selection of mollusks

Shellfish collection area	Collection place	Pond name
Vitebsk district	Vitebsk	r. Vitba
Dubrovensky district	v. Lyady	l. Afanasyevskoe
Ushachsky district	v. Dubrovka	l. Dubrovskoe
Shumilinsky district	a/g Bashni	l. Budovest

The principle of the method. The method for determining the total activity of glutathione peroxidase is based on measuring the amount of unreacted with hydrogen peroxide GSH, determined by reaction with DTNBK [2].

The course of determination.

Table 2 – Scheme for determining the total activity of glutathione peroxidase (GP)

Stages	Experimental sample	Control sample
1. Hemolymph, ml	0,15	0,15
2. 0.25 M Tris-HCl buffer, (pH 7.4), ml	1,5	1,5
3. 25mM EDTA ml	0,05	0,05
4. 0,4 M NaN_3, ml	0,05	0,05
Incubated for 5 min at 37 ° C		
5. 5mM GSH, ml	0,15	0,15
Incubated for 5 min at 37 ° C		
6. 5mM H_2O_2, ml	0,05	–
Incubated for 5 min at 37 ° C		
7. 10% THU	1,0	1,0
8. 5mM H_2O_2, ml	–	0,05
Centrifuged for 15 min at 3000 rpm		
9. Supernatant, ml	0,3	0,3
10. 0,2 M KNFB, ml	3,0	3,0
11. DTNBK, ml	0,1	0,1
Incubated for 10 minutes at room temperature.		
Measure the optical density at a wavelength of 412 nm		

Mathematical processing of the results was carried out using parametic and non-parametric statistics using the statistical software package Microsoft Excel 2010, STATISTICA 12.5.

Findings and their discussion. Glutathione peroxidase activity depends on the season of the year. It was established that the highest activity of this indicator is recorded in the spring, the smallest values - in the summer period of the collection of mollusks. (table 3).

Table 3 – Glutathione peroxidase activity (µmol / ml min) in the hemolymph of tissues of pulmonary mollusks of the genus *Lymnaea stagnalis* ($M \pm m$)

Shellfish collection area	Season of the year		
	Spring (n=9)	Summer (n=9)	Autumn (n=9)
Vitebsk district	$6,70\pm0,25^1$	$5,82\pm0,13^2$	$6,30\pm0,37^1$
Dubrovensky district	$6,90\pm 0,40$	$5,60\pm0,35$	$6,20\pm 0,40$
Ushachsky district	$6,60 \pm 0,30$	$5,10\pm0,25^2$	$6,00 \pm 0,60^1$
Shumilinsky district	$6,60 \pm 0,11^1$	$5,70\pm0,33^2$	$6,20 \pm 0,77^1$

Note - ^{1}p <0,05 compared with the summer period of collecting mollusks; ^{2}p <0,05 compared with the autumn period of collecting mollusks

When comparing this indicator between the districts, it was found that the highest values and their variation was observed in mollusks collected in the Vitebsk and Dubrovno districts. When comparing the indicator of mollusks from running water (Vitba river, Vitebsk region) and standing water (lakes of all other areas), higher values are observed for mollusks collected and living in running water.

Compared to the summer period of collection, in the mollusks glutathione peroxidase activity is increased in spring by 1,2 times in the Vitebsk, Dubrovensky and Shumiln regions, 1,3 times in the Ushachsky district. Compared with the summer period of collection in the mollusks, glutathione peroxidase activity in the autumn period was increased by 1,2 times in the Ushachi district. Compared with the autumn period, the activity of glutathione peroxidase in the tissues of the pond snail during the spring period, no statistically significant differences were found (table 3).

Conclusion. Glutathione peroxidase catalyzes the reduction reaction of glutathione hydrogen peroxide and to a lesser extent unstable organic hydroperoxides. In the course of this study, it was revealed that the content of glutathione peroxidase in the hemolymph of *Lymnae stagnalis* varies by seasons and areas of collection. The following pattern is observed: in summer, the collection of low values of this indicator are recorded, which is associated with the most favorable environmental conditions for the life of organisms, and the highest values – in the spring, during this period, the mollusks experience oxidative stress due to lack of food and seasonal daily temperature fluctuations habitat.

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DETERMINATION OF THE CONTENT AND STABILITY OF PHENOLIC COMPOUNDS IN THE EXTRACTS FROM THE LEAVES OF DANDELIUM OFFICINAL

J. Proshko, K. Shenderova
VSU named after P.M. Masherov, Vitebsk, Belarus

Currently, all relevant studies of the chemical composition of wild plants, one of which is dandelion medicinal (Taraxacum officinale) [1]. This perennial herb is characterized by high growth rate of the aboveground part and unpretentious to climatic conditions. The roots of dandelion are included in most Pharmacopoeia of the world, including the state Pharmacopoeia of the Republic of Belarus. They are used to treat diseases of the gastrointestinal tract. Accordingly, only the underground part is harvested, and the above-ground part is discarded [2]. However, in foreign medicine is widely used not only the roots but also the leaves of the plant. In some countries, such raw materials are used as an anti-inflammatory and immunomodulatory agent, as well as used in food.

Previously, studies were conducted, the results of which in the leaves of the dandelion of the drug was found the presence of biologically active substances with wound healing properties [3]. Therefore, extracts obtained from such inexpensive and affordable raw materials can be introduced into the composition of cosmetic products for the care of problem skin. One of the most popular and inexpensive cosmetic products is lotion. This cosmetic product is easy to make and use, it is applied to the skin without rubbing and acts directly on the epidermis. Lotion combines several functions of skin care: clean from dirt, moisturize dry areas, dry small inflammation. This multifunctional product is very convenient for oily skin care, as it is not recommended to overload it with cosmetics [4].

The aim is determination the amount of phenolic compounds in alcohol extracts from the leaves of the dandelion.

Material and methods. The object of the study was the leaves of dandelion medicinal collected in autumn 2018 on the territory of Vitebsk region. Harvesting of raw materials was carried out on a well – lit area, because light is one of the factors affecting the accumulation of flavonoids and phenolic compounds in the leaves.

Quantitative determination of the sum of phenolic compounds was carried out by the following method [5]. We prepared 2 series of extracts of 10 bottles in each. The optical density of the obtained extracts was measured at a wavelength of 720 nm on the day of preparation of the extraction and a week later. The content of the sum of phenolic compounds as a percentage (in terms of gallic acid) was calculated.

Findings and their discussion. Phenolic compounds contained in the leaves of the dandelion officinalis perform a number of vital functions. They

react with radioactive elements, accelerating their removal, and increases the rate of exchange processes. Also, these substances enhance the synthesis of collagen, therefore, increases the elasticity of the skin. Phenolic compounds have a number of actions on the skin: anti-inflammatory, bactericidal, antioxidant. In addition, they improve the structure of vascular walls, blood circulation and metabolic processes, protects hormones from oxidation-reduction reactions, promotes the fast healing of minor abrasions and crazing, dried acne. Consequently, the extraction of such affordable and inexpensive raw materials can be introduced into the cosmetic lotions used to care for oily and problem skin.

Table – Content of the sum of phenolic compounds in extracts from the leaves of in the leaves of ***Taraxacum officinale***

Extraction	Content of the sum of phenolic compounds, X %	
	Series 1	Series 2
Fresh extraction (05.10.2018 y.)	11,31±0,98	13,00±0,90
Week-long extracton (11.10.2018 y.)	8,36±1,13*	11,51±0,68

Note: * – $p < 0.05$ compared to the series 2

As can be seen from the table, the content of the sum of phenolic compounds is significantly higher in freshly prepared extracts than in extracts from a week ago (in series 1 by 1.35 times, in series 2 by 1.13 times). This is due to the fact that the phenolic compounds are unstable, enter into chemical reactions under the action of light and air oxygen. Consequently, the introduction of such extracts in lotions requires the use of preservatives, such as organic acids (citric, salicylic). In addition, these organic acids, along with vegetable lotion extraction, have anti-inflammatory, bactericidal, antioxidant effects. In addition, citric acid easily removes the keratinized layer of the epidermis, almost without damaging the lower layers of the skin (soft chemical peeling). Citric acid has bleaching properties, therefore, this lotion will be convenient for use in pregnant women, as in this period due to the restructuring of the hormonal background may occur not only small rashes on the skin, but also age spots.

Conclusion. In recent years, despite the large number of synthetic cosmetics, interest in herbal remedies is becoming more relevant. This is due to the low cost and availability of raw materials, as well as more rare and mild side effects. A lotion containing extract from the leaves of the dandelion can be used for skin care in adolescents, pregnant women, and patients undergoing long-term hormonal therapy, because of alterations in the endocrine system, this category of people has certain skin problems.

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CONTENTS OF LIPID EXCHANGE INDICATORS IN PULMONARY MOLUSKS DWELLING IN THE NATURAL RESERVOIRS OF THE VITEBSK AND GOMEL REGIONS

L. Sidorova, V. Galenova
VSU named after P.M. Masherov, Vitebsk, Belarus

Adverse environmental factors have a negative impact on all levels of biological organization: from molecular genetic to biogeocenotic. Therefore, an objective assessment of their consequences for organisms is possible only on the basis of an integral approach, which allows assessing changes in biosystems of different levels [1].

Lymnaea stagnalis and Planorbarius corneus are widespread types of pulmonary mollusks living in freshwater bodies of Eurasia, including Belarus. Pond crow and cornea are easily cultivated, representatives are not difficult to identify and therefore often serve as objects of environmental, physiological and biochemical studies [2].

The purpose of our research is to study the possibility of using indicators of pulmonary mollusc lipid metabolism for monitoring the state of natural water bodies.

Material and methods. The experiment was performed on 378 pulmonary freshwater mollusks of two kinds: 189 individuals of *Lymnaea stagnalis* (common pond snail) and 189 individuals of *Planorbarius corneus* (horn coil). Mollusks were collected in autumn (September-October) in the reservoirs of four districts of the Vitebsk region and three districts of the Gomel region (table 1). Each research subgroup contained 9 mollusks.

Table 1 – Places for the selection of mollusks

Shellfish collection area	Collection place	Pond name
Vitebsk district	Vitebsk	r. Vitba
Dubrovensky district	v. Lyady	l. Afanasyevskoe
Ushachsky district	v. Dubrovka	l. Dubrovskoe
Shumilinsky district	a/g Bashni	l. Budovest
Gomel district	Gomel	l. Lubenskoe
Mozyr district	v. Krasnaya Gorka	r. Pripyat
Rogachev district	Rogachev	r. Drut

Determination of triacylglycerols (TG), total cholesterol (total cholesterol), HDL cholesterol (HDL cholesterol) in the hemolymph was performed by standard biochemical reactions using the Analysis X reagent kits [3].

Mathematical processing of the results was carried out using parametric and non-parametric statistics using the statistical software package Microsoft Excel 2010, STATISTICA 12.5.

Findings and their discussion. The content of TG, OHS and HDL cholesterol in the hemolymph are presented in table 2.

Table 2 – Content of total cholesterol (mmol / l), high density lipoprotein cholesterol (mmol / l), triacylglycerols (mmol / l) in the *hemolymph Planorbarius corneus* and *Lymnaea stagnalis* depending on the habitat *(M±m)*

Shellfish collection area	Indicator		
	Total cholesterol (mmol / l)	High density lipoprotein cholesterol (mmol / l)	Triacylglycerols (mmol / l)
Lymnaea stagnalis			
Vitebsk district	0,418±0,020	0,056±0,013	0,298±0,008
Dubrovensky district	0,504±0,018[1]	0,086±0,008[1]	0,404±0,006[1]
Ushachsky district	0,560±0,015[1]	0,070±0,008[1]	0,354±0,008[1]
Shumilinsky district	0,494±0,011	0,065±0,009	0,347±0,008[1]
Gomel district	0,410±0,02	0,074±0,011[1]	0,290±0,01
Mozyr district	0,480± 0,01	0,078± 0,014[1]	0,340± 0,02[1]
Rogachev district	0,550± 0,01[1]	0,081± 0,021[1]	0,360± 0,01[1]
Planorbarius corneus			
Vitebsk district	0,316±0,022	0,119±0,006	0,192±0,008
Dubrovensky district	0,281±0,012[1]	0,058±0,003[1]	0,324±0,006[1]
Ushachsky district	0,368±0,014[1]	0,072±0,007[1]	0,232±0,011[1]
Shumilinsky district	0,328±0,011	0,073±0,006[1]	0,226±0,011
Gomel district	0,310±0,02	0,14±0,01[1]	0,230±0,02
Mozyr district	0,340± 0,01[1]	0,10± 0,003[1]	0,240± 0,01
Rogachev district	0,370± 0,02[1]	0,11± 0,004[1]	0,310± 0,03[1]

[1]$p < 0,05$ compared with mollusks from p. Vitba Vitebsk district

It is noted that *Lymnaea stagnalis* has cholesterol levels, HDL cholesterol and TG is the lowest in the Vitebsk region (table 2). Compared with individuals collected in the flowing water of the Vitba river, the content of the indicators

was increased by 1.2, 1.5 and 1.4 times in the Dubrovensky district, and 1,3, 1,3 and 1,2 times in the Ushachsky district, respectively. At *Planorbarius corneus*, there were other patterns of changes in the indicators, as in the Dubrovensky district, the content of total cholesterol decreased by 1,2 times, HDL cholesterol levels by 2.1 times, and the TG increased by 1,7 times, and in Ushachi district, the content of total cholesterol was 1,2 times, TG 1,2 times, HDL cholesterol decreases by 1.7 times compared with the Vitebsk region.

In *Lymnaea stagnalis*, the content of cholesterol, HDL cholesterol and TG is the lowest in the Gomel region (table 2). Compared with individuals collected in Lake Lubenskoye, the content of total cholesterol and thyroid is increased by 1.2 times in the Mozyr district, and by 1,3 and 1,2 times in the Rogachev district, respectively. At Planorbarius corneus, the changes in the indicators had other patterns, as in the Rogachev district the content of total cholesterol increased by 1,2 times, TG by 1,3 times, and HDL cholesterol decreased by 1,3 times, and in the Mozyr district, the content of TG increased by 1,3 times, HDL cholesterol decreases by 1,4 times compared with the Gomel region.

Conclusion. Differences in total cholesterol, high-density lipoprotein cholesterol and triglycerides were found in *Lymnaea stagnalis* and *Planorbarius corneus*, depending on the habitat and type of oxygen transport.

Thus, anthropogenic changes in the indices of carbohydrate and lipid exchanges can serve as monitoring parameters for the ecological well-being of aquatic habitats of pulmonary freshwater mollusks.

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JUNIPERUS STROBILES SEASONAL CHANGES

A. Shimovolos
VSU named after P.M. Masherov, Vitebsk, Belarus

In our days representatives of the *Cupressaceae* Bartl family especially the *Juniperus* genus *Sabina* subgenus are widely used in the green buildings. The biology of these introduced subgenus has not been studied yet. It is known that the strobiles laid in the year preceding the pollination. Usually the strobiles' laying phenological phase is visualized with difficulty. That is why the study of the strobiles initial stages' ontogeny is inseresting and important.

Purpose: to study color and size peculiarities of *Cupressaceae* plants generative organs.

Material and methods: theoretical analysis, comparative and description methods, study and generalization of data. From 27.12.2017 to 20.04.2018 male and female specimens of *Juniperus* were studied on freshly collected, living, unpainted material using a binocular microscope MBS – 10 with a micrometer scale (8x2 magnification). Samples were taken every ten days, from the 2nd and the 3rd orders shoots, triple repeating. The strobiles color was determined by A. Bondarcev color scale [1]: А7 – *Palido-callainus*, Б3 – *Flavo-virens*, Б4 – *Fuscatus*, Б5 – *Flavo-fuscus*, Б7 – *Olivaceo-flavus* , Д2 – *Flavo-aurantiacus*, Д4 – *Flavido-buscatus*, Е7 – *Pomaceus*, Ж2 – *Rufuscens*, Ж4 – *Pallido-tesaceus*, 33 – *Canescens*, И1 – *Sulphureus*, И2 – *Flavido-viridis*, К6 – *Mellinus*, К7 – *Bistraceus*, М6 – *Rubro-argillaceus*, О2 – *Testaceus*, О3 – *Aurantuacus.*

Findings and their discussion. At the end of December 2017 the 3rd decade it was windy, -2 °C. 3 generative buds were found out among 10 male plant prepared buds. The strobiles color was: the 1st: the top – В7, the base – И2; the 2nd: И2; the 3rd : the top - И2, the base - Б5. The predominant color is И2. The strobiles sizes are variated from 1-1. 5 mm in length and 1-1.5 mm in wide.

At the beginning of January 2018 the 1st decade the temperature was +2 °C, thaw, snow melted. 8 buds were prepareted from male plant. 4 strobiles were founded. The strobiles color was: the 1st: the top - А7, the base - И2; the 2nd: the top - Б7, the base-Б7 and М6; the 3rd: the top - Б7, the base - Е7; the 4th: И1 and Б7. The predominant color is В7.

At the end of January 2018 the 3rd decade was thaw, +1 °C, on the eve of the study it was frosty and windy. The strobiles color was: the 1st: the top - Б3, the base - Б7; the 2nd: 33 and Е7 (figure).

Figure. Male (1) and female (2) strobiles Strobiles size: lengt - 1.3 mm and wide - 1 mm. It was frost, -9 °C in the middle of March 2018 the 2nd decade. It was thaw during the day before. It was 1 generative bud among 5 had been prepared. Elite color of it was Б4, at the base – Е7; length – 1.5 mm, wide - 1 mm. In the middle of April 2018 the 3rd decade temperature was + 10 °C. It was cloudy. Only 1 bud was generative among 15. Microsporophylls weren't

situated tightly, pollen was absent. Pollination was probably a week before because of favorable conditions and warmness. 2 neighbouring buds were prepareted. The first top had pointed form with needles primordiums. The second rounded bud contained primordial strobile.

At the beginning of April 2018 the 1st decade was rain +13 °C 12 buds from the female plant were prepareted. Only 4 buds were generative. The strobiles color was: the 1st: the top – Б7, the base – О3; the 2nd: the top – З3, the base: Ж2 and А2; the 3rd: the top – И1, the base – Ж2; the 4th: the top – И1, the base – Д2. Strobiles dimensions were: 1 mm in length and 0.7-0.8 mm in width. Female strobiles were smaller in width than male ones.

At the beginning of April 2018 the 3rd decade the temperature was +17 °C, gradual increase of temperature. 4 generative buds were founded among 10 buds. The strobiles color was: the 1st: the top – И1, the base – К6; the 2nd: the top – Е7, the base – В7; the 3rd bud had an interesting combination from two colors: Ж4 and Д2; the 4th: strobile (figure) also had a mixed coloration: В7 and З3. The size of the strobilies were ranged from 1.2 – 1.3 mm long and 0.7 - 0.8 mm wide.

At the end of April 2018 the 3rd decade the temperature was +13 °C, warm after cold weather. There were 3 generative buds. The strobiles color was: the 1st: the top – К7, the base – З3; the 2nd: the strobile had a very beautiful and unusual mixed color: Б7 and Д4. The 3rd strobile had even more beautiful and fascinating color combination from 3 colors: З3, Ж4 and Д4.

Thus more than 200 buds were prepared. Experimentally was proved that *Juniperus* was a dioecious plant. It was founded that the strobiles color was closed to light green in winter and had a yellow-orange color with temperature increasing. It might be the additional buds heating. It was established that female strobiles were slightly smaller in width than male.

Conclusion. Juniper is a dioecious plant. Female strobiles are smaller in width than male ones. Male strobiles have more diverse charged colors than female. At the top and the base of male buds olive-yellow color is prevail. Apple-green is marked in the 1st decade of January, at the end of the 3rd decade and in the middle of the 2nd decade of March. Olive-yellow and yellow-orange female strobiles color is fixed during the whole period of observation. Both plants' strobiles have olive-yellow, whitish-gray and sulfur-yellow colors. The green part of the spectrum optical range is dominated at the male strobiles base. Orange part of the spectrum belongs to female buds. The colors combination was founded for male strobiles in January, for female – during the whole period of observation. At the end of the 3rd decade of April 3 colors combination for female strobiles was marked. The strobiles color is connected with temperature environment.

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MORPHOLOGICAL FEATURES AND SOME CROP QUALITIES OF SIBERIAN IRIS SEEDS

T. Stanevich
VSU named after P.M. Masherova, Vitebsk, Belarus

The study of the characteristics of the fruiting and sowing qualities of seeds of rare and protected plant species plays an important role in the practical methods of protecting species listed in the Red Book of the Republic of Belarus (introduction, reintroduction).

The purpose of this research is to study the morphological features and some sowing qualities of seeds of a protected species of the Republic of Belarus – Siberian iris *(Iris sibirica* L.).

Material and methods. The material of our study is the seeds of representatives of three natural populations of Siberian iris, which are contained in the introduction nursery of the botanical garden of the Vitebsk State University and representatives of one natural population located in the floodplain Shevinka, Vitebsk district, Vitebsk region. In the future we will call them a sample followed by the number:

Sample 1: taken in the vicinity of the village of Sloboda, Ushachsky district, on the island of Velezhie ozero. Cherstyatskoe and is contained in the botanical garden of the Vitebsk State University;

Sample 2: taken in the vicinity of the village of Kosovshchina in the Ushachsky district on the east coast of the lake Otolovo and contained in the botanical garden of Vitebsk State University;

Sample 3: taken on the south-eastern outskirts of the city of Vitebsk in the micro-district South 7 and contained in the culture in the botanical garden of the Vitebsk State University;

Sample 4: taken on the south-eastern outskirts of Vitebsk in the micro-district South 7 and is found in culture in the botanical garden of the Vitebsk State University;

Sample 5: grows in the vicinity of the village Shevino of the Vitebsk district in the floodplain of the r. Shevinka.

Siberian Iris is protected in the status of the IV category of national environmental value. It is included in the 1st – 3rd editions of the Red Book of the Republic of Belarus. Included in the Red Books of Latvia, Lithuania, Pskov and Bryansk regions of the Russian Federation, Ukraine [1, p. 242 – 243].

Studies were performed in 2017 – 2018. The peculiarities of fruit bearing and sowing qualities of seeds were studied using methodological guidelines for seed breeding of introduced plants [2]. The results are statistically processed using Microsoft Excel.

Findings and their discussion. In this paper, the description was carried out only on the external morphological features. Seed sizes are given in mm.

Length – the distance from the hem up, width – the greatest-neck distance perpendicular to the length. A binocular with a measuring scale was used to determine the linear dimensions. The form is characterized by similarity with geometric or other bodies, based on the ratio of length to width.

Data on the linear sizes of seeds of representatives of different populations of Siberian iris in culture and in nature are presented in Table 1.

Table 1

Linear dimensions and sowing qualities of seeds of Siberian Iris in culture and in nature

Sample	Length, mm	Maximum width, mm	Ratio of length to width, mm	Weight 1000 seeds, g
1	5,46 ± 0,1	3,92 ± 0,07	1,4 ± 0,03	11,66 ± 0,48
2	6,72 ± 0,07	4,48 ± 0,06	1,51 ± 0,02	15,88 ± 0,56
3	5,44 ± 0,08	4,12 ± 0,12	1,34 ± 0,04	17,35 ± 0,46
4	5,37 ± 0,07	3,76 ± 0,07	1,44 ± 0,02	12,75 ± 0,34
5	6,04 ± 0,12	4,07 ± 0,1	1,5 ± 0,04	12,01 ± 0,48

The length of the seed of Siberian iris ranges from 5.37 ± 0.07 mm to 6.72 ± 0.07 mm. Seed width from 3.76 ± 0.07 mm to 4.48 ± 0.06 mm. The longest seed length for sample 2 and 5, the width for samples 2 and 3. The ratio of length to width characterizes the shape of the seed. The smaller the ratio, the more rounded the seeds. More rounded seeds in sample 3.

The mass of 1000 seeds characterizes their size. The fuller the seeds, the better their quality. Full-grown and aligned seeds give friendly shoots, the plants develop evenly in the future. Fuller seeds in sample 2 and 3.

Seed germination of *I. sibirica* was determined in the laboratory and in the field. In laboratory conditions, the seeds were germinated in Petri dishes in a greenhouse. Watched for germination of seeds daily. The established observation period was 45 days, after which the germinated seeds were counted.

In determining the germination of seeds in the field, five samples of each sample, 100 seeds in open ground, were sown in the fall of 2017 in the botanical garden of the Vitebsk State University. The testimony was filmed in June 2018. The results of seed germination of *I. sibirica* in laboratory and field conditions can be seen in table 2. The highest germination rate was shown in sample 5 (natural population). Samples 3 and 4 showed a smaller left germination.

Table 2

Seed germination of *I. sibirica* in laboratory and field conditions

Sample	Laboratory germination,%	Field germination,%
1	$16,4 \pm 1,04$	$55 \pm 5,25$
2	$12,35 \pm 1,14$	$62,12 \pm 6,48$
3	$13,7 \pm 1,85$	$47,34 \pm 4,64$
4	$10,1 \pm 1,35$	$58,4 \pm 3,47$
5	$17 \pm 2,12$	$71 \pm 2,35$

Field germination surpassed laboratory in 2–5 times. This is due to the natural stratification in winter, which took place the seeds of Siberian Iris when sown in the ground in the fall.

Conclusion. Laboratory germination of seeds of Siberian Iris, obtained in culture, was 10.1 – 16.4%, and seeds collected in nature – 17%. The field germination of Siberian iris seeds obtained in culture was 47.34–62.12%, and the seeds collected in nature – 71%. Germination of seeds collected in nature, has a higher performance than the seeds collected in culture in the laboratory and in the field.

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THE IMPACT OF COMPUTER TECHNOLOGY ON THE HEALTH OF STUDENTS

A. Shatalova
VSU named after P.M. Masherov, Vitebsk, Belarus

Currently the most important indicator of the level of scientific development, economic and defense power of the state is information. Today, according to its social significance, the informatization of society is comparable to its industrialization. Informatization provides not only the growth of economic indicators, the development of the national economy, but also reacting new scientific achievements in the basic and applied sciences aimed at the development of production, the creation of new jobs, improving living standards.

From year to year requirements to the high technical culture and computer literacy of people grow. Therefore, in the complex of the most necessary knowledge in addition to historical and cultural include computer literacy. Future specialists should have high professional qualification, be healthy, physically fit, have high working capacity. The health of young people determines the future of the country, the gene pool of the nation, the scientific and economic potential of society. The introduction of new technology in all spheres of life is an inevitable process, personal computers have recently become the main tool in the work. But like any new stage in the development of society, computerization brings new problems with it [1].

According to the world health organization, as well as the results of many studies conducted by scientists from different countries of a number of international centers, there is a certain connection between work on computers and various ailments [2].

The aim is determining the impact of computer technology on the health of students from the faculty of biology.

Material and methods. This research was organized on the basis of the biological faculty from Vitebsk State University named after P.M. Masherov among students of 1 and 4 courses. To identify students' knowledge about impact of the computer on health, we used a questionnaire of 12 questions. In the survey 58 people participated, including females 31 (53%), and males 27 (47%). The age of the respondents was 17–21 years. The survey was conducted twice: the first–at the beginning of Semester (before the implementation of the program "Computer impact on health"), and the second – after the implementation of this program.

Findings and their discussion. According to the results of analysis and interpretation of the data we may notice that on the faculty of biology the time spent at the computer varies significantly depending on the course of study. In the first year, 43% spend about 30 minutes at the computer, 9% – more than 8 hours, that means about 48% of students use the computer from 2 to 6 hours. During the 4th year, only 15% spent about 30 minutes at the computer, 5% – more than 8 hours, the majority of students – 47% spend on the computer from 2 to 4 hours.

The results of the survey show that students from all courses are aware of the harmful effects of computer on the human body. However, the vast majority uses computers every day and don't imagine themselves without modern technology. At the same time, students recognize that they experience various kinds of ailments and changes in the body. Among them special attention is paid to the following ailments in the form of: irritation, insomnia, fatigue, headaches, pain in the eyes, aswell as diseases of the musculoskeletal system, the vascular system, the organs of vision.

According to our research 98.3% of students use social networks. Students of the faculty use social networks for communication, watching videos, posting photos, correspondence, games. The vast majority of students have a profile on

the social network, one in five of them-more than 100 friends, 5% have more than 250 friends in the social network.

The result of a survey of psychological services shows that students, who use social networks, hardly communicate in live, incommunicative, and inside the network they feel themselvesmore comfortable. Getting into groups, they lose reality and gain a virtual environment. 41% of respondents agree with the statement that virtual reality makes a person more vulnerable.

The results of survey show that students from the faculty of biology spend more time at the computer for the purpose of information and entertainment. At the same time, senior students have more self-control when working at the computer.

In addition to the above, during the study we have found that 14.7% of students feel the need to return to the computer to lift their mood and avoid life problems. 17.2% of students neglect their family and social responsibilities due to frequent and long-term use of computers. Passion for computers leads to a loss of interest in learning and the threat of decline in academic performance of every third student.

Conclusion. Thus, based on the survey, we found that despite the increasing trend in the use of information technology in modern life, the question of the impact of the computer will remain ambiguous for a long time. This study revealed the possible risks of diseases when working at the computer and thanks to usage of corrective measures helped to reduce the risk of various diseases among students of the faculty of biology. In the future the use of available materials will make it possible to draw more attention of the public and various stakeholders, especially young people, to this problem.

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SOME METHODS OF NATURAL MONUMENTS PROTECTION IN ICELAND

K. Shumski
Belarusian State University, Minsk, Belarus

The protection of natural monuments in Iceland goes back to 1889 when the Icelandic Institute of Natural History was founded. Since then a lot of work has been done and in some ways their methods are paragons for a lot of countries in the world.

The goal of the work is to point out some Icelandic methods of natural monuments protection that can become suitable for the Republic of Belarus. The problem of natural monuments and environment protection is an actual one in our republic as long as the solution of protection and development conflict. The

scientific merit of the work is presented by the attempt to find some methods of Iceland to adopt in the Republic of Belarus.

Material and methods. The material for the analysis has been collected in open information sources, some scientific works on the theme have been studied, and the findings have been compared with the data about the present state of natural monument protection in the Republic of Belarus.

Findings and their discussion. The protection of the natural monuments in Iceland is based on the well-developed legislative system [5] and the research work and subsequent maintenance of the database in the Icelandic Institute of Natural History [8]. The information on the natural monuments is collected and kept not only for scientific and educational goals but for expected tourists [6].

The main problem of Icelandic natural monuments protection remains as the conflict of protection and development of the preserved areas. The nature in Iceland suffered a lot in different historical periods but the process of new possible natural monuments formation is still continuing in the country [4]. So the work goes in two directions: firstly, maintenance of the existing areas along with solving the protection and development conflict and, secondly, advice on search and further conservation of natural monuments [8] with further education.

It is reported that "many protected areas and popular tourist destinations are now under serious threat of degradation and there is a further risk that the quality of the visitors' experience and enjoyment will diminish" [7]. Also scientists and authorities understand that the tourism in Iceland is rising rapidly and has increased in four times during the XXI century and in 2015 it was about four times the native population [7] that means high cash flows in the Icelandic economy and therefore better financing of future research and protection of natural monuments. Though by 2015 no adequate strategy had been introduced by responsible agencies [4] the work on creation innovative government structures and new legislation to resolve the problem of consumption (from heating by geothermal power to sightseeing) and the environmental demands [7]. For example, new government structure in Vatnajökull National Parkseeking is less centralized and has "more local legitimacy and acceptance by the neighbouring communities and local governments [7]." On getting more responsibilities the local authorities pay more attention to sustainable development of the area, conservation of the nature and environmental-friendly activities. The Icelandic Institute of Natural History acts as a coordinator in this work and, as it has been mentioned above, plays an educational role. Education regards as a crucial aspect in natural monuments protection. Localities should know about their resources and how to protect them: thoroughly protected nature can increase local revenues and, therefore, bring benefits to the whole country.

Conclusion. It is rather difficult to compare the natural resources and the number of tourists in Iceland and in Belarus, but some useful experience can be gained when studying natural monuments protection in Iceland. As the legislative system can be compared to the same in Belarus [1, 2, 3, 5, 8] the key directions should be: education and local responsibility. Educational programmes should be provided to all inhabitants

of localities with some natural monuments. Local responsibility will obviously be possible with increasing the number of competent people.

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ANALYSIS OF STATE OF POPULATIONS PRIMROSE HIGH ON THE TERRITORY OF VITEBSK REGION

V. Stepulenok
VSU named after P.M. Masherova, Vitebsk, Belarus

In order to preserve the biodiversity of rare and protected plant species of the flora of the Republic of Belarus, it is necessary to periodically conduct a survey of the state of the populations of these plants. This will make it possible to plan and adjust environmental protection measures in time.

The purpose of this research is to analyze the state of a rare species of the Republic of Belarus – the primrose of a high species (*Primula elatior* (L.) Hill) in the Vitebsk region.

Material and methods. The material of our study are 2 populations of primrose high in the Vitebsk region. Population I is located on the territory of

the stopping point of Grishany, Vitebsk district, to the left of the Vitebsk-Polotsk railway. Population II is located on the 537th km of the Vitebsk-Polotsk railway, on the left, on the stretch, the Grishany station is located at the Kniazhitsa station, Vitebsk district.

Primrose high is included in the 1st – 3rd editions of the Red Book of the Republic of Belarus. Nowadays, the species is included in the List of Preventive Protection Types of the 4th edition as a rare "borderline" marginal meadow ornamental species that requires attention outside synanthropic habitats. In Poland, is subject to partial protection [1, p. 418].

The studies were performed in 2016 – 2018. Geobotanical studies of populations were performed using the technique described in the multivolume publication "Полевая геоботаника" [2]. Specification of the species composition was carried out according to the "Определитель высших растений Беларуси" [3].

Findings and their discussion. We have compiled a geobotanical description of 2 *P. elatior* coenopopulations on the territory of the Vitebsk district. In the description, the average projective cover, meeting, viability, average height and phenophase of plants at the time of description were determined. Also determined by the abundance in points of occurrence and projective coating. The description of the populations was performed on 05.09.2017. Population I is located on the territory of the stopping point Grishany of the Vitebsk District, to the left of the Vitebsk – Polotsk railway. Data on the description are summarized in table 1. The total projective cover of the ground grass cover was 91.67%. The state of this population of primrose high satisfactory. A set of vegetation for this place of growth is typical.

Table 1

Geobotanical description of *Primula elatior* population at a stopping point in Grishany, Vitebsk region

Plant name	Medium projective floor, %	Occurrence, %	Average height, cm	Phenophase	Vitality, point	Abundance on projective floor and meeting, point
Primrose high – *Primula elatior*	0,65	50	17,93	col.	3	2

The average projective cover of the primrose high was 0.65%, the occurrence rate was 50%, the vitality was 3 points. The abundance of occurrence and projective cover was 2 points. Phenophase at the time of the description – flowering.

Population II is located on the 537th km of the Vitebsk – Polotsk railway, on the left, on the stretch, the Grishany station is located at the Kniazhitsa station in the Vitebsk region. Data on the description are summarized in table 2.

Table 2

Geobotanical description of the II *Primula elatio*r population on the stretch Grishany stopping point – Kniazhitsa station, Vitebsk region

Plant name	Medium projective floor,%	Occurrence,%	Abundance on projective floor and meeting, point	Average height, cm	Phenophase	Vitality, point
Primrose high – *Primula elatior*	30,50	100	6	20,70	col.	4
Cache ovoid – *Listera ovata*	0,1	6	1	23,00	veg.	3

The average projective cover of the primrose high was 30.5%, the occurrence rate was 100%, the vitality was 4 points. The abundance of meeting and projective coverage was 6 points. Phenophase at the moment of description – flowering. The total projective ground cover of the land cover was 89.42%. The state of this population of feathers high satisfactory. Primrose tall in this population grows in a community with a protected plant species, an oviduct (*Listera ovata*).

We have studied some morphometric indicators of primrose bush high in the generative state and the growing density of generative and virginal individuals in the studied natural populations. The data presented in table 3.

Table 3

Morphometric indicators of primrose bush high in the generative state and density of growth of individuals in the studied natural populations

Population	of Developed Leaves on plants, pcs.	The number of color-noses on the plant, pcs.	Number of flowers on the color tonos, pcs	Number of flowers in the plant, pcs.	Number of flowering plants per 1 m^2, pcs.	Number of non-flowering plants per 1 m^2, pcs.
I	7,03 ± 0,4	1,7 ± 0,2	6,9 ± 1,93	9,5 ± 4,4	1,6 ± 0,4	6,7 ± 3,5
II	6,92 ± 0,7	1,0 ± 0,1	7,6 ± 1,08	7,8 ± 1,2	16,6 ± 7,4	34,1 ± 3,1

The number of leaves on the generative bush in the flowering state was 6.9 – 7.03, on one plant 1.0 – 1.7 peduncles, on one peduncle 6.9 – 7.6 flowers, and on

plant 7, 8 – 9.5 flowers. Growth density of generative individuals is 1.6 – 16.6 per m^2, virginal individuals – 6.7 - 34.1 per m^2.

Conclusion. Based on the indices of the occurrence of a primrose high in the studied populations I and II (50 and 100%, respectively) and a high vitality index (4), we can conclude that the populations of primrose are high. The ratio of generative and virginal individuals in both populations shows a good dynamics of their development.

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USE OF INDICATORS OF NITROGEN EXCHANGE OF PULMONARY MOLUSKES FOR MONITORING THE CONDITION OF NATURAL WATERWAYS

G. Tsapko, M. Bartkevich
VSU named after P.M. Masherov, Vitebsk, Belarus

The state of natural ecosystems, including water bodies, is one of the most relevant topics of research. This is due to the need for continuous monitoring of the current environmental situation. The purpose of such research is not only to determine the state of the ecosystem, but also to find the most efficient assessment system with minimal use of resources. In this regard, much attention is paid to the use of living organisms as model test organisms. The most suitable for the analysis of natural reservoirs are pulmonary mollusc coil horny (*Planorbarius corneus*) and the large pond snail (*Lymnaea stagnalis*).

The well-being of the existence of any organisms living in water depends directly on the ecological state of the reservoir. From this it follows that the quality of water will affect all processes of the body, including nitrogen metabolism. Accordingly, studying changes in metabolic rates, one can most effectively track not only changes in the state of the ecosystem, but also predict how these changes will later affect the inhabitants of this system and humans.

The purpose of the research is to study the possibility of using indicators of nitrogen metabolism of pulmonary mollusks to monitor the state of natural water bodies.

Material and methods. The experiment was performed on 216 pulmonary freshwater mollusks of two species: 108 *L. stagnalis* and 108 *P. corneus*. Mollusks

were collected in autumn (September-October) in the reservoirs of four districts of the Vitebsk region (table 1). Each research subgroup contained 9 mollusks.

Table 1 – Places for the selection of mollusks

Shellfish collection area	Collection place	Pond name
Vitebsk district	Vitebsk	r. Vitba
Dubrovensky district	v. Lyady	l. Afanasyevskoe
Ushachsky district	v. Dubrovka	l. Dubrovskoe
Shumilinsky district	a/g Bashni	l. Budovest

Determination of hemolymph indicators was performed by standard biochemical reactions using the reagent kits NTPK Analysis X (total protein, uric acid), Urea-01-Vital (urea). Determination of protein concentration (mg / g of tissue) was performed by the method of Lowry. The content of DNA and RNA (mg / g of tissue) was established according to the method of lober and Rotort [3].

Mathematical processing of the results was carried out using parametric and non-parametric statistics using the statistical software package Microsoft Excel 2010, STATISTICA 12.5.

Findings and their discussion. The content of total protein, nucleic acids in hepatopankeas and the content of total protein, urea, uric acid hemolymph are presented in tables 2, 3.

Table 2 – Total protein content (mg / g), DNA and RNA (mg / g) in hepatopancreas *Planorbarius corneus* and *Lymnaea stagnalis* depending on the habitat ($M \pm m$)

Shellfish collection area (n=9)	Indicator		
	Total protein (mg/g)	DNA (mg/g)	RNA (mg/g)
Planorbarius corneus			
Vitebsk district	256±8,2	1,83±0,10	5,46±0,35
Dubrovensky district	139±8,6[1]	2,00±0,07	6,12±0,15
Ushachsky district	211±9,7	2,94±0,19[1]	7,02±0,42[1]
Shumilinsky district	205±7,5[1]	2,73±0,29[1]	6,79±0,58[1]
Lymnaea stagnalis			
Vitebsk district	323±21,7	2,49±0,03	5,74±0,24
Dubrovensky district	228±7,8[1]	1,43±0,03[1]	6,77±0,25[1]
Ushachsky district	169±9,2[1]	1,93±0,03[1]	7,28±0,44[1]
Shumilinsky district	203±4,3[1]	2,44±0,08	7,46±0,28[1]

Note – [1]p <0.05 compared with mollusks from the Vitba river, Vitebsk district.

In *P. corneus*, in comparison with individuals from the Vitebsk region, the content of DNA and RNA in the Ushach region is increased by 1,6 and 1,3 times, respectively, and in Shumilinsky by 1,5 and 1,2 times, respectively. In *L.*

stagnalis, an increase in the concentration of RNA was observed with a decrease in the DNA content; in the Ushachi region, the DNA decreases 1,3 times, RNA increases 1,3 times; in the Dubrovno region, DNA is reduced by 1,7 times, RNA is increased by 1,2 times compared with the Vitebsk region.

Table 3 – Indicators of protein metabolism in the hemolymph of *Planorbarius corneus* and *Lymnaea stagnalis*, depending on the habitat ($M \pm m$)

Shellfish collection area (n=9)	Indicator		
	Total protein (mg/l)	Urea (mmol/l)	Uric acid (mkmol/l)
Planorbarius corneus			
Vitebsk district	33,31±0,46	6,02±0,06	92,14±2,02
Dubrovensky district	31,24±0,65	6,34±0,06	82,46±2,16[1]
Ushachsky district	35,14±0,60	6,40±0,11	96,36±2,36
Shumilinsky district	36,35±1,62	6,43±0,10	89,06±2,00
Lymnaea stagnalis			
Vitebsk district	15,87±0,25	6,05±0,03	25,46±0,64
Dubrovensky district	14,14±0,17	6,55±0,05[1]	35,31±0,49[1]
Ushachsky district	14,35±0,19	6,45±0,11[1]	28,75±0,57
Shumilinsky district	14,93±0,24	6,65±0,18[1]	30,36±0,76[1]

Note - [1]p <0,05 compared with mollusks from the Vitba river, Vitebsk district

In P. corneus, no statistically significant differences in the content of total protein, urea, and uric acid were observed (table 3). In *L. stagnalis*, the concentration of uric acid in Dubrovno increases by 1.4 times, and by 1.2 times in Shumilino regions compared to the Vitebsk region. The urea concentration of urea in the hemolymph depends on the activity of the mollusks and their diet. Shellfish feed on sedimentary detritus, which is a small organic particles consisting of residues, decomposed animals and plants.

Conclusion. Established significant differences in the content of total protein, nucleic acids in hepatopankeas and the content of total protein, urea, uric acid hemolymph in *Lymnaea stagnalis* and *Planorbarius corneus*. The reason for these differences is the varying degree of anthropogenic load and the ecological state of water bodies. From this it follows that the exchange rates of freshwater pulmonary mollusks, including nitrogen exchange, can be used to monitor the state of natural aquatic ecosystems.

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DOTHISTROMOSIS (*DOTHISTROMA SEPTOSPORUM* (Dorog.) Morelet) OF *PINUS SYLVRSTRIS* L. IN NORTHERN PART OF BELARUS

V. Vasilevich
VSU named after P.M. Masherov, Vitebsk, Belarus

Dothistroma septosporum (Dorog.) Morelet is pathogenic fungal organism – particularly damaging for plantation forestry. Infection dothistromosis spread out in southern hemisphere countries [1]. It is known that dothistromosis is widespread in Baltic region.

Characteristic signs of infection are dark-colored conidiomas form, surrounded by a characteristic brick-red band, which is reflected in the name of the disease [2].

Technique identification of *Dothistroma septosporum* has been developed [3]. Infection can be revealed with molecular methods of investigations.

Purpose of the study: to reveal of *Dothistroma septosporum* in the territory of the northern part of Belarus.

It was found that the pathogenic organism widespread in northern part of Belarus. The data of distribution infection in Belarus are shown first time.

Work performed under the direction of Paul Kolmakov.

Material and methods. Material for research was collected by the route method. Route methods are mainly used to determine the presence of objects of their diversity and occurrence in the studied area. The main techniques here are: direct observation, state assessment, measurement, observation of the phonological state of organisms.

In the process of collecting material, forming a label on which are written: date of collection, collection coordinates, air temperature and daily temperature change.

After collecting the material, you can proceed to the laboratory method of research, which consisted in the selection of infected pine needles, which formed conidia. After selection, you can proceed to the preparation of the slide mount. During the preparation of the slide mount, formed conidia should be opened with a dissecting needle and a part of the conidiophore should be placed on a glass slide. Next, you should place the slide motto the microscopeand begin the searching for specific elongated conidia.

Findings and their discussion. It was 3 findings of dothistromosisduring the research was (red band needle blight) on pine trees in north and north-east of Belarus:

1. Vitebsk region, Vitebsk district, Boroniky village (55°14'92" N, 30°18'98" E), *Pinus sylvestris* L., h = 163 m, t = 2°C, D/t = 2-6°C, 30.10.2018;

2. Vitebsk region, Glubokoe district, 50 m north of lake Beloe (55°26'96" N, 27°69'46" E), *Pinus sylvestris* L. planting, h = 155 m; t = 8°C, D/t = 2-10°C, 27.10.2018;

3. Vitebsk region, Beshenkovichi district, Luchki village (55°08'24" N, 29°44'50" E), *Pinus sylvestris* L. t = 6°C, 28.10.2018.

The result of the experiment is shown in Fig. 1, 2.

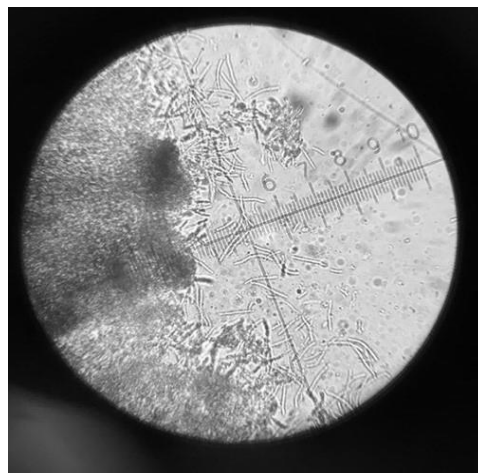Figure 1 – Young tree branches of *Pinus sylvestris* L. infected by Dothistroma septosporum (Dorog.) Morelet

Figure 2 – Conidia of Dothistroma septosporum (Dorog.) Morelet

Conclusion. It was found that the dostistromosis is presented in the territory of the northern part of Belarus.

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ASSESSMENT OF THE CONTENTS OF RESTORED GLUTATHIONE IN THE HEPATOPANCRAS OF THE PULMONARY FRESHWATER MOLUSKES OF THE GOMEL REGION

A. Volodko, V. Ostapko
VSU named after P.M. Masherov, Vitebsk, Belarus

Under the influence of adverse factors in the cell, an excessive amount of reactive oxygen forms is formed, which have a modifying effect on the

macromolecules: DNA, lipids, proteins. Neutralization of reactive oxygen species provides the antioxidant system of the body, which converts reactive oxygen forms into cell-safe forms [1].

Lymnaea stagnalis and *Planorbarius corneus* are two widely distributed types of pulmonary freshwater mollusks living in rivers and lakes of the Republic of Belarus. The high density of natural populations, lifestyle features (relatively low mobility, food mainly sedimentary detritus and periphyton) and ease of collecting individuals allow the use of gastropods in the practice of both passive and active biomonitoring [2].

The goal is to compare the content of reduced glutathione in the tissues of freshwater mollusks living in freshwater bodies, taking into account the season of the year, the type of oxygen transport and the habitat.

Material and methods. The experiment was performed on 162 pulmonary freshwater mollusks of two types: 81 individuals of *Lymnaea stagnalis* (common pond snail) and 81 individuals of *Planorbarius corneus* (horn coil). Mollusks were collected in the fall (September-October) and spring (April-May) in the reservoirs of three districts of the Gomel region manually (table 1). Each research subgroup contained 9 mollusks.

Table 1 – Places for the selection of mollusks

Shellfish collection area	Collection place	Pond name
Gomel district	Gomel	l. Lubenskoe
Mozyr district	v. Krasnaya Gorka	r. Pripyat
Rogachev district	Rogachev	r. Drut

The amount of reduced glutathione was determined by the reaction of interaction of GSH with DTNBK (5,5'-dithio-bis-2-nitrobenzoic acid) with the formation of the yellow-colored anion of 2-nitro-5-thiobenzoate [3].

Mathematical processing of the obtained results was carried out using parametric and non-parametric statistics using the statistical software package Microsoft Excel 2010, STATISTICA 6.0.

Findings and their discussion. The state of the environment has a huge impact on the growth, development and livelihoods of any organism. Especially the environment affects aquatic organisms, since water accumulates various substances, both of natural and anthropogenic origin. In terms of the metabolism of many organisms, it is possible to track the state of the environment in one place or another, to predict anthropogenic effects, the role of biotic and abiotic factors.

According to the study, it was found that the indicators change not only under the influence of the environment, but also cyclically in time depending on the season of the year. Such a distribution of the values of the studied indicators seems to be due to the fact that the spring period is associated with a sharp increase in temperature daytime and lower at night (instability of temperature

conditions), lack of food supply at the beginning of the season, exit from anabiosis of aquatic organisms.

Table 2 – Content of reduced glutathione (µmol / g) in hepatopancreas *Planoporbarius corneus* ($M \pm m$)

Shellfish collection area	Season of the year	
	Spring (n = 9)	Autumn (n = 9)
Gomel district	2,21±0,05[1]	1,45±0,07
Mozyr district	2,87±0,05[1]	1,89±0,96
Rogachev district	1,77±0,06[1]	1,86±0,05

Note – [1]p <0,05 compared with the autumn collection period of mollusks

Compared with the spring collection period in the hepatopancreas of Planorbarius corneus, the content of reduced glutathione in the Gomel and Mozyr regions was reduced by 1.5 times in the autumn period (table 2).

Table 3 – Content of reduced glutathione (µmol / g) in hepatopancreas *Lymnaea stagnalis* ($M \pm m$)

Shellfish collection area	Season of the year	
	Spring (n = 9)	Autumn (n = 9)
Gomel district	1,84±0,04[1]	1,35±0,02
Mozyr district	2,80±0,05[1]	1,65±0,02
Rogachev district	1,77±0,03[1]	1,37±0,04

Note – [1]p <0,05 compared with the autumn collection period of mollusks

Compared with the spring collection period in hepatopancreas Lymnaea stagnalis, the content of reduced glutathione was reduced by 1.3 times in the autumn in the Rogachev district 1.4 times in the Gomel region, 1.7 times in the Mozyr region (table 3).

There were no statistically significant differences in the content of reduced glutathione in mollusks depending on the type of oxygen transport in all the studied areas of the Gomel region.

It is established that the values of indicators of non-enzymatic antioxidant systems vary depending on the season of the year. As a rule, these changes are as follows: the highest values are recorded in the spring period, the smallest - in the autumn period of the collection of mollusks. This distribution of the values of the studied parameters, apparently, is due to the fact that the spring period is associated with a sharp rise in temperature during the daytime and lower during the night (instability of the temperature regime), insufficient food supply at the beginning of the season, and the release of anabiosis of hydrobionts. In comparison, the autumn period is distinguished by a sufficient food supply, a more stable temperature regime, which is reflected in the metabolism and as a result of the reduced level of stress in animals.

Analyzing the data on the content of reduced glutathione, it was noted that they have similar changes in all the studied areas of the collection of mollusks of the Gomel region: the highest value in the spring period, and the smallest value in the autumn period, which indicates the dependence of the indicators on the season. Based on the results obtained in determining the content of this indicator, it can be concluded that the Gomel region is most susceptible to anthropogenic load, including the effect of increased radioactive background. All this leads to the activation of the chain of non-enzymatic AOC and is confirmed by the reduced content of reduced glutathione, aimed at combating the processes of lipid peroxidation, in mollusks from the Gomel region. Also, these results indicate that the antioxidant system of mollusks of the Gomel region does not cope with the load on the body of hydrobionts from the side of seasonal changes, anthropogenic load, as well as radiation background.

Conclusion. Thus, certain seasonal changes in the dynamics of indicators associated with free radical oxidation can serve as monitoring parameters for the ecological well-being of aquatic habitats of freshwater lung mollusks, since they ultimately correlate with the fundamental indicators of the cellular composition of hydrobiont tissues — the content of nucleic acids.

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HISTORICAL DINAMICS AND SPIRITUAL CULTURE OF THE SOCIETY: REGIONAL AND GLOBAL CONTEXT

FORMATION OF THE NORTH-EASTERN ADMINISTRATIVE BORDER OF THE BSSR IN 1924

A. Baranouski
Institute of History of the National Academy of Sciences of Belarus, Minsk, Belarus

Formation of territorial boundaries is a complex and contradictory historical process, since the formation and change of borders are connected with the internal and external policies of states. It was rather difficult to form an administrative border between the BSSR and the RSFSR in the Vitebsk-Pskov borderland.

The relevance of the research lies in the fact that for the first time a study will be made of the formation of an administrative border between Russia and Belarus at the local level – the Vitebsk-Pskov sector.

The aim of the research is to form the north-eastern administrative border of the BSSR in 1924.

Material and methods. In the course of the research, material from the National Archives of the Republic of Belarus, State Archive of Vitebsk Region, State Archive of Psko Region and Zonal State Archives in Polotsk was used. The research methods are historical-typological and historical-systemic.

Findings and their discussion. In March 1924, the part of the Vitebsk region was returned to the BSSR. Velizhsky, Nevelsky and Sebezhsky districts of the Vitebsk region were decided to leave the RSFSR and join the Pskov region. In this regard, the question of determining the administrative boundary between the BSSR and the RSFSR arose in the Vitebsk-Pskov sector.

The Belarusian-Pskov conciliation commission was responsible for determining the administrative border between the BSSR and the RSFSR in the Vitebsk-Pskov sector. On April 5, the fourth meeting of the Conciliation Commission was held. On which the issue of the formation of the administrative boundary was resolved. For Velizh district, the administrative border was determined by the administrative division map of the Vitebsk region in 1920. All the volosts of the district were transferred to the Pskov side, with the exception of those that constituted Surazh district, attached to the BSSR.

The administrative border for Nevelsky district was determined by the same map, with the townships of Gorodok district, which were liquidated in 1923: Gorkovskaya, Rudnyanskaya, Starinskaya, Holomerskaya and Obolskaya, joined the BSSR. As for the Dubokrayskaya and Staykovskaya volosts, they remained the part of Nevelsky district.

In determining the administrative boundary for Sebezhsky district, disputes arose that were not finally resolved. The Belarusian representatives did not agree with the decision to leave Osveyskoy parish and Yuhovichskiy district council of Leninskoy parish in the district, on which the Pskov side insisted. In connection with the disputes about the border for Sebezhsky district, this issue was referred to the decisions of the arbitration commission in Moscow [1].

On April 16, 1924, the Vitebsk–Nevelsky district conciliation commission determined the administrative boundary between the Nevelsky district of the RSFSR and the Vitebsk district of the BSSR. The demarcation line in the Nevelsky area ran along the former Dubokray volost of the Gorodok district, namely from the west from the border of the Volodarsky volost of the Nevelsky district near the village of Tarantova and further east between the villages: Sitki–Malaya Budnitsa, Plehanyi–Kononova, and the village of Plehanyi in the area called Miheevka departed to the Nevelsky district. The boundary ran between villages Voblyi-Loskatuhina, Kozadoeva-Hoteshina, Filimonova-Dubokray, Zhukova-Slepneva, more strictly east border Velizh county, between the villages Voschilyi (Dorohi) and Lugovskie from Vitebsk county and villages Hameshki and Skomorohi by Nevelsky county [2].

Vitebsk–Velizh district conciliation commission April 20, 1924 determined the border between the BSSR and the RSFSR in the Velizh–Vitebsk section. It started from the border of the adjacent Nevelsky county, namely the villages Klyazhi, Alshutyi, Pozharyi, Smolina, Lyushkova, Rogova, Styikina, Pahomavichyi, Pustosh, Sorokina, Klinkova, Gribani, Myishiy Bor, Avsyuhova, Asmalovichyi, Kulakova, Shershni, Hoteeva, Karabuhi, Melyini and from the BSSR village Bozaryi, Gazba, Shmani, Bochkari, Blichina, Astapkovichi, Zaykova, Polova, Rudakova, Zagortsyi, Novoe-Tyintsevo, Lyoshkova, Mamoshki, Borki, Alekseeva, Virok, Ploskash. To straighten the boundaries between the Vitebsk district of the BSSR and Velizhsky district of the RSFSR, it was decided to transfer the village of Ukraische, Tratsevskogo and Kozlova farms to Velizhsky district [3].

On April 26, 1924, an arbitration was held in Moscow on a dispute over the border between the BSSR and the RSFSR in the area of Osveyskoy lake. After a detailed study of this issue, the arbitrator, A. Beloborodov, agreed to transfer the Osveyskoy and Yuhovichskoy volosts to the Polotsk district of the BSSR [4].

On May 5, 1924, the Polotsk–Sebezhsky district conciliation commission determined the administrative border between the Sebezhsky district of the RSFSR and the Polotsk district of the BSSR. It started from the border with Latvia, then went near the villages Makeyanki, Ganzhyinova, Baydikova, Uzbore, Goryi, Zagnoi, Yuzefovo, Barnuha, Tserkove, Eremeevo, Tomsino, Chertezh, Myilinka, Prudok of Sebezhsky district, and from the BSSR near the villages of Stalmaki, Vasilyovschina, Pogulyanka, Kotrinova, Prudische, Denisenko folwark, Volyasyi, Rudnya, Volneyki, Bereznyaki, Stayki, Slavnaya,

Gorelki, Tesyi, Orehov [5]. On this the formation of the north-eastern border of the BSSR was completed.

Conclusion. Thus, the administrative border between the BSSR and the RSFSR in the Vitebsk-Pskov area passed through the territory of the Velizh, Nevel and Sebezh districts on the Pskov side and the Vitebsk and Polotsk districts on the Belarusian side.

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CYCLIC RECURRENCE OF HISTORY: MORAL DECLINE OF THE ROMAN EMPIRE AND MODERNITY

A. Ignatyeva
Yanka Kupala State University of Grodno, Grodno, Belarus

History moves in a spiral. Practically all the events have a property to occur over and over, but each time they occur in different ways. Each time they come in a new spiral turn. Despite this fact their substance is the same. In this research we observe the cyclic recurrence of history using the examples of moral decay of the Roman Empire and cultural backwardness of the modernity. Countries with specific religion fabrics are carried out of the issue.

The problem of moral decline is the problem of current interest of the present. By drawing analogies between the decline of the Roman Empire and current situation it's quite possible to predict the future development of the modern world.

Our target is to examine a sociocultural component of the Roman Empire and the modernity.

Material and methods. In this article we use some historical and social works [1, 2] and the official statistics [3]. The method which we used is comparison between the historical processes of the Roman Empire and the processes of the modern world.

Findings and their discussion. According to the works of Edward Gibbon the fall of the Roman Empire can be divided into 3 stages:

1) The era of Antonines – a period of the highest level of the development of the Roman Empire and at the same time – the beginning of moral decline. Eventually, the country was conquered by the barbarian tribes.

2) Justinian's reign. This period is marked by a temporary revival of the Eastern Empire. The result is a rise of Charlemagne.

3) The revival of the Western Empire; later it was conquered by Turks (1453).

To begin with, it's necessary to stress out that the Roman Empire had already formed an image of a powerful country with a formidable army by the time of Antonines' era. In this case, the aristocracy didn't feel any need in material goods: everything came from the conquered lands, and what's more, there was a strong economic mainstay. Even before the start of the decline the army service was a valorous and prestigious action; the concept of honor and high moral values was on the first place. Science, legislation, art, social principles – everything was at a high level but in constant development, at the same time, was filled up with an Athenians' wisdom. The form of government was absolute monarchy, however, the law was rather fair from the point of view of that times. Spiritual culture is thought to be at a high level too.

Education and self-development were encouraged practically in each part of the country; the standard of living was constantly growing: considerable degree of comfort in houses was observed even in provincial towns.

However, since Antonines' reign hard slave labour had made a notorious contribution to the culture. Gladiator fights, endless gluttony and huge waste of money for circuses – that obviously was the beginning of moral collapse of the Roman Empire.

Military was getting weaker and weaker; mostly barbarians served in the armed forces that resulted in the establishing of military despotism. There was no more motivation to serve in the army. All the social principles of honor and just moral values were changing.

Roman aristocracy as well as ordinary people waited for only "bread and circuses". For instance, Caligula had made no secret of his mistresses and he was also accused of incest and homosexual connections; what's more, historians point out that many rich people spent a fortune for the food. They ate as much as possible and then caused vomiting to continue eating.

Of course, lots of this facts can be explained as the specific behavioral features of that times. But still it's possible to observe a total moral corruption of the inner system, mostly caused by the satiety of material benefits. The family institution also depreciated. The network of brothels was expanded.

As a result it became impossible to organize disciplined military; the lack of moral values, the loss of authorities, constant pursuit of power resulted in the fall of the Roman Empire.

Speaking about nowadays, we can observe similar processes: the development of technologies could replace a human factor in manufacturing, that's why human labour is directed towards other spheres. On the one hand, technology influences modern society in a good way, helps in the raising of living standards; on the other hand, it causes loss of moral values and decline of cultural part as they don't matter anything for the younger generation. The cult

that is created by LGBT-relationships and by other directions, that early struggled for the minority rights, now has nothing but a political connotation, which gives food for the protests and as a result undermines family institution.

There is also a decline of literature culture. By studying modern popular literature, it's possible to say that most of the content is uncensored which gives more freedom for the author but at the same time destruct the spiritual and sublime meaning of art.

Education is mostly of the practical orientation type; in this order students don't broaden their outlook and develop only required professional skills.

The culture of communication has also undergone some specific changes; value proposition in general has changed beyond recognition. Our generation is not interested in anything except satisfaction of temporary needs that comes from the satiety of material benefits.

I can't but mention one more phenomenon: some people advocate ecologically friendly movements but most of their actions are aimed at the promotion and marketing of a particular product or, indeed, they have a political context.

Speaking about the problem of the moral decline in the modernity, it's worth mentioning that against this process we can observe a constantly growing disparity among the living standards of world countries. All the above-mentioned criterion relate only to the technically advanced countries.

Conclusion. History consists of some iterative processes which move in a spiral of a mankind. The modern world is now at its height as well as the Roman Empire was once. But the main distinguishing feature is a special mark of the 21st century – advanced technology. That's why modern world won't stop in its development as the Roman Empire did.

Earlier this process of moral decline appeared in only highly developed countries (the Roman Empire, Rzecz Pospolita), but nowadays there is a global tendency because of the globalization and cosmopolitanism. Probably, the concept of conservative features and of traditional moral values will be fully changed. On the one hand, it'll have a positive impact on human civilization as a whole, on the other hand such aspects as culture, art and family in their traditional perception will disappear.

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HISTORY OF CREATION OF THE BOOK FUND OF THE SCIENTIFIC LIBRARY OF VITEBSK STATE UNIVERSITY NAMED AFTER P.M. MASHEROV

M. Trofimova
VSU named after P.M. Masherov, Vitebsk, Belarus

Higher education institution is a complex structure with its hierarchy, it is in constant development, the features of this type of institution is its universality, thoroughness and very high quality of education that it gives to its students.

The role of the library in the formation of high – quality higher education is fundamental, this structural unit provides the literature with the educational process and scientific research. One of the activities of any scientific library of higher education institution is information and bibliographic support of the learning process. With the help of book collections and library services, the library carries out almost all the processes of higher education: management, organization of independent work of students, teaching, research on various problems of science.

From all the above we can conclude that the most important task of the scientific library is the competent formation of its Fund.

The composition of the book Fund is an important direction for the implementation of the intellectual potential of higher education.

Purpose – to trace the features and the dynamics of the creation of the book fund of the scientific library of the Vitebsk state University named after P. M. Masherov.

Material and methods. The material of the research is the book fund of the scientific library of Vitebsk state University named after p. M. Masherov. When writing the article the following methods were used: analysis, synthesis, description.

Findings and their discussion. The fund of the scientific library of Vitebsk state University named after p. M. Masherov consists of educational and scientific publications. Formation of the Fund began with the beginning of the existence of the library. The library was founded together with the opening of the University in 1910 [2, p. 103].

During the three years of its existence, 100 users of the library had about 2000 thousand copies of educational literature, another thousand were books on the history of the Church and Christianity, theology and religious and moral teachings, as well as fiction.

In total, the library Fund consisted of about 3000 volumes of 1500 titles. With the reform of the Institute in 1918 in the "higher education institution called "Vitebsk pedagogical Institute"[3, p. 154], and in 1919 in the Institute of public education, it was necessary to significantly increase the number of the library Fund. For this purpose, library funds of former private gymnasiums were used, as well as several trips to Moscow and Leningrad for the purchase of documents.

After the reorganization in 1923, the library has significantly updated and increased its collections. To the Fund, which numbered, by the time 10,000 copies, added funds before the existing Vitebsk practical mechanical construction Institute (8418 copies.) and the former Vitebsk branch of the Moscow archaeological Institute (26000), which together amounted to 44418 volumes. The Fund was a lot of rare books from the collection of the Polotsk Jesuit Academy, closed in 1822.

In the 30 years of the 20th century significantly improved the library. The book Fund is constantly updated and by 1941 it has 72000 volumes. After the beginning of the great Patriotic war Vitebsk was occupied, therefore it was not possible to evacuate the library Fund, part of it was looted and destroyed. In the postwar period, the library of the University had almost no book Fund, but by the end of 1945 the book Fund amounted to 10,000 copies, with the help of many University libraries and the work of librarians themselves.

From year to year the library Fund increased and by 1950 its volume reached 21554 copies. In 1955, the library's collection increased to 50,000 copies. To 60 year the library exceeded the prewar level and had 103062 copies of books and magazines [1, p. 15].

By 1970, the Fund had grown to 196,000 copies. Already in 1980 the number of the Fund was 334618 copies. With the active participation of the management and staff of the library, the Fund of literature was actively replenished and by 2000 has already 473543 copies of 108629 titles.

Currently, the scientific library of Vitebsk state University named after p. M. Masherov is an information and cultural center of the University. The funds have more than 600,000 sources of information on various media [4, p. 14]. The University library is a methodical center of University libraries.

As a result of the study, the dynamics of the development of the Fund of the scientific library of Vitebsk state University named after p. M. Masherov was described. The article describes the milestones in the history of the library's document collections and their impact on the higher education institution in which the library is located.

Conclusion. As a result of the study, it can be concluded that the Fund of the scientific library of Vitebsk state University is a dynamically developing system that has its own history and is important for the development of the University and affects the quality of education and the prestige of the University.

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THE LAST KING OF POLAND AND GRAND DUKE OF LITHUANIA STANISLAV AUGUST PONIATOWSKI AND HIS MONARCHICAL DUTIES AT THE GRODNO SEIMS IN 1784 AND 1793

N. Vasilyuk
Grodno state University, Grodno, Belarus

Some believe, that Stanislaw August Poniatowski did not manarchy Affairs, only spent time at balls with friends and lovers. But this opinion does not quite correspond to reality. Look at the political everyday life of the last king of Poland and Grand Duke of Lithuania during the Grodno meetings 1784 and 1793 y. In the work were used the diaries of one of the members of the Sejm of 1793 [3], materials of the regional conference of students and graduate students of Grodno [4], the study of the Russian historian N. F. De Pula [5], who described the daily life of Poniatowski, and Dz. Lavascape to assess the Grodno Sejm of 1793. [6].

The purpose of the research is to discern the daily life of Stanislav August Poniatowski in Grodno during the Sejm and on this basis to determine its impact on the course of important political, crucial for the Commonwealth events.

Material and methods. To achieve this goal, General scientific and special historical research methods were used. The method of analysis was used to investigate the development of the topic in domestic and foreign historical science. The method of generalization helped to create a General idea of Stanislav August Ponyatovsky's everyday life and its influence on the course of important historical events. By comparating method to compare the daily life of the past with modern processes. The method of induction and deduction helped to obtain reasonable results of the study. The historical-typological method contributed to the development of a General typology of sources and tipologia analysis talebani historiography on the subject. Historical comparative method allowed to estimate and compare the political ability Poniatowski as king of Poland and Grand Duke of Lithuania. Method praparat (personal history) were used in the study of the biographies of stanisław August, as well as people that surrounded him.

Findings and their discussion. In 1784 it was decided to hold the Seims in Grodno. That was demanded by the Lithuanian province, and also by the king who wished that the Lithuanian magnates agreed to pay his personal debts from the state Treasury.

On October 4, the Seim began, as always, a prayer service in the Jesuit Church. The main question was about the Royal debt. It was successfully solved, the throne and the Royal family were saved from a public scandal caused by bankruptcy. XXII according to the resolution of the Sejm to pay debts remains of the Royal made for the postponement by 10 years Slota 700 thousand per year to be paid skarbowy commissions of both Nations with the treasure of the king [7, p. 29].

Of course, these witnesses characterize the king from a not very good side, but show him as a politician: Stanislav Augustus understood that the truth of the

case can not be solved, so he moved to extraordinary steps –organized in Belovezhskaya Pushcha hunting, thanks to which the Lithuanian magnates and agreed to the terms Ponyatovsky. He couldn't do anything else.

XVII the resolution of the Sejm concerned a former great descendant of mayor on, Grodno headman Anthony tizengauz. The atmosphere of decision-making was cold. Attack more personal enemies descendant of mayor Michael Zaleski on the instructions of a Permanent happy, Brest Ambassador Matosevic. King defended his friend, but Grodno Sejm in 1784 recognized Anthony tizengauz guilty of causing harm to the Royal Treasury, but withdrew financial debt and sequestration and filed Tizengauz retire descendant of mayor [7, p. 32].

You can notice an interesting fact: every politician, every king is a person who is friends, loves, loves. So Ponyatovsky was friendly with Tyzengauz and did everything possible to save his friend, but, unfortunately, he could not. Politics was stronger for the personal.

Francis Xavier Hans, major-General of troops on, later recalled that the Seimas "hinduness rare and commendable rate of decisions of adjudications memorable" [7, p. 35].

Assessing the work of the Seimas, Stanislav August Ponyatovsky in his memoirs wrote:"the Grodno Seimas was perhaps the last manifestation of genuine national greatness in Europe without false tinsel i putting dust in the eyes." The other was the opinion of the associate of Kosciusko Juliana-URSA Nemtseva. In his memoirs, he noted that the diet was pretty shameful spectacle, the Sejm absolute bassella, including on the part of the king, because the ambassadors of the States, which divided the Polish-Lithuanian Commonwealth, did not allow to solve important issues. Everything that happened there, happened in the dark picture is sisea restrictions on the political awareness, the complete impoverishment of belongings and administrative collapse" [7, p. 33].

And after 9 years, I came seventeen hundred and ninety-third year, the year of last samavia meeting of the Commonwealth and of the second section of the state.

Stanislav August can be accused of weakness of character, but that he was poorly versed in political Affairs – in any case. Having not yet arrived in Grodno, the king knew what would happen there, so he refused to go to Grodno, wrote letters of complaint to Catherine II, referring to his lack of money, debts, poor health. Finally, he decided to Express his fear that he would be forced to sign a new section. Several times he began to cry and begged the Ambassador to stay in Warsaw for a while. Russian Ambassador same, I. Seavers, trying to refute all the arguments of the head of the Commonwealth, convinced that about any violence is out of the question.

First, Poniatowski stayed on the diet adequately. He tried with all his strength to prevent the division of the state, to the last defended the independence of his people. King began his speech at the diet of statements that will not yield an inch of their native land. I sincerely wanted to save the country, saying the following words: "Let them shoot...Let SBR sent, but the state is not

sddm" [6, p. 54], and then with the Royal throne flew tactical statements about the renunciation of the crown. Then came concessions ... gradual-from article to article. Each day of the diet was discouraging public opinion and smansa sympathy for the king. V. I. Vodovoza, Russian Methodist, writes: "But he had to endure a lot of humiliation. He was required to he denounced as traitors to their former friends. The king cried, almost to the point of insanity. The unfortunate king did not know whom to keep, and leaned to one, then to another party" [2, c. 47].

By his visit to the Seimas in Grodno and his position, the monarch actually committed political suicide [4, c. 25].

In his speech, the king blamed all the misfortunes on forcing almost 150 thousand soldiers located in the region by force, who"everyone stops resistance". The resistance of ratification, he said, would entail the ruin of the edges [3, no. 3, pp. 45–48].

During the last samawah regulations Stanislaw August had been fully in agreement with the enemy, dumasi only one or will pay a reward for his obedience to the state, razobraly in parts of his country, his debts and provide him the opportunity to quietly live the rest of years [1, p. 10]. Apparently, he maintained good relations with Ya Swaram – Russian Ambassador. Acts. Ilovaisky, Russian historian and publicist of the XIX century, wrote that Sivers and Ponyatovsky during the contact stipulated not only state Affairs, describing the name of Sivers in 1793 and bring the proof of the following fact: "the King by his Secretary sent a birthday (Seavers) gifts for his daughters, that braclet and necklace" [6, p. 65].

Very bad the characterization given Boskamp, a close adviser to the Russian Ambassador Sievers on Polish Affairs, Stanisław August. While recognizing his intelligence, courtesy, he noted the extreme weakness of the character and beliefs of the king, which made him a victim of the influence of a variety of political factions. Summing up his analysis, Baskamp recommended Sivers to rely on the king, "hiding, however, from him our interest in him. Fortunately, we have a serious means of pressure on him: the threat to leave him to the massacre of his many enemies or to transfer the king's income to his numerous creditors who have already appealed to the Empress" [8].

M.-M. Poulet, a Russian historian of the XIX century, writes about the king: "he appealed to Sivers, who was present in the hall, with a request to give his court a wish to return the lands taken to Poland. Given the undesirable consequences that Stanislav August's speech could have, seavers immediately took tough measures to defeat the king's tenacity. Bankers-creditors Stanislav August it was announced that Russia does not intend to begin repayment of the king's debts before the signing of a separate agreement and the end of the Sejm [5, c. 29].

Doesn't that sound like blackmail? Undoubtedly, the behavior of Stanislav Augustus should be considered, taking into account external circumstances.

The king justified his position and actions in the most important events since his accession to the throne, assured that he was not involved in any disasters of his country. This diet it is not considered fair, for it was fitting to

yield to the onslaught of the majority and to begin negotiations with the Prussian king [3, no. 2, pp. 33–34].

After signing the treatise on the division of the country Stanislav Augustus, calling the Russian Empress Catherine the Second sister and expressing joy for what happened, sent her a message: "your Majesty, my sister! What I've longed for has finally come to pass. You wanted to become an eternal ally of Poland. If only the Sky had wanted this to happen six years earlier! I put all my zeal into this cause because I acted on the belief that I was doing good to my country and that from now on nothing could cloud my intentions and personal feelings. But I ask your Majesty to deign to give a resolute order in order to stop the measures that make the nobility suffer, the inhabitants of the cities and peasants of my country, whose poverty, increasing as a result of a very poor harvest this year, has reached the point that their diseases and deaths are transmitted to the troops of your Majesty" [8].

In rescript Siwers of October 18, Catherine, Russian Empress, announced that he has decided to withdraw a significant part of the Russian troops from Poland. However, she instructed the Ambassador "to summon the king in a gentle way, that it is not enough to sign treaties, they must be accurately and punctually fulfilled, following their true meaning and spirit" [8].

Conclusion. Thus, the behavior of Ponyatovsky cast a real shadow on his reign, but a significant role in these phenomena played a weak character of the king and unbearable conditions in which he was put. As a politician, Stanislav Augustus was right, he knew how to act, and the Sejm in 1784 is proof of this, and in 1793 personal traits and external circumstances, unfortunately, prevented the king from using political skills in all its power.

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DETERMINATION OF THE SOCIAL ROLE OF LANGUAGE, LANGUAGES, LITERATURE, BELARUSIAN FOLKLORE FUNCTIONING IN THE DEVELOPMENT CONTEXT OF EUROPEAN AND WORLD CULTURES

CHINESE MOTIFS IN THE POEMS OF MAKSIM TANK

S. Aksenchikov-Biryukov, A. Aksenchikova-Biryukova
Francisk Skorina Gomel State University, Gomel, Belarus

The name of Maxim Tank is one of the brightest in the history of Belarusian literature. In the past, the works of the poet excited and nowadays continue to excite readers by a variety of themes, images and forms. The relevance of the study is due to the great interest in the culture of China at the present time.

The purpose of this study based on the images of the poems of Maxim Tank is to reveal the impact of the trip to China on his work had in 1957.

Material and methods. The material of the study was the poems of the 'Chinese cycle' and other works of the poet about the historical and cultural monuments of China and talented people of this country written throughout his life. The research method is descriptive.

Findings and their discussion. Maxim Tank was one of the first Belarusian poets who introduced readers to China in his works. In the autumn of 1957 in the Soviet delegation 'All-Union society of cultural relations with foreign countries' the poet visited this country and took part in many events dedicated to the eighth anniversary of the People's Republic of China. This trip to China influenced the creative work of Maxim Tank and inspired the poet to create poems dedicated to the Chinese theme.

The first work is, the so called 'Chinese cycle', written in 1957-1958 and includes 26 poems. Maxim Tank introduces readers to the culture and traditions of China, referring to Chinese legends and traditions. In the poem 'the Great wall' M. Tank uses the famous tragic tale about Meng Jiang Nui, crying bitterly over the body of her husband Wang Xi Liang, who has died during the constructing of the Chinese wall: *I hear Meng Jiang Nui crying bitterly. / She say that the field is empty, the blood is freezing by hunger and cold, / That loneliness is in her fanza / Because the husband hasn't returned back home. / For running away the Emperor / Has made an order to build him up. / And Meng Jiang-Nui asks the high walls: / - where is Wang Xi-Liang, what happened to him?* [1, p. 160]. In the poem 'the Old saying', the poet mentions Chinese folk wisdom*: People's wisdom says/ It needs to be born in Suzhou / Because the climate there is the best; / It needs to live in the beautiful Hangzhou / Cause the*

city is the most beautiful; / But it needs to die in Luzhou, / The wood for the coffin there is the strongest [1, p. 161].

Amazing architectural monuments of China which Maxim Tank visited during his trip in this country inspired him to create a number of works. In the poem 'the White Horse' the poet introduces readers to the history of the Foundation of the first Buddhist monastery in 68 AD in China: *Two Buddhist monks, Gopala and Saladin / Arrived on a white horse brought with them their canon. / Emperor Ming ordered to put for them / Magnificent temple and in honor gave the horse the name: White Horse* [1, p. 164]. In the poem 'Bridge of Eternal Tranquility' the poet with delight sings the beauty of the Beihai Park, the Imperial garden, which is located near the Forbidden city in Beijing: *Brother, if you have to visit this Paradise, / Believe that you will not see everything in a dream, but in reality: / the Magnificent Beihai Park and lake Beihai, / that like jade burning in a gold frame* [1, p. 164]. And in the poem 'The Longmen Grottoes' the master of the poetic word tells us about the art treasures of the stone caves of ancient China: *What is living and eternal here is one / unique Art of the people / of the People as the Sage, the Poet and this / Always delights and surprises us* [1, p. 162].

Famous poets of China are not remained without attention of Maxim Tank. In the poem 'The shadow of the monument in water reflection of Dinhu lake' he describes the first known lyric poet of the Warring States period, Qu Yuan, who died in the river Milo: *And in reply I hear a hum: / Look in the steep whirlpool / But don't disturb the wind of the cane / And you will see how alive Qu Yuan is there!..* [1, p. 167]. In the work 'Bo-Jui-I' Maxim Tank writes about the famous representative of Chinese realism of the Tang Bo era, Jui-I, whose poems were understandable even to ordinary people: *Now here, where the glorious Bo Jui-I / Was once singing sad tunes, / Hearing a conversation of fishermen, a noise of the stream / of I Shui river that tears a driftnet with a catch* [1, p. 162]. And in Maxim Tank's poem 'Luoyang' Bo Jiui-I is a symbol of friendship between China and Belarus: *I went to Laiane for a long time with my Chinese friends. / The friends were reading me Bo Ju-I, / And I read them verses of Kupala* [1, p. 206]. The poem 'Qi Bai-Shi' is dedicated to the famous Chinese artist, calligrapher and woodcarver Qi Bai-Shi, who died in 1957: *Do not cry over the tombstone / like vervain in silence. / Don't you think this is / where Qi Bai-Shi ended his big endless journey*? [1, p. 161].

Maxim Tank not only gave the atmosphere of Ancient China, but also created the image of the modern state of China. In the poem 'Wan Sui!' Maxim Tank depicts a festive mood of the Chinese people which are celebrating the eighth anniversary of the founding of the People's Republic: *The areas flourished from wreaths / And from the smiles joyful and sincere / from the shine of the unfolded flag* [1, p. 203]. The poet in the poem 'At the banquet table' writes about meetings with ordinary people of China and about his conversations with them: *the Table is filled with modest gifts of the earth: /*

Golden apples, tea, peanuts. / Like old friends, we started talking about bread, cotton and rice [2, p. 204]. And in the poem 'At the gates of Tiananmen' Maxim Tank wrote about the sincere friendship between the two peoples: *We have put our palms together. / No problem I understood few words in Chinese. / I stood with my friends on Tiananmen holiday, / and in harmony with their joyful song my sing merged. / By this song we wanted to say to the world: / We won't be able to be broken, to tear apart* [1, p. 202].

The influence of travel to China manifested itself in the creative work of Maxim Tank almost over the next five decades. And in 1990, the poem 'AI! I love' was dedicated to the Chinese word 'Ai': *when meeting with friends, / I learn their language. / I open my phrases with the words / Necessary in life. / But where did you get 'Ai!', the Chinese word, / you don't know? / And always when you are in my arms / you repeat this* [2, p. 213]. In the same year, the poet drew attention to the similarity of Belarusian ants and Chinese characters. This inspired him to write a poem 'Over Chinese characters', in which he mentioned the names of famous Chinese painters: *I watch the forest paths / of Fussy ants. They somehow seem to me / Alive characters / Of the famous Su Shi, Sang Shu-Fang, / Lee Sun Bao-Ling, /from which I cannot come off / the Mystery of which / I can't solve* [2, p. 203].

Conclusion. Travel to China was an outstanding event in the life of Maxim Tank. In his works, particularly in the poems of the 'Chinese cycle' the poet vividly and figuratively conveyed his impressions of everything that impressed him in this country. These works were written by Maxim Tank immediately after his return from China. In them Maxim Tank cites the monuments of architecture of this country, famous artists and poets and conveys the atmosphere of modern China. The poet returned to the Chinese theme throughout his life.

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THE PROBLEM OF HISTORICISM IN THE NOVEL "KING STAKH'S WILD HUNT" BY ULADZIMIR KARATKEVICH

I. Atrakhimovich
Secondary School No. 21, Vitebsk, Belarus

Uladzimir Karatkevich is one of the most famous Belarusian writers of the 20th century. He worked fruitfully as a poet, fiction writer, playwright, essayist, literary critic and screenwriter.

Karatkevich's works centre on the history of the Belarusian people. Karatkevich was actively involved in historical research, reflecting his search for historical truth in his literary works and bringing many interesting characters to life through his writing.

Uladzimir Karatkevich showed an exceptional inclination towards historical themes, did much to revive the national consciousness of the Belarusians. The writer masterfully conveyed the spirit of the past eras, created unique characters, revealed the rich spiritual world of his characters and linked their personal destiny with the fate of the people.

The main purpose of our research is to analyse the ways in which Karatkevich depicted the historical events taking place in the 1880s in his novel "King Stakh's Wild Hunt" and to prove the impact of his work on modern Belarusian literature.

Material and methods. The material of the study is the novel "King Stakh's Wild Hunt" by Uladzimir Karatkevich, the premise and the historical background of the novel which takes place in the 1880s. The methods of investigation are the following: 1) data collection and historical analysis; 2) a content analysis and a hermeneutic analysis for interpreting the novel; 3) a generalization method to achieve the main purpose of the research.

Findings and their discussion. Karatkevich's work is notable for its romantic sentiments, high artistic culture, patriotic and humanistic pathos. The writer has significantly enriched Belarusian literature in terms of genre, filled it with intellectual and philosophical content.

Karatkevich expressed concern that the Belarusians did not have such a literary type of character that other peoples had, for example, Faust or Till Eulenspiegel. But he believed that a literary type which reflected the main features of the people's national character and their aspirations should appear.

Uladzimir Karatkevich perfectly knew and reflected the events of the distant past at a high artistic level. History was an integral part of his spiritual life. The writer relied on historical documents, preferring not to copy historical events and facts with scientific certainty, but rather use artistic intuition and creative fiction. For him it was important to recreate the spirit of the past eras, to understand the meaning of history.

Uladzimir Karatkevich had a romantic, mythological and at the same time authentic and artistic understanding of the past, raising issues that are relevant to our time.

As a talented master of the detective genre, Uladzimir Karatkevich revealed himself in the novel "King Stakh's Wild Hunt" whose events take place in the 1880s on the estate of the Marsh Firs and its surroundings, in one of the remotest corners of Belarus. As in the best adventure works of world literature, the writer narrates about the clash between folklorist Andrei Belaretski and the hostile and evil force that is the wild hunt, about how the main character unveils the mystery of the Little Man and the Woman-in-Blue. The depth with which the

writer interprets national history and people's life is fascinating, which is especially noticeable in the protagonists' statements.

"King Stakh's Wild Hunt" is notable for its intriguing premise and simple narrative. The main character gets into the most unexpected, complicated situations and emerges as a winner from them. Karatkevich's writing is influenced by the well-known novel "The Hound of the Baskervilles" by Sir Arthur Conan Doyle. However, Uladzimir Karatkevich spoke about extraordinary events in the Marsh Firs in his own way. In contrast to the "pure" detective story, the writer showed the Belarusian society of the 1880s not only in its contradictions, but also in its national, cultural and historical specificity. There are many historical descriptions, ethnographic and everyday details in the novel such as dances in the palace of Yanowska, food, drinks and things in the house of Dubatowk, and drygants (a rare breed of horses in Belarus in ancient times).

Dreaming of a free and independent homeland, yearning to awaken national dignity and awareness among Belarusians, Uladzimir Karatkevich appeals to the legend of King Stakh, whose origins go back to the beginning of the 17th century.

The writer condemned social oppression, tyranny and despotism embodied by the wild hunt. At the same time he raised questions of the purpose of a person's existence, the meaning of life and love for the Motherland, showed a great and pure love of Belaretski and Yanowska. Andrei Belaretski not only exposes the mysterious evil forces, but fights and defeats them, assisted by the peasants whose oral and poetic work he closely explores.

For Uladzimir Karatkevich's protagonists, the story is an organic part of spiritual life. For Andrei Belaretski, as for the author, it was natural to understand the connection of times. He thought with dismay about the fate of his native land, its heroic and tragic history.

Conclusion. In his creative work Uladzimir Karatkevich revealed a deep understanding of historical processes, a great love for his native land and an individual. He interpreted the life of Belarus over several centuries in prose and showed interest in the key periods of the national history. In the novel "King Stakh's Wild Hunt" Karatkevich showed the Belarusian society of the 1880s not only in its contradictions, but also in its national, cultural and historical specificity.

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THEMATICS OF THE NOVEL BY K. ISHIGURO

B. Bahtyyarova
VSU named after P.M. Masherov, Vitebsk, Belarus

Kazuo Ishiguro is a well-known contemporary British writer of Japanese descent. He is the winner of the 2017 Nobel Prize in Literature. K. Ishiguro was born on November 8, 1954 in the city of Nagasaki (Japan), and in 1960 his parents moved to the British city of Guilford. In England, Ishiguro received a good education, became a world-famous writer.

1981 was the time of his literary debut. Ishiguro is now a popular author, his novels are being translated into the languages of the peoples of the world. Researchers of his work (S.V. Tolkachev, V.G. Minina and others) primarily pay attention to the multiculturalism of K. Isiguro. The relevance of the study of the novels of the writer is determined by the significance of those raised by the author and the significance of the writer's figure itself.

The purpose of this research is to determine the range of topics that are presented in the works of K.Isiguro.

Material and methods. The material has become the novels of the K. Ishiguro. In this paper, the themes of K. Ishiguro's novels are explored using techniques of structural-typological and descriptive methods**.**

Findings and their discussion. To the important characteristics of the creativity of K. Ishiguro should include the themes of his works. It points to the particular vision of the world by the writer. Ishiguro's first novel, "Where the hills are in a haze" (1982), tells of Etsuko, who lives in England, a widow from Japan. After the suicide, Etsuko's daughter was haunted by the memory of the destruction and restoration of Nagasaki. The theme of traumatic memory becomes central in this work.

Next to it develops the theme of good and evil, love and hate. The second novel by the time of publication was the novel "Artist of the fragile world", where the theme of memory deepens, and the main character is the old artist Matsui. Ishiguro here explores the attitude of the Japanese to the Second World War, the theme of guilt and the artist's responsibility for his social position. Matsui supported the ideas of the Japanese militarists; after their defeat, the burden of shame fell on his shoulders and on his reputation.

The novel "The Artist of the floating world" became the book of the year in the UK. The theme of the past, calculating with the past takes a lot of space in Isiguro's novel "The Rest of the Day" (1989). The author in it tells the story of an elderly English butler. Through the memories of the butler, the author portrays the history of England for half a century.

The writer subtly notes the loss by Britain of the leading role in world politics, which the United States began to play instead. The theme of England's role on the world stage is complemented in the novel by themes of duty and

loyalty, friendship and love, the extinction of traditions, the roots of the fascist ideology, and the peculiarities of the English national character. The theme of the novel, the mastery of its embodiment led to the fact that the author was awarded the Booker Prize for this work.

Memory, a small person and a big history, predetermination of fate and freedom of choice, a connection between the past and the present, nostalgia, duty and feelings - these are the main themes in the works of K. Ishiguro. In fact, they were already laid in the first novel "Where the Hills Are in the Haze", therefore this novel can rightfully be considered the creative manifesto of the author.

The works of the writer are filled with the study of the human soul, his inner world, the inner reserves of man. The heroes of Ishiguro are in a state of introspection, rethinking of their own life, and the life of society, and the life of the big world.

In the novel "When We Were Orphans", the theme of the past as an integral part of the present and future is plot-forming. The past for the hero narrator is fraught with many mysteries that are difficult and painful to guess, because they indicate the responsibility of a person for his actions. The theme of the homeland gets an interesting embodiment in this novel. In the interpretation of the author, the homeland is a place that a person recognizes as his homeland, his roots.

Ishiguro tries to comprehend not only the past, but also the present. The twentieth century was a time of intensive development of science and technology. In the novel "Do not let me go," the writer made the central theme of scientific progress and morality, the theme of the price that humanity pays for scientific progress. In addition, this work reveals the themes of loyalty, responsibility, betrayal, love, friendship. The main characters of this novel are not people, but clones that are grown to save people. Ishiguro's clones are endowed with thoughts, soul, feelings. In fact, they are no different from people. The writer sharply raises the question of the right of man for the sake of his own well-being to take the life of another living being. The theme of the novel "Do not let me go" belongs to the number of universal themes, themes of universal human significance and sound. It was further developed in the novel "the Burial of the giant" (2015). In this theme memories of the past, about the ancestors, the homeland appears as a quality that distinguishes man from animal. A person who has lost his memory, according to the writer, loses the right to be a man.

Conclusion. The theme of The works of K. Ishiguro emphasizes the features of the origin and talent of this writer. Ishiguro is one of the multicultural authors, because his work combines Japanese and British cultural traditions. The theme of the memory of this author and the plot-Central. In his early "Japanese" novels (novels "Where in the haze of the hills", "the Artist of the floating world", "When we were orphans") dominate the themes of the house, the fate of a person who was far from the place of birth. In the novels of writer the Mature period of creativity ("Never let me go", "The Burial of the giant") come first eternal themes of good and evil, fate, duty.

THE PROBLEM OF DISCRIMINATION IN 'HARRY POTTER' BY J.K. ROWLING

N. Bulash
VSU named after P.M. Masherov, Vitebsk, Belarus

The cult cycle of the novels of J. K. Rowling "Harry Potter" played an important role in forming the culture of the 2000s. Millions of children and adults around the world enthusiastically read these books. In addition to online communication through blogs, fan sites and groups in social networks, fans of Harry Potter take part in thematic conferences. So what does make these books so popular?

Joanne Rowling's books are an excellent educational basis for the young generation. They teach us how to distinguish the good from the evil, how to act right in different situations and how to root moral principles.

Despite the fact that the books were originally written for a child's audience, they do not reflect only children's problems. In these books you can find such current issues as discrimination on the basis of race and gender, stratification of the society into the poor and the rich people, contradiction between individual and social values and many others. Joanne Rowling urged her novels as a "prolonged argument for tolerance" [3] and urged her fans to "question authority" [3]. So, the aim of study is to research the problems of discrimination in Joan Rowling's books.

Material and methods. Our research is based on the comparative method. The material of our study is classification, description.

Findings and their discussion. As it was mentioned above, discrimination is one of the most current problems of our time. One of the subspecies of discrimination is racism. According to the English Oxford dictionary "Racism is prejudice, discrimination, or antagonism directed against someone of a different race based on the belief that one's own race is superior" [4].

In Joanne Rowling's books, we can draw a parallel between the elves and representatives of the Negroid and Mongoloid races from the 16th to the 19th century. Terrible working conditions and unpaid work are the main reasons why we can compare these two situations. The word "slavery" and the word "racism" are very closely connected. Despite the fact that slavery has been abolished long time ago, unfortunately, we cannot tell that racism is a remnant of the past. Every day, people around the world face this problem in simple situations: when they apply for a job, study in schools and universities, even just talk with other people. The policy of many countries is directed against this way of thinking, but, unfortunately, it is not always effective.

In her books, J. K. Rowling shows us this social problem in the image of the house-elf Dobby. Dobby is the impersonation of the oppressed groups of the population. He symbolizes liberation from the masters.

The first mention of the terrible plight of the house-elf refers to the second book – "Harry Potter and the Chamber of Secrets" (1998). After meeting Dobby, Harry Potter politely invites him to sit down. To his horror, the elf burst into tears.

"S-sit down!" he wailed. "Never … never ever …"[1].

"Dobby has never been asked to sit down by a wizard — like an equal"[1].

This brief phrase reveals that even in the magic world there is a superiority of some races over others. In addition, the theme of slave's psychology takes place in this books, or so-called "dependence on the master".

After Dobby speaks negatively about his masters, he starts to punish himself, despite the fact that his masters will not know about this fault: "Dobby had to punish himself, sir," said the elf, who had gone slightly cross-eyed. "Dobby almost spoke ill of his family, sir ..." [1]"The wizardfamily Dobby serves, sir. Dobby is a house-elf, bound to serve one house and one family forever."

"Do they know you're here?"asked Harry curiously.

Dobby shuddered.

"Oh, no, sir, no. Dobby will have to punish himself mostgrievously for coming to see you, sir. Dobby will have toshut hisears in the oven door for this. If they ever knew, sir…"[1].

In this fragment we can notice the unquestioning commitment to the master. The thought that you can imagine your master not in positive way, scares the elf. For him, the lord is an indisputable authority and he must be obeyed, that is why he punishes himself. Dobby says: "Sometimes they (the masters) reminds me to do extra punishments" [1].

This line says that some wizards are not only unfair to the elves in a mental way, but also punish them physically. In the modern world, the open expression of racist attitudes is considered politically unacceptable, not mentioning the practice of it.

The same demonstration of slave's philosophy can be found in the words of another house-elf Winky, who served the Crouch's house.

When Barty Crouch gave Winky freedom at the Quidditch World Cup in 1994, she became very upset. As there was no worse sorrow for her than being free.

"Winky has behaved tonight in a manner I would not have believed possible," he said slowly. "I told her to remain in the tent. I told her to stay there while I went to sort out the trouble. And I find that she disobeyed me. This means clothes."

"No!" shrieked Winky, prostrating herself at Mr. Crouch's feet. "No, master!Not clothes, not clothes!" [2]

After being banished by Mr. Crouch, Winky cannot adapt to normal social life. Having lost her sense of existence, she is afraid to self-realize. That is why she starts to drink alcohol and gradually turns into a drunk untidy creature. But

even being in this situation, the elf continues to worry about her old master and protect his secrets: "Winky keeps her master's secrets," she said mutinously very heavily now, frowning up at Harry with her eyes crossed. "You is nosing, you is." [2]

"Winky must not talk like that to Harry Potter!" said Dobby angrily. "Harry Potter is brave and noble and Harry Potter is not nosy!" [2]

"He is nosing into my master's private and secret Winky is a good house-elf, Winky keeps her silence, people trying to pry and poke" [2].

Even after her release, Winky does not stop to believe that Mr. Crouch is her master, and she is his servant. A matter of habit can also explain dependence on the desire to serve. Winky knows no other life but service, this huge real world scarce her, and she prefers to remain "protected" by her master. She has no personal initiative and waits for her to be told what to do and how to do it.

Conclusion. This way of thinking can be changed only by replacing the destructive worldview with a creative one. It is very important for a person to have the freedom of choice, responsibility and the ability to satisfy his own needs. In conclusion, it can be said that racism is nothing but luck of human's mind. We cannot say that one race is smarter or better than another. After all, we should remember brave elf Dobby, who did more good than many other wizards.

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YASEP DRAZDOVICH AS AN IMPORTANT FIGURE IN BELARUSIAN CULTURE (FOR 130th ANNIVERSARY SINCE THE BIRTH OF PAINTER)

L. Golubeva, M. Drazdovich
Vitebsk State Academy of Veterinary Medicine, Vitebsk, Belarus

Yazep Drazdovich is a remarkable figure in Belarusian culture of the first half of the 20th century. A talented painter and graphic, remarkable master of the plastic, decorative and applied arts, writer, poet, teacher, ethnographer, archaeologist, and folklorist – he was able to show himself in the every of the named field. Sources of his art can be found in Belarusian traditional popular attitude to the world. The aim of the research is to systematize the information

about the contribution of Yazep Drazdovich to fine arts, literature, language, study of the history of Belarus.

Material and methods. Material of the research is the biographical data of Yazep Drazdovich from different sources [1–4]. Research methods: descriptive method, method of generalization and the research of biography literature.

Finding and their discussion. Yazep Drazdovich was born on October 1 (13), 1888 in the family of an improverished nobleman in the farmstead of Punki, Dzisna district. The primary education he got in Dzisna and later in 1906–10 studied at the professor I. Trutnev's painting school in Vilnya. The formation of Yazep Drazdovich as an artist and his first steps in art were in the time of the Belarusian Cultural Renaissance and the years of Belarusian national idea gained its strength.

Yazep Drazdovich was one of the first who began to develop historic theme in Belarusian fine arts, the author of the first works about the Belarusian scholar and pioneer of printing Frantsishak Skaryna. He is also known as a founder of fantastic-space theme in Belarusian art (painting and graphic series «Life on the Saturn», «Life on the Mars», «Life on the Moon», and others). Allegorical and symbolic themes also take a considerable place in Yazep Drazdovich's creation.

As a result of his innumerable walks throughout Belarus and studies of national architecture, architectural and cultural monuments and culture as a whole, graphic series and the albums «Vilnya», «Troki», «Kreva», «Mir», «Hlybokaye», «Halshany» and others appeared.

The interests of Yasep Drazdovich were diverse. His deep attention to the history and culture of Belarus led to scientific investigations. Thus, the painter took part in some archeological excavations. He described 30 archaeological monuments in an unpublished paper «Prehistoric antiquity of Dzisna». He discovered several sites of the Stone and Bronze ages, a lot of stone crosses, gathered a collection of stone axes. As a result of archaeological research he wrote «Where Dudutki and Harodnya are situated».

During numerous ethnographic expeditions he studied and noted Belarusian folklore and dialect peculiarities. Yasep Drazdovich contributed to the Ivan Lutskevich Belarusian Museum in Vilnya and the Belarusian Academy of Sciences in Minsk as well. Besides, the author showed himself extremely fruitful and a fine master of applied arts in such a peculiar field of decorative arts as painted carpets where his knowledge of national traditions can be clearly seen.

Yasep Drazdovich's interest in Belarusian history and fantastic-space theme was followed in literature. He wrote a number of books as well as started working on the historic novel «Haradolskaya Dense Forest» (1924), wrote and illustrated with himself made prints the popular-scientific booklet «Niabiesnyia Biehi (Movements in the Outer Space)» (1931). He enriched poetry as well. He noted in diaries his inmost thoughts, the chronicle of life and self-development as an artist. In his diary Yazep Drazdovich wrote: «Actually, I'm a fickle person: I'm starting something new every three years. All my life is like that. I was a

shepherd for three years in adolescent, I spent three years for art school and overall development, for three years I've been in the army, then for three years I was working for community goods and was writing as a writer. And now it's already third year as I'm an itinerant folk artist ... » [1].

Nowadays Yasep Drazdovich's art works are kept at the National Museum of the Lithuanian Republic, at the National Museum of History and Culture of Belarus, at the National Art Museum of Belarus, at the Museum of Old Belarusian Culture at the NASc of Belarus, at the Yakub Kolas Literature Museum, at the Yakub Kolas Central Scientific Library of the NASc of Belarus, at the other regional museums in Belarus, and in some private collections.

At present streets are named in honor of Yazep Drazdovich in Minsk, Orsha, Molodechno, Glubokoe, Sharkovschina, Radoshkovichi, Novogrudok. There is the monument of Yazep Drazdovich by the sculptor Igor Golubev in Trinity suburb in Minsk In 2012 the bust of Yazep Drazdovich was made on the Alley of famous countrymen in Glubokoe. In 2018 Yazep Drazdovich grave was included in the list of historical and cultural values of Belarus, in the same year in the place of farmstead of Punki was a memorial sign in honor of the artist. Germanovichsky Museum of Art and Ethnography is named after Yazep Drazdovich (Sharkovschina district, Vitebsk region). Annually international plein airs are held in the village of Punki Glubokoe district in honor of the painter. There are his pictures, carpets, graphical works, materials about his life and creation in memorial house of folk art, created in the local secondary school. Researchers of the creative work of artist call him "our little Leonardo da Vinci", "Eternal wanderer", "Dreamer", "Predictor of the future".

Conclusion. Yazep Drazdovich made a lot during his short life: painter, sculptor, engraver, writer, poet, archaeologist, folklorist, teacher, traveler. Painter by profession, he has written scenic pictures of the history of the Principality of Polack, has introduced the national colors in the portraits of Prince Useslau the Sorcerer and Skaryna, wrote a historical novel «Virgin Forest Haradoesky», published the first Belorussian book on astronomy. He threw up Belarusian cities and towers on the Moon, created drawings of space torpedoes, on which «earthly tourists» have to take a trip to some planets of the solar system. Also he is known for recording folklore, processing popular vocabulary for dictionaries. Modern Belarusians honor the memory of the talented artist.

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THE PROBLEM OF RELIABILITY
OF ELECTRONIC ENGLISH-RUSSIAN DICTIONARIES

A. Ivashkevich
Orsha College VSU named after P.M. Masherov, Orsha, Belarus

It's impossible to imagine learning a foreign language without using a dictionary. In the last decade electronic dictionaries have gained special popularity due to some undeniable advantages of using them. However, the reliability of transcription, meanings of words and their contextual usage are often misleading not only beginners but also profound learners of English.

The main goal of the present article is to compare most frequently used English-Russian on-line dictionaries and some Play Market versions with a printed edition considered as a model pattern in order to ascertain which are likely to be more reliable for consulting and outline some advantages of electronic dictionaries.

Material and methods. Critical analyzing on-line and Play Market dictionaries, comparing, describing, sorting out and questioning are helpful in our investigation of the problem.

Findings and their discussion. A diversity of modern on-line and off-line dictionaries seems to be endless, which hampers the process of choosing a convenient and immediately accessible reference book. Modern learners of English prefer to use electronic dictionaries due to some of their undeniable advantages.

1. Various types of search are possible in electronic dictionaries [1].

2. Storage capacity in the ED is almost unlimited. "Some EDs are provided with entire "bookshelves" containing, for instance: an encyclopedia, a technical dictionary, a reverse-order dictionary, an etymological dictionary, a thesaurus, a searchable corpus of authentic text" [2, p. 146].

3. The process of searching a word takes relatively little time.

4. Electronic dictionaries don't take up space on bookshelves. They are easily carried if used in mobile phones.

5. They are versatile in regard to the place where you can use them.

6. Some researchers say that electronic reference tools are helpful in language learning. However the others prove they are no better than paper dictionaries in facilitating student's vocabulary acquisition and retention of the consulted words [2, p. 148].

7. Some EDs give sound examples of pronunciation, which is one of the greatest advantages over paper dictionaries.

8. Language learners are entitled to keep up with the latest developments in vocabulary due to constantly provided upgrades on websites.

9. Electronic reference tools usually cover well terminology and neologisms.

Electronic dictionaries are undoubtedly superior to paper dictionaries in a number of ways. But their full reliability raises doubts. We carried out a survey among the students of our college to find out most commonly used electronic dictionaries. According to its results 90% use on-line English-Russian dictionaries, 9% prefer to consult Play Market versions and only 1% trust a printed edition.

To investigate the degree of reliability of WooordHunt, Cambridge Dictionary, ABBY Lingvo Live, Reverso Dictionary, Pons and Bab.la English-Russian electronic dictionaries we compared them with "Modern English-Russian dictionary" by V. Muller taken as a model pattern.

A traditional indispensable part of any entry is pronunciation guide which includes transcription and a recorded version of a word. All the electronic dictionaries have recordings of pronunciation. At the same time Bab.la and Reverso dictionaries don't provide written transcription. Transcription in WooordHunt and Bab.la dictionary can be unreliable for such tricky words as the noun "resume"([rɪˈzjuːm]), for example [3].

The other constituents of the entry, that is grammatical information, the field in which words are used, synonyms or related words and contextual usage are widely presented in WooordHunt, Cambridge Dictionary, ABBY Lingvo Live and Bab.la dictionaries. Pons and Reverso Dictionary give only translation variants and some example sentences. WooordHunt provides a diversity of variants of contextual usage for some words (more than ten examples for "headache" and "sore throat") [3]. By the way, Muller's Dictionary doesn't give synonyms to words [4].

The range of meanings provided by the dictionaries differs as well. The lexeme "to put" is introduced in a more profound way in ABBY Lingvo Live (14 meanings) [5] and Muller's Dictionary (12) [4, p.583]. Cambridge Dictionary (4 meanings) is the last in the rank of giving Russian equivalents to words [6].

Phrasal verbs present the problem of a paramount importance for some learners of English. If there's a necessity to study the verb "to take", a student had better consult Muller's Dictionary (11 phrasal verbs) [4], Cambridge Dictionary (14) [6], WooordHunt (13) [3] or Pons (13) [7]. ABBY Lingvo Live (6) [5], Reverso Dictionary (10) [8] and Bab.la dictionary (6) [9] provide a less wide array of meanings.

The differences between English and American variants of some words are introduced in all the dictionaries except Bab.la dictionary.

5 out of 20 Play Market English-Russian dictionaries have reliable pronunciation guide, traditionally structured entries that fit basic requirements. The greater part of the investigated off-line versions has either wrong transcription or recorded pronunciation of words. The presentation of entries and lexemes is poor, as a rule. English and American variants are confused.

The range of Play Market dictionaries is wide enough, which makes it much more difficult to choose a really reliable one.

Conclusion. Prevailing number of English-Russian electronic dictionaries are very good beyond any doubts but there is no perfect one that learners of English can rely on completely. The students of our college disregard other reference resources and use only one or two electronic dictionaries. Moreover they don't consult paper editions.

In order not to be misled by information or pronunciation guides provided in any presumably good dictionary it's desirable to question its reliability and use several reference tools at once (paper or (and) electronic).

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COMPARATIVE ANALYSIS OF ENGLISH EVALUATION PREDICATES AND THEIR CORRESPONDENCIES IN TRANSLATED EDITIONS OF NOVELS "INVISIBLE MONSTERS" AND "SURVIVOR" BY CHUCK PALAHNIUK

K. Filipovich
VSU named after P.M. Masherov, Vitebsk, Belarus

In contemporary Russian linguistic society there are an increasing number of translations of English literary texts. The peculiarities of the reproduction of evaluation lexis in English-and-Russian translation as a dominant layer of English literature don't have the full reflection in modern researches. The

problem is considered in this work. In particular, the number of evaluation lexical units was selected from the original editions of famous novels "Invisible Monsters" and "Survivor" by Chuck Palahniuk and their Russian-language editions. Both lists of evaluation lexis were investigated and compared in terms of translation transformations which were used by the translators in order to convey the original spirit of the novels and the author's inclinations.

Relevance of the following research is determined by the necessity of working out principles of the reproduction of evaluation lexis in English-and-Russian translation as important means of re-establishing emotional reality and characters' lines.

The aim of scientific research is to detect a number of features of the reproduction of evaluation lexical units in a process of English-and-Russian translation of literary texts written by modern foreign authors.

Material and methods. Material is represented by nearly 300 lexical units selected from the original editions of famous novels "Invisible Monsters" and "Survivor" by Chuck Palahniuk and their Russian-language editions. All the examined unites were checked with the help of translation dictionaries and dictionaries with definitions. Then they were compared with the variants of their Russian translation. Methods are the following: full selection of material, method of quantitative analysis, method of statistical observation and comparative analysis.

Findings and their discussion. During the research 292 evaluation predicates were selected from the examined novels "Invisible Monsters" and "Survivor" by Chuck Palahniuk. All these lexical units were compared with their translations into Russian. Lexical transformations, in their turn, serve as the basic grouping feature. Thus, such lexical transformation as *generalization* comprises *9%* of all transformations which were used in the process of translation. E.G.: the expression *The yards and yards of brocade scarf* in the translated edition of the novel "Invisible Monsters" is represented by the phrase 'парчовый шарф кажется бесконечным', where the word 'бесконечный' substitutes for the phrase *the yards and yards* The matter is that the word *yard* reflects English and American reality, but the translators goal is to adjust the text to the readers who speak Russian. So, the Russian word 'бесконечный' has much more general meaning. *6%* of all transformations is dedicated to *concretisation*. E.G.: the phrase *A tiny black outline* in the Russian edition of the novel "Survivor" is translated as 'крошечная фигурка'. According to the dictionary the word *outline* has the meaning 'очертания', 'контур', but in this very context the word refers to a girl. That is why in this case the word *outline* is translated as 'фигурка'. *26%* of transformations accounts for *compensation (addition and omission)*. E.G.: the English word *fabulous* is translated into Russian with the help of *addition* as 'восхитительна и фантастична'. The word collocation *beautiful woman* is, on the contrary, translated with the help of *omission* as 'красавица'. The rate of the use of *meaning extension or sense*

development comprises **8%** of the total number of the used lexical transformations. E.G.: in his novel "Survivor" Palahniuk describes the hands of a girl with sallow complexion using the following words: *Something waxy, looking raw and white*. Into the Russian language this sentence is translated as 'восковые и белые как не пропечённое тесто'. Here the lexical unit *raw*, whis is usually translated as 'сырой' has a much more extended meaning that is achieved with the help of comparison with dough. ***Descriptive translation or paraphrase*** is used in **13%** of cases. This translation transformation is a great means of expressiveness in a literary text. E.G.: in the Russian edition of the novel „Invisible Monsters" the original lexical unit *nun*, which has the meaning 'монашка', is descriptively translated as 'сердобольное создание'. ***Complete transformation*** in the process of translation of the examined two novels by Chuck Palahniuk is used in **14%** of cases. E.G.: the main character of the novel "Invisible Monsters" while talking about such a disease as AIDS uses the phrase *Fade to black* that may be literally translated as 'увядать до черноты'. The translator uses the complete transformation and conveys the essence of this phrase with the help of words 'Это синоним безнадёжности'. Thus, in spite of the absence of common components between these two evaluation expressions, on and the same idea is reflected in both phrases. ***5%*** of translation transformations falls on ***equivalents*** or the so called ***lexical matches***. This term stands for such lexical units which have the full correspondence in the language of translation, which is not a very common phenomenon. E.G.: the word collocation *long-legged beastie*, represented in the novel "Survivor", is translated into Russian as 'длинноногая бестия', which is a total equivalent for the original evaluation predicate. In many cases English lexical units can be translated into Russian in different ways. They have the so called ***various equivalents,*** which comprise **12%** of the whole number of lexical transformations in the above mentioned novels. E.G.: the lexical unit *queer* can be found in the novel "Survivor" and it has the following meanings: (1) *Deviating from what is expected or normal;* (2) *Used as a disparaging term for a gay man or lesbian* [2, p. 286]. In the Russian edition of the novel the translator's choice fell on the second meaning of the word *queer,* so the translation sounds as 'гей'.

Conclusion. As the result of the analysis the frequency of use of these or those translation transformations is defined. It is revealed that all of them are used in the process of translating English evaluation lexical units into Russian in the context of literary texts belonging to foreign writers.

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THE TREND TO NATIONALIZATION OF THE BELARUSIAN LANGUAGE ON THE EXAMPLE OF THE BELARUSIAN-LANGUAGE PRINT MEDIA

N. Kisialiova
VSU named after P.M. Masherov, Vitebsk, Belarus

A puristic tendency is vividly seen in today's Belarusian media. Purism is the desire to clear the literary language from foreign linguistic borrowings, neologisms, as well as non-normative lexical and grammatical elements (for example, popular-colloquial, vernacular, dialect). This phenomenon is typical for periods of the most active formation of national literary languages; associated with sociohistorical, political and cultural processes [1, p. 126].

The relevance of the study is due to the insufficient knowledge of the trend to nationalization of the language and the need for its analysis. The purpose of the article is to analyze and evaluate the puristic tendency on the example of publications in the Belarusian-language newspapers "Zvyazda" and "Nasha Niva".

Material and methods. The material for research is the puristic phenomena, which are represented and recorded in the Belarusian-language newspapers "Zvyazda" and "Nasha Niva" for 2017 year. Research methods are a descriptive-classification and analytical analysis.

Findings and their discussion. Belarusian purism today manifests itself in deflecting elements that are perceived as the penetration from the Russian language. This is due to the situation of bilingualism in our country because the Russian language today is an immediate threat to the Belarusian one. Our native language is forced to defend itself against a large number of Russianisms, which appeared during the Russification and led in fact to the destruction of the language structure. The corresponding process can be observed in the field of morphemics, where there is a decrease in the use of the suffix *-ірава-*. In its place comes a short and easy-to-pronounce suffix *-ава-*, for example, in words like *траўмаваць, канстатаваць, зарэгістраваць, пракаментаваць, канкураваць* and etc., article titles: ***Зарэгістраваць*** *прадпрыемства будзе прасцей* ("Zvyazda, 03.05.2017); *Польская паліцыя* ***пракаментавала*** *затрыманне беларуса пасля страляніны ў Гдыні* ("Nasha Niva", 15.11.2017); *Хірург* ***дыягнаставаў*** *у сябе рак з дапамогай айфона* ("Nasha Niva", 30.10.2017); *Расія пачала* ***блакаваць*** *усе ананімайзеры і TOR* ("Nasha Niva", 01.11.2017); *Работнікі заводаў "Форд" пачалі* ***тэставаць*** *экзашкілеты* ("Nasha Niva", 14.11.2017); *Вядучы АНТ Яўген Лашкоўскі патлумачыў, навошта збіраецца* ***канкураваць*** *на выбарах з кандыдатам ад улады* ("Nasha Niva", 30.01.2018). In our opinion, this is a positive phenomenon, because the use of the bulky suffix *-ірава-* is not justified from the point of view of speech culture, as it is the characteristics of the Russian verbs.

Another purist tendency that emerged at the morphemic level is the tendency to use feminine nouns with the suffix *-к-* to designate persons by profession: *докторка, сакратарка, акторка / акцёрка, сакратарка, прэс-сакратарка, дырэктарка, лідарка* etc. Here are the corresponding examples of newspaper headings: *У Нароўлі **докторка** выпісвала фіктыўныя бальнічныя за грошы, прадукты і бензін* ("Nasha Niva", 20.02.2017); *Пайшла з жыцця апошняя зорка "Салодкага жыцця" – шведская **акцёрка** Аніта Экбэрг* ("Zvyazda", 12.01.2015); *Брытанская **акторка** Хелен Мірэн выказала жаданне згуляць у фільме «Фарсаж 8»* ("Zvyazda", 01.04.2015); ***Дырэктарка** «Белсата»: 2018 год – не апошні для канала* ("Nasha Niva", 19.12.2017); *Былая **сакратарка** Ёзафа Гебельса памерла ў Мюнхене* ("Zvyazda", 30.01.2017); ***Прэс-сакратарка** МЗС Расіі: Грошы яўрэяў далі ўладу Трампу* ("Nasha Niva", 18.11.2016); ***Лідарка** французскіх ультраправых Марын Ле Пэн пазбаўленая недатыкальнасці* ("Nasha Niva", 08.11.2017).

The trend towards nationalization is also observed in the field of vocabulary. It is the use of such words as *гулец, заўзець, нападнік, кутні, кіроўца, спартоўца, мінак, вышымайка, міліцыянт, імбрычак, гарбата, памежнік, сеціва, заплечнік, лецішча, жаўнер, прыўкрасна, распавесці, наклад, ходнік, асобнік, жыццяпіс, адсотак, суладдзе, лётнішча* etc. Let us give examples from newspaper articles: *У Мінску **міліцыянт** дапамог наведвальніку рэстарана, у якога пачаўся прыступ эпілепсіі* ("Nasha Niva", 06.11.2017); *Мікалай Шкурко – лепшы **кіроўца** паштовага аўтамабіля* ("Zvyazda", 23.11.2017); *142-кілаграмовая штанга забіла амерыканскага **спартоўца*** ("Nasha Niva", 30.12.2016); *Інцыдэнт: у часе вучэнняў "Захад-2017" беларускі **памежнік** зайшоў на тэрыторыю Літвы вырваць грыб* ("Nasha Niva", 16.09.2017); *Амерыканскія **жаўнеры** будуць жывымі «баявымі электрастанцыямі»* ("Nasha Niva", 06.06.2016); *Гуськова: Трэнер паабяцаў мне **заплечнік** за медаль* ("Nasha Niva", 16.02.2018); *Ці патрэбна заключаць дагавор па вывазе смецця з **лецішча?*** ("Zvyazda", 22.11.2017); *У Мастах **мінак** выратаваў дзяўчынку, якая правалілася пад лёд на Нёмане* ("Zvyazda", 05.03.2018); *У чаканні **прыўкраснага.** Частка 2* ("Nasha Niva", 09.05.2017); *Крышціяну Раналду прызнаны **гульцом** 2017 года паводле версіі ФІФА* ("Nasha Niva", 24.10.2017); *Пуцёўкі на паляванне можна будзе набыць праз **сеціва*** ("Zvyazda", 28.03.2018); *Спартсмены **распавялі** пра ўражанні ад біятлоннага старту з Прэзідэнтам* ("Zvyazda", 06.03.2018); *Увесь **наклад** кнігі Насты Рыбкі распрададзены пасля расследавання Навальнага* ("Nasha Niva", 16.02.2018); *Удараны «Сеат» пераляцеў праз дзве сустрэчныя паласы і вылецеў на **ходнік*** ("Nasha Niva", 06.12.2017); *У свеце захавалася ўсяго два экзэмпляры гэтай кнігі, прычым абодва няпоўныя. Супрацоўнікі Нацыянальнай бібліятэкі рабілі лічбавыя копіі кожнага **асобніка,** а потым «аб'ядноўвалі» іх у адзін том* ("Zvyazda", 06.01.2018); ***Жыццяпіс** любога знакавага творцы, а тым больш – класіка*

літаратуры, Песняра беларускага народа Якуба Коласа не можа быць поўным без уважлівага вывучэння яго акружэння ("Zvyazda", 18.01.2018); *Ван дэр Бэлен набраў 19,7 **адсотка**, а Грыс – 18,8* ("Nasha Niva", 24.04.2016); *Алена Папова не проста паказвае, як няправільныя ўстаноўкі прывялі гераінь да фіяска ў дачыненнях з блізкімі людзьмі: тры дамы пераасэнсоўваюць мінулае, што дазваляе ім знайсці **суладдзе**, палепшыць адносіны з іншымі* ("Zvyazda", 24.07.2017); *У прыватнасці, за грошы з бюджэту Саюзнай дзяржавы плануецца капітальны рамонт **лётнішча** і сістэмы цеплазабеспячэння Баранавіцкай авіябазы, капітальны рамонт **лётнішча** ў Мачулішчах, пабудова пад'язных дарог да асобных вайсковых частак, рамонты сховішчаў, рэзервуараў і радыёперадаючых прыладаў* ("Nasha Niva", 11.12.2017).

The formation of the word *вышымайка* is interesting; it is created by the contamination *вышыванка* and *майка*. The name *вышымайка* was invented by journalists of "Радыё Свабода" in the social network Facebook. Show program leaders in Minsk recognized the word *вышымайка* as a word of 2014.

Conclusion. Therefore, this word can be considered the Belarusian linguistic neologism, which has absorbed a part of the ethnic and cultural specifics of our nation. In our opinion, moderate purism, which relies on its own means of language, on a wide popular base and is often an indicator of the growth of national self-awareness, is useful.

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THE CASE METHOD AS A WAY OF ACTIVATION OF INTELLECT ACTIVITY IN THE PROCESS OF LEARNING A FOREIGN LANGUAGE

D. Khrapovitskaya
VSU named after P.M. Masherov, Vitebsk, Belarus

The modern paradigm of education requires involvement of students in search and management of knowledge, it requires them to gain experience in solving problems in different situations of communication [1]. Formation of communicative competences of a school graduate is based on the use of social learning technologies, which include the case-method. Thus, the aim of our research is to analyze the specific features of this method and develop practical recommendations for its implementation in practice.

Material and methods. The following research methods were used: literature review on the subject and its critical analysis (works of E.I. Passov,

N.D. Galskova, N.I. Gez, E.I. Solovova, et al.), the observation of the teaching process in Vitebsk gymnasiums № 1 and 2, the analyses of the attended lessons.

Findings and their discussions. The basis of the case-method is a critical analysis, understanding and solution of specific social problems. Case is a description of a problem situation or a controversial issue with application of the facts on which the solution to the problem may depend. The use of the case-method provides activation of four main components allocated in the content of teaching foreign language speaking: motivational, procedural, effective, reflexive [2, p. 46–47]. Explore of this learning content is carried out in exercises that prepare for work on the case-method. They are following:

− exercises based on providing students with a) educational and speech situations, topics, problems, stimulating communicative and cognitive motives of speaking; b) language and speech material; c) diagrams, tables and other means of visualization for successful planning and programming of foreign language statements;

− exercises aimed at the development of skills to participate in discussions, debates, able to stimulate speech activity of students;

− exercises that teach objective assessment of their own speech activity, self-control and self-correction.

Work on the case method system consists of 3 steps. At the first (preparatory) stage, students are supposed to study the situation, highlight the problematic issues that need to be addressed. There is also a distribution of groups, the choice of" speaker "and" secretary", gathering of additional information with possible audio and video support, discussion of the problem in a group and producing of certain solutions. At the executive stage, presentation of decisions is carried out, discussion is held, alternative solutions are considered. The final stage is devoted to the selection of the optimal solution to the problem under discussion.

The case-method allows organizing foreign language training, focused on self-realization of the individual and development of students ' ability to find a solution in certain situations.

The use of case-method is possible only in the conditions of authentic process of socialization of students. In this context, the concept of "authenticity" implies primarily creation of conditions of communication as close as possible to the natural. "Socialization" means formation of a socially significant person in terms of gaining experience of collective interaction. The process of socialization is ensured by the presence of foreign language communicative competence, especially its types such as linguistic, pragmatic, cognitive and information competence.

An important condition for the implementation of case technology is an organization of the learning process in which 1) students get the opportunity to freely express their thoughts; 2) self-expression of the individual becomes more important than demonstration of language knowledge; 3) encouraged even

contradictory and paradoxical, but indicating the independence of students and their active life position of judgment; 4) each participant of communication remains the focus of attention of all others; 5) relationship is built on empathy and understanding of the point of view of others. With such an organization of the educational process, the barriers that reduce motivation of learning disappear and the participants of communication feel safe from criticism for mistakes.

Conclusion. Thus, together with all the above factors, the case-methods prepare students for real intercultural communication, providing a practical opportunity to use a foreign language in situations as close as possible to natural.

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THE COMPARATIVE ANALYSIS OF LINGUISTIC CHARACTERISTICS OF SHOP NAMES IN EDINBURGH (SCOTLAND) AND ORSHA (BELARUS)

A. Kutkovich
VSU named after P.M. Masherov, Vitebsk, Belarus

Chances of finding and understanding similarities and differences between different cultures are bigger nowadays due to globalization. Communication and transportation technologies have allowed people to experience new cultural, economic and social realities.

Language has been one of the most important means in this process. Through language we discover new possibilities and open new doors to enrich our inner world. Also through language we figure out the world around us. We understand the places which we find in our neighborhood. These places provide us with services and access products. These can be luxury brands, high street stores, attractive boutiques, names of products, menus, shopping centers, airports, bus stops, different magazines and newspapers.

It goes without saying that present-day businesses cannot star on a national or international stage without strong original brands. We can't imagine streets of the city without eye-catching shop signs. Some shop names like "Celtic Jewellery and Gemstones" and "Кристалл" can easily tell us what the shop sells, while others like "Fudge House" and "Лазурит" just give us associations.

We have decided to study shop names through the example of Orsha and Edinburgh because Orsha is my native town and shopping in Edinburgh is a fantastic experience catering to all tastes, styles and budgets. There are lots of

designer stores from all over the world, including Louis Vuitton, Armani, Calvin Klein, Burberry and Hugo Boss.

The aim of the research is to find out the most commonly used shop signs in Edinburgh and Orsha and characterize them according to the main linguistic features.

Material and methods. While studying shop names as part of marketing and linguistic landscape in Edinburgh and Orsha we used the following methods: comparative analysis, generalization and classification.

Findings and their discussion. Names of shops attract people's attention. They have an important marketing effect. Any naming decision for a shop requires active involvement of sociolinguistic factors and marketing principles suitable to be used in that particular context. It gives a hint of what kind of shop it is, and the products that may be found there. They persuade customers to buy the products or services available at the stores displaying these signs. Sometimes the names of shops have catchy slogans which influence people. Such slogans as "Sale! All -50%" or "If you buy two things, the third is given as a present" attract customers and make them drop into the shop and buy products.

When people create naming units they use their native language to associate products or services with the corresponding shops. But sometimes it happens quite the opposite, they can easily be written in another language that is not used or fully understood by the audience. Here are some examples of Edinburgh shops: "Sisters" (ladies' wear), "Love it!" (ladies' wear), "The Tappit Hen" (jewellery shop) and Orsha shops: "Пятачок" (grocery store), "Буслік" (clothes for kids), "Ганна" (grocery store).

Likewise we pay attention to the fact that some names of shops reflect products they sell: "Fashion Products" (ladies' wear), "The Food & Flea Market" (grocery store), "Celtic Jewellery and Gemstones" (jewellery shop), "Вкус моды" (clothes), "БеларускіЛён" (drapery), "Кристалл" (jewellery shop).

In our research we focus our attention on characteristics of a shop name both in English and Russian context:
1) include acronyms;
2) use of unilingual and bi- or multilingual shop signs;
3) styles include hybrid forms and minimised forms.

The analysis enables us to assume that a wide range of methods in creating shop names is used:

1. Simple names of shops include one word which can be a noun or a pronoun: they are "ТВОЕ", "Milavitsa", "Сапфир", "ЛОЛА", "Родник", "Соседи" in Orsha and "Epitome", "Bonmarche", "Dimensions", "Aquila" in Edinburgh.

2. Compound names of shops are represented by two or more word constructions. We can focus on such shops names as "Corniche Ledies&Mens", "Runway Boutique", "The Edinburgh Wollen Mill", "River Island", "Perth Farmers' Market", "Royal Mile Whiskies" in Edinburgh and "Золотая мечта", "Вкус моды", "Эго-Арт", "Хорс Моторс", "Оранжевый жираф" in Orsha.

3. Shop names named after a person. We have turned our attention to "Dorothy Jack's Ladies Wear", "Anne-Marie's", "Victoria Beckham", "Miss Katie Cupcake", "W. Armstrong & Son" in Edinburgh and "У Виталика", "Анастасия", "Алеся", "Белоснежка" in Orsha.

4. Shop names may have unusual or untypical spelling to make it more visible and attract people's attention with its uniqueness and originality. A big number of names are written in capital letters, the examples are "ТВОЕ", "BELWEST", "ИВАСИ", "ЛОЛА", "МЕГАТОП", "ZIKO".

5. Shop names use other languages. This tendency is very popular in Orsha. It means that languages are no longer belonging to the domains of nationalism and culture. We have got through the interrogation among owners of shops about why they use other languages. They said that it is more popular nowadays and it attracts people from other countries: "Marko", "Mark Formelle", "Kari", "VESHALKA", "CELEBRITI" and others.

6. Shop names include a numeral and a noun: "5 элемент", "12 месяцев", "8 марта".

Conclusion. The analysis reveals the following similarities:

• unusual spelling doesn't occur very often in shop names in both cities;

• the number of artificially created shop names is practically equal in both cities;

• there are some shops that are named after people but the number of them is relatively small;

Shop names in Edinburgh and Orsha have the following differences**:**

• names of shops in Orsha are simple nouns, word combinations are also used but two or three-word constructions are more typical of Edinburgh;

• shop names comprising a numeral and a noun are likely to be seen in Orsha but not in Edinburgh.

• capital letters are used in shop names of Orsha only.

• English is the predominant language of the shop signs in Edinburgh. In Edinburgh we didn't spot any shop names that are written in other languages. Russian prevails in Orsha. But the research also shows that English is the preferable language after the national language. In Orsha shops are named in 3 different languages (Russian, English and Belarusian). As a result shop owners choose a certain language for their names of shops for certain profitable reasons.

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«THE LABOURS OF HERCULES»
BY AGATHA CHRISTIE AS ARTISTIC PHENOMENON

L. Matskevich
VSU named after P.M. Masherov, Vitebsk, Belarus

Agatha Christie is a classic of world detective fiction. Her works have interesting plots, arrangement of characters, subtle observations on the characteristics of the human character. Christie's creative work is the focus of literary critics' attention, but the work "The labours of Hercules" is not fully investigated, as the writer has derogated from many of the canons of detective works. The relevance of this work is due to the need for further in-depth study of the writer's style.

The purpose of this article is to determine the artistic specificity of Agatha Christie's work "Labours of Hercules".

Material and methods. The material for the study is the text of the work "The labours of Hercules", the comparative-typological, cultural-historical, descriptive methods are chosen as research methods.

Findings and their discussions. "The labours of Hercules" is an original work. Some literary critics call this work a novel, as Hercules Poirot is the link in the work, the author describes his actions and deeds. Other literary critics believe that "The labours of Hercules" is a series of novels. The twelve labours of Hercules are described in Agatha Christie's work, as in ancient Greek mythology. The novels in the framework of the work are named according to the myths. They are arranged in the same order as the classical myths about Hercules. The name of the main character, Hercule, is a French version of the ancient Greek Hercules' name. The ancient Greek character amazed everyone with physical strength, and Hercule Poirot surprises everyone with the power of his intelligence. Agatha Christie widely uses humor, irony and associative plan in her work. In the first novel "The Nemean lion" the writer compares the Nemean lion with the Pekingese on the basis of a distant resemblance. Agatha Christie uses a mythological plot to depict the ingenuity of people in difficult financial situations. The second novel "The Lernaean Hydra" is a transformation of the myth about the lernean hydra. With the help of the plot, the author emphasizes that gossip in human society can be compared with the multi-headed lernean hydra, because the gossip is constantly multiplying. The third novel relates to the ancient Greek myth about the persecution of the Arcadian Deer that ravaged fields, condemning people to hunger and poverty. In the novel of the English writer peculiar arcadian deer is dancer Karina Samushenko performed the role of the deer on stage. Interpreting the myth about The Erymanthian Boar, the author gives the description of Marrascaud, a dangerous criminal. Evil is much more inventive than good in this world, but evil can be defeated by observation, resourcefulness, physical strength and the power of

mind. Agatha Christie in the novel "The Augean Stables" compares the barnyard, sinking in the sewage, with the world of big politics. The author shows how the government looks like the Augean stables. She is optimistic about the eradication of this evil: the modern character, like Hercules, will save the modern Augean stables from dirt.

The novel "The Stymphalean birds" is interesting in its content, because it reveals not only human vices, but also comprehends the mentality of the British. As is known, in the mythology of Ancient Greece the stymphalean birds are bloodthirsty birds that have copper beaks, wings and claws. The birds attack people and animals. Their most important weapon is the feathers. The main character of this novel is a novice politician Harold Waring, who has decided to spend a vacation in the fictional state. Waring mets mother and daughter, Mrs. Wright and Mrs. Clayton at the hotel where he is staying. In fact, these women are criminals, extorting money, and in view of the attitude of Harold to two women who look like sinister birds, accomplices decide to use this fact against the politician. Hercule Poirot notices the strange behavior of the English and exposes them. Two suspicious women are just harmless people. Ignorance of the othe people's languages is the cause of trouble in the image of Agata Christie.

In the novel "The Cretan Bull" the writer manages to tell the original version of the story about unrequited love and insidious revenge with the help of a mythological story about the cretan bull. In the novel about the horses of Diomedes Christie successfully uses a metaphor, calling the people who distribute drugs the modern horses. The event line in the novel "The Girdle of Hippolyta" is built on the principle of metaphorical associations. Hercule Poirot investigates the theft of Rubens' painting associated with the disappearance of Canon King's daughter. In this novel the writer has very dynamic and witty story about the machinations and inventiveness of the smugglers. The novel "The Flock of Geryon" is also dynamic. Agatha Christie compares the spiritual pastor Dr. Andersen with the mythological three-headed Geryon. As is known, mythological Geryon lived on the island of Erythia, the headquarters of the "Flock" is near the sea, where fans of the sect gather to bypass the seclusion. In fact, they lose property and personal freedom.

A successful attempt to comprehend modernity with its acute social and moral problems is presented in the novel "The Capture of Cerberus". According to the plot of this novel, Hercule Poirot investigates the case of drug trafficking in a nightclub. The head of this club is a Russian emigrant Vera Korsakova. A favorite dog of Vera, Cerberus, is used as a hiding place. Knowledge of ancient Greek mythology helped to solve the crime. In the novel "The Apples of Hesperides" Hercule Poirot investigates the case of one of the world's largest financiers and a famous collector. The case concerns the loss of a valuable cup. It turns out that once the cup goes to the financier in an unjust way. In this novel, the writer portrays the manners of collectors. From Agatha Christie's point of view, collectors are people obsessed with the passion of acquisition,

ignoring the generally accepted rules of morality to take possession of their interest's subject.

Conclusion. The work of Agatha Christie "The labours of Hercules" is significantly different from her social and detective novels. "The labours of Hercules" have a novelistic composition. Myth acts both as an object and as an instrument of artistic interpretation. The phenomenal nature of this work at the thematic level is the author's reliance on timeless moral and ethical problems, and at the level of artistic form – in the parody transformation of mythological images and detective plot moves.

PRESENTATION OF FOLK COMIC TRADITIONS IN THE V. KOROTKEVICH'S NOVEL "CHRIST LANDED IN GORODNYA"

A. Morozov
VSU named after P.M. Masherov, Vitebsk, Belarus

V. Korotkevich's literary work is quite well researched in the Belarusian literary criticism. However, in our opinion, the influence of popular comic traditions on the writer's style has not been studied enough. Therefore, we believe that this study will be relevant for modern Belarusian literary criticism. Because our target was to explore the V. Korotkevich's style in terms of exposure to the popular comic traditions, This will give a more complete picture of the literary heritage of Vladimir Korotkevich.

Material and methods. As materials for the study served as the text of the Korotkevich's novel "Christ landed in Gorodnya". In the work we used comparative, cultural and historical methods, and analysis of a literary text too.

Findings and their discussion. Vladimir Korotkevitch talked about his novel "Christ landed in Gorodnya," that it is "not a comedy or tragedy, it is tragicomedy, laughter through tears" [2, p. 492]. Next to the tragic biblical image of Christ, which is an allusion to the Yuri Bratchik, author paints a no less tragic picture of the lives of ordinary Belarusian people of the XVI century. But, at the same time, the author also seeks to convey a kind of spirit of the times, the mentality of the person and the time corresponding to the features of the national perception of the world. Known researcher Vorobey describes the main character of the novel: "Yuri Bratchik embodies the image of the medieval man, active, restless, cheerful, playful and freedom, which is released from the fetters of religious dogma and is absorbed better ideological and aesthetic and spiritual acquisition that brought with them a new era. Despite all the adversities, Yuri Bratchik remains optimistic. He scoffs at the whole bone and moribund lives, as well as its people, rich and full life "[2 p. 492].

Copyright desire to dip deeper into the reader into the world of ancient Grodno and its suburbs, in the world of folk label medieval thought, requires the author appeals to folk traditions, folklore elements, referring to a living chronicle records. As we know, when you write a novel, Korotkevitch used materials chronicles and annals, biblical texts, excerpts from literary works and folk sayings, turned to allegory, the conventional imagery, irony, satire and humor. Vorobey pointed out that "the writer has developed a tradition in the work a carnival of literature, fruitfully used grotesque. The novel "Christ landed in Grodno" has absorbed the traditions and folk culture of laughter "[1, p. 180].

The work is strongly felt ironically grotesque humorous beginning, which arose from an awareness of the Belarusian medieval man the fullness of life, a sense of humor in their reality.

The author introduces us to stray thirteen actors who went to the big city in order to demonstrate their skills and possibly earn on it. A writer with a healthy folk humor describes the input of actors in the city: "It was, if you look, a real rabble: drinkers, to eat, to sleep in a strange loft when the owner is not home. We were comedians, rogues, imaginary, loafers, gluttons, mischievous, scoffers. Their faces were lean, respectable, devout mine - and it was absurd and ridiculous "[2, p. 66].

Clearly shown in the novel image of the Belarusian nobleman Bogdan Roskash. In the consciousness of the Belarusian people to work out a little derisive attitude toward the gentry class. Example of this exist in works of fiction: "Pinsk gentry" Vincent Dunin-Marcinkiewicz, "Pavlinka" Yanka Kupala. Korotkevitch here, too, is no exception. Bogdan Roskash not without self-irony says of himself: "My skin is not as rough and hidebound, like some out there guy in Polish or zhmoysk gentleman, so I followed the high of his plow cautiously, that thorn is not dug up" [2, p. 114]. The comic effect is achieved here by means of contrast: impoverished, but without losing the former honor Roskash fully aware his real position, but at the same time, conscious of their superiority over the other, as it belongs to a noble family. Hence, it turns comic mismatch of reality when Roskash "noble plowing his field. I was here in this fur hat and, as a gentleman should, with a sword at his side, while squeaking behind him "[2, p. 113]. Bogdan Roskash brings joy everywhere, wherever he appeared, he likes to drink and walk, this one is full of life energy, seeks to enjoy life. In this regard, we can recall a very colorful scene with homemade spree apostles when powerful Bogdan Roskash on outstretched arms brought already eight girls and not "any morel", and such, where "there is a hug."

Healthy folk humor permeated the entire book. Very vividly describes how to run away "lihodeys, skomoroshki, clowns unattractive" to Svisloch and by nobles from the farm near the village of heather, where they burned the house of the "stone woman". Comic scene the entrance of Christ and his apostles in Grodno, "and the people they had all that your heart desires, not holiness" [2, p. 66]. With a touch of humor and irony, the writer tells about the adventures

of their heroes. They dipped drunken oblivion Lazarus in the source where he sobered up. And in gratitude for a "resurrection" of Lazarus relatives treated Christ and his apostles and gives them another way. Travelers go further: "... And the road again. The full amount for the back. In the box Judas jingle of money, and, therefore, you can go far, far away. And before Ilyash running pig. One of the two hundred of Lazar's. Because Lazarus - packing. Pig is good, motley"[2, p. 209]. Since last booze travelers aching head. They smile of self-satisfaction, and notice that in gratitude for the resurrection of Lazarus they were treated well.

Comic looks and Grodno executioner. His image is ambiguous. On the one hand, it is representative of the terrible craft, whose hands make their sentences in the novel representatives of the church. He was obviously proud of his work: "I, my friend, a man I know, until recently, no one else. The work I have an ancient, honest, honorable. With all the great people, not to mention all the clever, the sign "[2, p. 86]. But, at the same time, he was not satisfied with the attitude of their victims to the case, which, as it seems to the cat, it makes perfect and it deserves appreciation. "But nothing I do not want you as a human gratitude. I - from the people to thank. Well, at least one would say: Now, brother, you're cool with me head demolished. Now I'm just over the moon. So no ... "[2, p. 87]. Such thoughts seem out of place that brings the comic element in the overall tragic image of a cat.

The greatest irony of the novel is aimed at ridiculing the servants of the church. In this respect it can be compared with "Gargantua and Pantagruel" Francois Rabelais, where the author aptly uses the tradition of folk humor, burlesque to expose the hypocrisy, lies and corruption of the church. Korotkevich by the main representatives of the clergy in the novel, Lotra, Bosyatsky personify evil and cruelty. Very revealing the hypocrisy of clergymen appears in the episode with the merchant of indulgences, which quietly speculating on the fact that for him to be a saint. "- Buy forgiveness. You can buy forgiveness, even for the fact that rape eleven thousand holy virgins - wholesale or retail, if you have enough power on it your that - from God ... " [2, p. 215].

Vladimir Korotkevitch praise a person who is exempt from the medieval hardened. In spite of all the troubles and trials of life, his character remains optimistic. He "is able to surprise and delight of life, rejoice and laugh. And this laughter is extremely varied and rich. Most often, it testifies to the health of human nature and at the same time the health of the people "[1, p. 190].

Conclusion. Thus, it is possible to assert unequivocally that V. Korotkevitch fruitfully used in the work of the carnival tradition of literature. His writing style has absorbed the traditions of folk culture. V. Korotkevitch fruitfully continued and developed a humorous-satirical direction in the Belarusian literature. A perfect example of this is his novel "Christ landed in Gorodnya".

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PERSPECTIVES OF POLITICAL NEOLOGISM DEVELOPMENT IN MODERN SOCIETY: THE RESULTS OF A SOCIOLOGICAL SURVEY

M. Naidenok
VSU named after P.M. Masherov, Vitebsk, Belarus

The political vocabulary is considered to be one of the most dynamic sides of the language system: some words, terms and neologisms come out of the active use and become archaisms. New lexical structures which haven't been used frequently in the discourse before replace them. The political vocabulary, the same as the language itself, is regularly improved and enriched with new language structures which appear because of the active political communication, media sources or propaganda (political propaganda and public speeches).

The aim of our study is to deepen the knowledge of modern political neologisms, to analyze their usage and functioning.

Material and methods. The material of our research is a group of political neologisms which arose in the political media discourse in 2015–2018. These neologisms are close to our today's realities of the world and they determine a new point of view on some political events that occurred within the last few years.

To complete the research we used such internet sites as http://ggeuniverse.forumotion.com/, http://hodgepodge.forumotion.com/. We carried out a sociolinguistic survey and asked seventy-three persons who belonged to different age groups.

To gain the mentioned aim we used the following *methods*: descriptive method, the method of critical study of scientific literature, the method of distribution, observation method, the method of comparison and contrast, the method of continuous sampling.

Findings and their discussion. The results of the questionnaire can be summarized as:
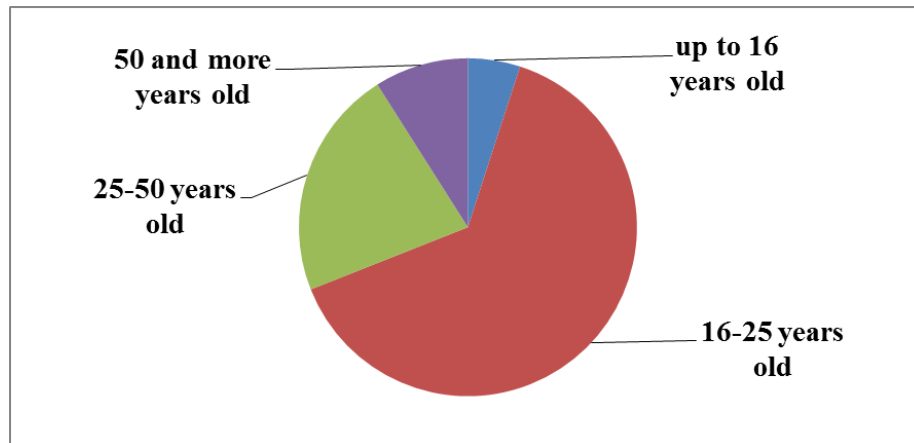
Figure 1. Age groups, %

The first question was *"Do you know the meaning of the word "Neologism?"* Here we have very good results. 74% (44 tested) answered *"yes"* on this question and only 26% (19 tested) answered *"no"*.
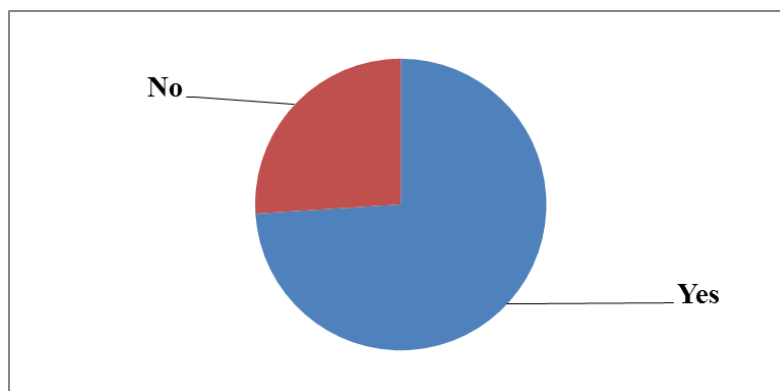
Figure 2. Results of the first question, %

Then we asked the next question *"Do you use neologisms in your daily life?"* From 54 tested who had answered "yes" on the previous question only 74% (49 tested) said *"yes, I do"* while 26% (14 tested) said *"no, I don't"*. We may certainly say that these results are very efficient. More than 50% from the people we asked understand the meaning of neologisms and use them in their speech.
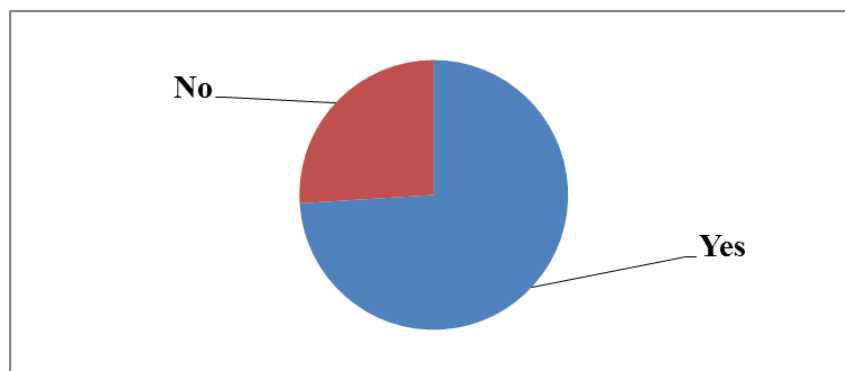
Figure 3. Results of the second question, %

The next question was *"Do you understand the notion of the following words? A) Trumpism (often meaning the exact opposite of the dictionary meaning), B) Alternative facts (lies), C) Brexit (after the referendum held on 23rd June 2016, the fact that the United Kingdom voted to leave the European Union), D) Trumpology (the studies of unpredictable politicians and their behavior), E) Buyer's remorse (a feeling of regret after you have made a big decision with serious consequences that you think may have been the wrong decision)?"* We have chosen these lexical units because they illustrate current political ideas and events. The findings are the following: A) 36% (26 tested) answered *"yes"* and 64% (47 tested) answered *"no"*; B) 84% (61 tested) *"yes"*, 16% (12 tested) *"no"*; C) 93% (68 tested) *"yes"*, 7% percent (5 tested) *"no"*; D) 18% (13 tested) *"yes"*, 82% (60 tested) *"no"*; E) 13% (11 tested) *"yes"*, 87% (64 tested) *"no"*.

Overall, our findings show that the most popular word is "Brexit". And that's not surprising. This word was massively used by politicians and media sources. That is why many people practice it everywhere. Then comes the word "alternative facts". More than 50% know this word and use it. We think that the results are so high because of the fact that we used American sources and in the USA this word is widely spread in many TV-shows and newspapers. Such words as "trumpism", "trumpology", and "buyer's remorse" gathered less than 50%. This indicates that they are not very popular. Still we don't find anything unexpected here. Those words were not used by authoritarian politicians or published in different newspapers. Some of them also imply negative meaning and it's not politically correct to use them frequently. Still there are people who use them and consequently they may become popular.

The final question of our survey was *"Should words like these be included into dictionaries and used in the life?"* 58% (42 tested) answered *"yes"* and 42% (31 tested) answered *"no"*. We may see that the number of those who appreciate neologisms and find them useful and necessary is higher than the number of those who do not think about these words as of something important. And this fact proves that these neologisms have a significant role in modern society. Though today they may not be used frequently, but they are still essential.
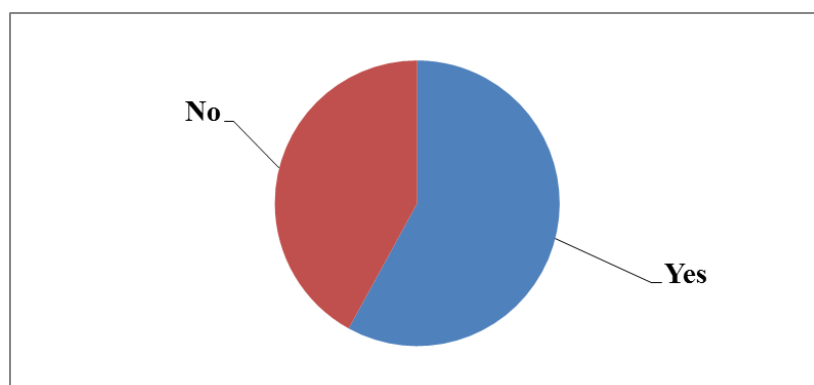
Figure 4. Results of the final question, %

Conclusion. To sum up, it could be stated that the major idea that we've learned from our sociological survey is that new political words are well-known and used by people. That is why they play a significant role in our society. People continue creating and using political neologisms as a reflection to the newest political events and issues. Political neologisms have perspectives for their further development and study. Specifically, the study revealed that political neologisms imply specific pragmatic characteristics and are used for various purposes.

PECULIARITIES OF TRANSLATION OF PROPER NAMES FROM ENGLISH INTO RUSSIAN (THROUGH THE EXAMPLE OF 'HARRY POTTER' BY J.K. ROWLING)

K. Nenyuk
VSU named after P.M. Masherov, Vitebsk, Belarus

The translation of a literary work is very important, as it determines the fate of a translated work and it influences the reader's focus on the book.

The relevance of the study is related to the fact that the problem of translation of proper names has always existed and nowadays there is no one specific means which can be used by translators.

The purpose of the study is to analyze the peculiarities of translation of proper names from English into Russian through the example of 'Harry Potter' by J.K. Rowling.

Material and methods. The series of book about 'Harry Potter' by J.K. Rowling was used as a material for this work. The methods were the following: the comparative method, the research method, the analysis of the scientific textbooks.

Findings and their discussion. The translation of a literary text is based on the laws of general theory of translation, that's why while translating, a translator resorts to traditional translation methods, such as: transliteration, transcription, loan translation, the principle of sonority, semantic translation, and the combination of different translation transformations. However, while translating a literary text, a translator focuses on the release of aesthetic information and, consequently, a translator must make a translation solution which fits in with the spirit of a literary work. A translator aims to depict content-related, expressive, and aesthetic value of the original literary work and to archive equal with the original text impact on a foreign reader.

The translation of the books by J.K. Rowling about Harry Potter, carried out by two different publishing houses (ROSMAN (Oransky, Litvinova and Babkova were the translators) and Makhaon (Maria Spivak was the translator) was used as a material of this study. The fact is that there are a lot of

charactonyms in 'Harry Potter' which added hurdles during the translation of these books. The translation solutions made by the translators of ROSMAN and Makhaon were stipulated by different factors.

Thus, the name of the Potions Master Severus Snape was translated into Russian in two ways: ROSMAN translated it as *Северус Снегг* and Makhaon translated it as *Злодеус Злей*. The name *Severus* sounds quite similar to an English word 'severe' and the surname *Snape* sounds like 'snake' which is metaphorical as Severus Snape is a dean of Slytherin – a house which symbol is a snake. Also a character himself is an unfriendly and misanthropic person. Obviously, the translators of ROSMAN decided to preserve this word play and went in for semantic translation. ROSMAN translated *Severus Snape* into Russian as *Северус Снегг* as the word *Снегг* is strongly associated with a word 'снег' (snow) and snow is cold as Severus Snape is. As for Makhaon, the translation solution of Maria Spivak can be explained by the fact that in first books Severus Snape is shown as a rugged and morose person and it was transpired that Snape was somehow related to the main villain of the books – Lord Voldemort so he seemed to be a bad person, too. The name *Злодеус Злей* is strongly associated with the word 'зло' (evil). However, this translation solution was not a successful one because in the last book, Harry Potter and the Deathly Hallows, Severus Snape turned out to be a spy and he was doing his best to help magical society to get rid of Voldemort. So, the name *Злодеус Злей* doesn't fit this character and, moreover, it misinforms readers, and that's why while translating the last book Maria Spivak found herself in the hot seat.

The name of a school coach *Rolanda Hooch* was also translated in two different ways and it made the translators to rack their brains as a word 'hooch' means 'самогон; алкогольный напиток» which is quite confusing as Rolanda Hooch was portrayed in books like 'she had short, grey hair and yellow eyes like a hawk' [1, p. 109] and not a word about alcohol. Nevertheless, Maria Spivak translated *Rolanda Hooch* as *Роланда Самогони*. Igor Oransky who translated the first book, made other translation solution: the word 'hooch' can be a slang and can be translated as 'каверза; выкрутас' so he translated her name as *Роланда Трюк*, that vividly hints at her profession and personality, unlike the translation of Maria Spivak.

Students of any house can make use of *the Room of Requirement* which can be translated in Russian as 'необходимая, нужная комната'. The translators of both publishing houses managed to convey the meaning of this name: Oransky translated it as *Выручай-комната* that agrees with the original as this room appears in a situation when a student *really* needs this room. Maria Spivak translated it as *Кстати-комната*. Therefore, both translators went in for semantic translation.

After analyzing the translation of 'Harry Potter' carried out two publishing houses (ROSMAN and Makhaon), the following conclusions were made. The theory of translation numbers plenty of ways to translate proper nouns:

transliteration, transcription, loan translation, the principle of sonority, semantic translation, and the combination of different translation transformations. Proper nouns are cross-language and intercultural borrowing objects as they contain a national element in their semantic core. Gaps in the knowledge of translators can lead to mistakes and inaccuracies related to the translation of proper names. After analyzing the translation of 'Harry Potter' carried out by two publishing houses (ROSMAN and Makhaon), it was concluded that one of the main peculiarities of translation of proper names of the book was caused by the fact that the series was being published at intervals and a true meaning of some proper names became obvious only in the last books which led to mistakes and inaccuracies.

Conclusion. Thus, the choice of language means influences the quality of the translation of a literary text and the fate of the translated work, as the translation of ROSMAN is still very popular, unlike the translation of Makhaon. When choosing a translation, readers prefer ROSMAN, as they consider its translation to be more correct and aesthetically successful than the translation of Makhaon.

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SCHOOL: THE HISTORY OF THE WORD
AND THE CONCEPTS IN RUSSIAN AND ENGLISH

M. Nikolayenko
VSU named after P.M. Masherov, Vitebsk, Belarus

The words of the native language that denote the realities of the world, as a rule, wereborrowed, remembered and used by speakers as given, without deep understanding of their content. These ordinary words include the word school, known to every person since early childhood. And at the same time, we are faced with a situation when students demonstrate a noticeable difficulty in answering the question: "What does the word school mean?"

The purpose of study work is the attempt to determine the origins of the word school, the ways of development and expansion of its meanings both in the Russian and English languages.

The relevance of the topic is determined by the need to equip the students as future teachers with new knowledge about the sphere of their future activities, which should lead to a more conscious perception of their professional tasks and, as a result, to an improvement in the quality of pedagogical activity.

Material and methods. The material for the study was the data of various reference books and dictionaries, as well as the results of studying the

knowledge of the students of the Faculty of Philology on the subject of the research, that were determined by means of an anonymous survey.

First-year students of the Faculty of Philology were asked to answer two questions: 1. What does the word "school" mean in modern Russian? 2. How many and what meanings does this word have in modern Russian and English? Thesurveyinvolved 40 students. As it turned out, the answers to the first question did not differ in accuracy and uniformity. Only 5 respondents gave the adequate answers close to the basic meaning of the concept: a school is an educational institution, a place where people are taught to read and write, a place where they learn something new. The answers of other students were based more on the associations arising in connection with this word, and not on the initial values: the school is homework, it is the second home, it is the favorite class teacher, it is the friends. The answers to the second question were even less sure. 24 questionnaires generally were not filled. Such results suggest the need for detailed study with students of basic concepts that operate in the field of professional activity. This problem is even more significant when it comes to training specialists in the field of foreign languages, since the meaning of the same words in different languages is in most cases different.

Findings and their discussion. The modern Russian noun "school" and the English "school" go back to the same source – Latin. In Latin *scholae* (*схо́ла*) – 'college'. Some linguists (and teachers) suggest that the first meanings of this word in ancient Greek were "free time", "leisure", "idleness", "rest", "delay".

However, in the dictionaries of the modern Greek language, similar meanings for this word are absent. In ancient Russian texts the noun school is fixed from the XIV century. In the dictionary by I.I. Sreznevsky this word is given only with one meaning – "school": «*Маетъ присягати передъ школою у дверей*» – '*Должен давать присягу перед школьной дверью*'(From the letter dated 1388). In the "New Dictionary of the Russian Language" by T.F. Efremova (2001) there have been seven meanings of the word. However, the compiler of the "New Dictionary" in one sense unites such notions as a) an educational institution that provides general education and upbringing; b) the building that houses such an institution; c) the team of one such institution. In our opinion, three different values should be considered here. With this and other clarifications, the word "school" has already 15 meanings (or co-meanings)in modern Russian.

For the students who learn a foreign language these conceptual differences in the meanings are significant, since they can potentially be implemented in different lexical units.

Consider the 10 most typical (and undisputed) meanings of the word "school" from those presented in the "New Dictionary of the Russian Language" by T.F. Efremova, comparing them with the appropriate contextual implementation in the English language.

1. Educational institution that provides general education and upbringing:

In Russian: Задача <u>школы</u> – учить и воспитывать.

In English: The task of the <u>school</u> is to teach and educate.

2. The building that houses the school of this kind.

In Russian: Первого сентября <u>школа</u> наполнилась детскими голосами.

In English: On September 1, the <u>school</u> was filled with children's voices.

3. The team of one such institution, its students and teachers.

In Russian: Вся <u>школа</u> пришла поздравить своих выпускников.

In English: The whole <u>school</u> came to congratulate their graduates.

4. The education system, a set of institutions to obtain it.

In Russian: Белорусская <u>школа</u> развивается, сохраняя свои лучшие традиции.

In English: The Belarusian <u>school</u> is developing, keeping its best traditions.

5. Special educational institution where professional knowledge and qualifications are given.

In Russian: Белорусская профессиональная <u>школа</u> дает молодым людям путевку в самостоятельную жизнь.

In English: Belarusian vocational school gives young people a ticket to an independent life.

6. Acquisition of experience, training, that gives such experience, training.

In Russian: Армия – <u>школа</u> мужества для юношей, вступающих в жизнь.

In English: The army is a <u>school</u> of courage for young men entering life.

7. The list of required exercises (in sports).

In Russian: В первый день чемпионата фигуристки соревновались в выполнении <u>школы</u>.

In English: On the first day of the championship skaters competed in the performance of the school.

8. Education, learning in the spirit of any principles.

In Russian: Университет – хорошая <u>школа</u> воспитания высокой нравственности молодых людей.

In English: University is a good <u>school</u> of education of high morality of young people.

9. Scientific, literary or artistic direction.

In Russian: Витебская <u>школа</u> живописи известна во всем мире.

In English: Vitebsk painting <u>school</u> is known world wide.

10. A group of students, like-minded people, followers of someone.

In Russian: Молодые ученые – <u>школа</u> академика В.В. Виноградова – отстаивают принципы традиционной лингвистики.

In English: Young scientists – the <u>school</u> of Academician V. Vinogradov – uphold the principles of traditional linguistics.

Conclusion. Thus, for all the general meanings of the word "school" in Russian that interest us, English also uses one lexical unit – "school". And this means that the word under study has come to different languages from one

source. It's maintained its lexical stability for a long time. And with the appearance of new meanings in one of the languages, it is likely to develop a traditional lexical unit in the former language to denote a new meaning.

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ART AND THE ARTIST IN S. MAUGHAM'S NOVEL "THE MOON AND SIXPENCE"

A. Savenok
VSU named after P.M. Masherov, Vitebsk, Belarus

The theme of art and an artist was the object of deep reflection in different historical and literary periods. It belongs to the so-called eternal themes. The beginning of the twentieth century in literature was marked by the development of such a literary school as modernism. It peaked in the twenties of the last century in the west of Europe and in America. Modernism arose under the influence of Nietzsche, Jung and Schopenhauer's philosophical ideas. Their teachings formed the basis of aesthetic concepts of the new century, and the problem of art and the artist in literature understanding has been gained an impetus. Modernists extol individual artistic vision of the world, and the object of special interest for them is the nature of the creative process, the artist's self-identification and patterns in their perception and interpretation of art, its nature and functions. In English literature, the theme of art and the artist is among the dominant ones. Many writers, as the main character in their works, often choose writers, artists or representatives of other art-related professions.

Urgency and aim of the research. The topic of the artist and art requires profound study of the influence of art on creative personalities and their interaction with society. The aim of this study is to study the peculiarities of the interpretation of the theme "artist and creativity" in the novel by S. Maugham "The Moon and Sixpence". The article deals with the problem of art and the artist through the analysis of the image of the main character in the novel.

Material and methods. The basis for the research was the novel "The Moon and Sixpence" by S. Maugham, in particular its plot, the system of characters and the main character's image. Here biographical, comparative-typological and descriptive methods are used. Biographical and comparative-typological methods of scientific research allowed to identify the main elements

of the theme of art and the artist revelation, on the material of the novel's "The Moon and Sixpence" original text, where it is important to compare the life of the main character with the life of French artist Paul Gauguin.

Findings and their discussion. The theme of art and the artist in English literature is traditionally interpreted as a relationship between creative nature and society. It emphasizes the protest of the artist, the hostility of the environment towards the creator, the tension of his fate and attempts to protect creative independence. The conflict between the artist and society was often described by the authors of works based on real events from the life of impressionist and post-impressionist artists, for example: Cezanne in "Creativity" by Zola, Gauguin in the novel "The Moon and Sixpence" by S. Maugham, Van Gogh in Stone's "Lust for Life". In all these works, the fate of real artists was borrowed in some way and the main character here are endowed with traits of real person [1, p. 74].

The novel "The Moon and Sixpence" takes place in the early twentieth century, when Charles Strickland, a stockbroker, leaves his old life and begins to paint. His life is changing dramatically. Contrary to the conjectures of his wife, there is no place for women in new life. Strickland uses the best friend's wife, Blanche, as a free sitter, making her a victim of true art and great genius. Art insensibly "kills" human in Strickland. Losing the ability and desire to live by European society rules and standards, he moves to Tahiti. On this island, Strickland spends his last years and marries the native Ata. A few years later, he became ill with leprosy, but the desire to create was still his life priority. Even when he was blind, he continued to paint on the walls of his house. The doctor who came to visit the patient was the only the witness to the artist's last work. Dying, Strickland, ordered Ata to burn the house after his death and she did it. The doctor was extremely shocked by the work of the dying artist. He described it as something passionate and great, as the work of a man who has comprehended the beauty of nature and transferred its frightening and at the same time beautiful essence to the house walls. In other words, painting for the doctor became a hymn to life and its comprehension.

The novel "The Moon and Sixpence" by S. Maugham can be described as "the tragic story of a genius artist, with a mysterious personality"[2, p. 116]. The inspiration for this story came from Paul Gauguin, a French artist and the founder of primitivism in art. Throughout the novel, the story of Charles Strickland's life unobtrusively repeats the fate of the French post-impressionist. However, Maugham does not set himself the task of a simple biography, he strives for the ideal creator showing, who feels beauty and is eager to express it. We see a person indifferent to fame and neglecting public opinion. Sometimes in Strickland's character and actions, evens some immorality can be noticed. The personality of the artist, according to Maugham, is revealed precisely in art. Only by abstracting from civilization on the island of Tahiti, Strickland acquires complete freedom and creates his best work, exposing his individuality.

In the novel "The moon Sixpence", the theme of man and art is revealed deeply and comprehensively. The character of Charles Strickland, a stockbroker

who abandoned everything in life to devote himself to creativity and experience inner freedom, is a prototype of what art actually is and what the artist must do for its comprehension.

It is also should be noticed that the main difference between Strickland and his prototype is that Gauguin is a French artist, and Maugham's character is an Englishman. In the nineteenth and twentieth centuries in England were good writers, but not artists. The French, Germans, Spaniards and Russians painted much better. Such an insignificant detail brings to the absurd the intention of the main character to become an artist and reinforces the main theme of the novel and its problems: what is more important for a person - wealth or a fulfilled dream, public opinion or inner harmony? These questions are fundamental to the development of the topic of art and artist by the writer. S. Maugham, narrating about Charles Strickland, gives an obvious, but no less ingenious answer to posed questions: follow your dreams despite everything, because if a person is unhappy, then even a life in prosperity cannot make feel comfortable. At the same time, the problems that Gauguin confronted and the problems Strickland faced are universal. They are characteristic of the creative personality of any nationality and any historical time.

The idea of the novel, the semantic opposition in the artist and art theme disclosure are emphasized in the title of the novel: "moon" and "sixpence" are peculiar antonyms that emphasize the eternal opposition of the material and spiritual, true and false, affecting the human soul and leaving it indifferent.

Conclusion. On the bases of the analysis of the theme of the artist and art in the novel "The Moon and Sixpence" by Somerset Maugham, it can be argued that the artist is a person of a special turn of mind, dramatic, even tragic fate. The novel clearly traces the transformation of Charles Strickland, a family man with a strong position in society as a lonely artist who refused everything for art and was obliged to destroy his main masterpiece. Art, in the interpretation of the writer, is omnipotent and merciless towards the creator.

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CHALLENGES OF LEARNING ENGLISH

V. Shutaya
Orsha college named after P.M. Masherov, Orsha, Belarus

The English language is one of the most popular languages to learn, perhaps the most spoken language around the world is English, and many people choose to learn the language simply to place them in a better position to secure work, or communicate more effectively with more people from around the globe. English might be a popular language to learn, but this doesn't necessarily

mean it is a simple language to master, there are many challenges people face when learning English and if you are aware of these beforehand you stand a much greater chance of mastering the language.

The aim of our article is to investigate the main difficulties in learning English and reasons for various lexical, grammatical and phonetic problems and some ways of their solution.

Material and methods. While working at the article we used the following methods: analysis of various sources of information: books, publications in magazines; the compilation of the information; a survey among four-year students who study English as a minor subject.

Findings and their discussion. Students can have various difficulties and problems in learning English. We carried out a survey among four-year students of our college. They were given some questions about difficulties in learning the English language. In accordance with the results of the survey we single out the following problem areas: lexical, grammatical and phonetic.

Undoubtedly, each language is based on these three main aspects, which cause difficulties common for pre-intermediate learners. The research shows that the least problematic area is phonetics. Only 18% of the surveyed find it difficult to imitate native speakers. On the one hand, it may seem astonishing as English pronunciation is rather complicated. For a Russian learner it sounds awkward that some letters are pronounced differently depending on their position in a word, silent letters are not pronounced at all without taking into account the sounds uncommon for the Russian language (for instance, the interdental sounds $[\theta]$ and $[\eth]$, the nasal $[\eta]$, etc.). On the other hand, this aspect is the least significant on account of the fact that people have their own accents and peculiarities of pronunciation which don't affect understanding.

The 57% of the respondents identified their lexical problems as the most significant ones. Also J. Haycraft states that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed" [2, p. 36]. When you start learning English you have to face the problem of memorizing long lists of vocabulary, which don't guarantee you perfect speaking skills. Looking deep into the essence of the lexical aspect, we have to take into account some phenomena that should be distinguished if the speaker wants to convey the idea. Firstly, polysemy – the existence of several meanings in a single word (head: of a person, of a pin, of an organization). Secondly, homonymy – one of group of words pronounced or spelt in the same way but having different meanings (e.g. a file: used to put papers in or a tool). Thirdly, synonymy – the existence of the same or another word in the same language with close meanings. For instance, words "fat" and "plump", despite being synonyms they can't be used interchangeably because "plump" has a positive connotation whereas "fat" – a negative one [3]. Some respondents also point out some difficulties in finding the Russian equivalents to the English ones that sound Russianlike (for instance,

sympathize – сочувствовать, but not – симпатизировать, accurate – точный, but not—аккуратный, clay – глина, but not клей).

Effective language learning is impossible without its basis, that is grammar, which our survey proves. 72% of the respondents find it difficult to express their point of view without a good knowledge of grammar. It is well-known that English is a language of exceptions. Moreover, it is untypical for Russian learners to learn a foreign language on the basis of their native one as there are a lot of differences in the grammatical system of both languages from differences in the number of tenses to the parts of speech which have no analogues in Russian. Grammar is a significant and indispensable part of the language. Grammar is not only a set of rules but also a combination of constructions with vocabulary which allow to convey the accurate idea in order to be understood.

Learning a foreign language is a challenging and difficult task which takes much of your time and effort. That's why we recommend you the following tips to make the process easier.

Firstly, pronunciation is rather a fragile skill that can only be developed during a long-term conversational practice. You should start from the right articulation because of it depends the clarity of pronunciation, train yourself to correct the tongue and lips position not to sound in a Russian way. Work on the stress, which will help you to avoid misunderstanding. And never forget about intonation. The speech of an Englishman is characterized by an expressive manner, if you want to speak English without accent, you should pay attention to your intonation.

Secondary, it is well-known that the quickest way to English speaking is through communication with native speakers. But not everybody lives in a learning environment. What shall we do? The answer is simple. You have to make up native conditions such as "English people and things" that will allow you to find yourself in a foreign country and feel and sound Englishlike. Watching movies, listening to songs, programmes, TV shows give you more chances to improve your listening and speaking skills. Another advantage of watching films is learning slang and colloquial words which aren't always found in dictionaries but can be understood only in context.

Thirdly, grammar can be improved not only with the help of exersices, but while practising.You should start from the very beginning and gradually enlarge your knowledge: the article, the noun, the pronoun, the word order and etc. You should keep practising grammar all the time: read books, watch short and not complicated movies (with or without subtitle) and speak English. The more you speak English, the more confident you become.

We have discussed the main difficulties in learning English whereas there are much more problems in reality. Each person has his own challenges in addition to those we have mentioned.

Conclusion. In the course of our study, we confirm that the grammatical aspect of the English language causes the greatest difficulties during its

studying. Because it is the most difficult aspect, the way you form your speech influences other people's understanding or misunderstanding you. You should use the right constructions if you want to be understood. In this way the grammatical aspect is closely connected with the lexical one. Vocabulary is not only learning words but also using them in the right style and context. That's why only a combination of mastering all the aspects will allow you to have a good knowledge of the language.

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INFLUENCE OF TRANSLATOR'S PERSONALITY ON THE CNOICE OF TRANSLATION STRATEGY AND TRANSFORMATIONS (BASED ON «*THE WORLD ACCORDING TO CLARKSON*» BY JEREMY CLARKSON)

I. Skokov
Lugansk State Academy of Culture and Arts named after M. Matusovskiy, Lugansk

This article discusses the main aspects of a translator's linguistic identity, as well as their influence on the translator's choice for certain methods of translation. Works of modern scientists involved in research in this directionare analyzed.

Comparative analysis of the original and translated versions of texts of different stylistic affiliation is particularly relevant in the present period, primarily due to the significant intensification of various kinds of intercultural contacts.

The purpose is to identify and interpret the main translation transformations carried out by the translator during the work on the translation of the original English-language work, as well as to establish the main differences between the original and the translating languages, which adversely affected the integrity and accuracy of the translation.

Material and methods. A comparative analysis of the work of Jeremy Clarkson «The World According to Clarkson» and the translation of this work by Igor Maltsev is done. The main translational transformations which are used the translator during the work with the text of the original are revealed. The variants of translation strategies, as well as the main differences between the source language and the translating language, negatively affecting the integrity and accuracy of the translation, are considered.

Today, the study of translational transformations undoubtedly attracts the attention of many foreign and domestic linguistic scientists. Nowadays, the study of word-formation structure is of particular importance in the field of philology, linguistics, it is essential for studying and comparing the structures of various languages. It is also one of the fundamental elements of studying translation strategies and methods of translation, helping to optimize the translation process and at the same time allows us to enrich the knowledge about the translation theory. It is particularly useful for facilitating the translation of literary texts into other languages, since the disclosure of connotative meanings and the preservation in the text of the translation helps to recreate the author's pragmatics, allows us to show the creative potential of various languages, as well as to track the successful findings of translators. It helps us to find those translation techniques that meet the set pragmatic tasks and subsequently to use that gained experience, processing the received information and, in future, including them in a whole list of educational programs, manuals, methodical publications and educational and methodological complexes not only in the Russian-speaking space, but also abroad.

Findings and their discussion. For this research, was chosen the text of «The World According to Clarkson», written by the eminent British TV–show host, journalist and writer Jeremy Clarkson, and the translation of his work written by the notorious Russian writer, journalist, editor and publicist Igor Valentinovich Maltsev. In the process of comparing and analyzing of the text by I.V. Maltsev is appeared that in his works there are numerous, sometimes even contradictory, translation transformations. Taking into account the extraordinary fame of the author of the original text throughout the world, consideration of his work through the prism of research of the work of an interpreter can potentially be of great benefit in the field of international communication, especially in the period of increasing globalization of society.

At this stage of international communication, the «stumbling–stone» that is most relevant in this field of activity is displayed: the translator needs to convey the message and the idea put by the author into the text of the original work as accurately as possible, so as to convey the author meanings in his translation, to convey the author's intention to the final recipient of the work – a reader. At this point the difficulties start to appear in the work of translator, because quite often he/she has to try new strategies and show remarkable ingenuity. In addition, there are some important factors influencing the translator's choice of methods of describing the surrounding reality thatare used by the author of the original text. Those factors could be linguistic, sociolinguistic and extralinguistic ones; the brightest among them are: linguistic personality, character, gender, age, social status, education and knowledge level.These factors also influence the translator's and writer's style in general. Particular emphasis was placed on the factor of the language personality of Jeremy Clarkson and Igor Maltsev. We are faced with the task of exploring the peculiarities of a translator's use of various

transformations under the influence of his personality, which will be considered exclusively within the framework of the aforementioned literary work.

In the process of working with the chosen texts, we've studied the approaches of many representatives of modern science who are engaged in research of translational transformations, such as: V.N. Nemchenko, N.V. Komissarov, R.K. Minyar–Beloruchev, Y.I. Rezker, L.S. Barkhudarov, I.S. Toroptsev, N.V. Vasilyeva, V.G. Gak, A.V. Fedorov, E.A. Trubinova, T.A. Kazakova and many others.

Conclusion. The practical significance of this research lies in the potential use of its resultsin the process of teaching various academic disciplines and school subjects intended for students of language specialties, such as practical course in English or another foreign language, lexicology, linguistic studies, introduction to specialty, theory and practice of translation, actual problems of translation. Also, the results of this research can be useful in the field of intercultural and interethnic communications, as it could reveal new strategies of translation of such types of linguistic and cultural units as realities, idioms, stable and catchy phrases and expressions, slang and assimilated foreign language nominations. An in-depth study of those units could be useful for raising the level of familiarization of translators and linguists with the cultural environment of a country of their target language.

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SEMANTIC-STYLISTIC CORRELATION BETWEEN THE NOMINATIONS OF THE SOURCE LANGUAGE AND THE BORROWING LANGUAGE

S. Stepanenko
VSU named after P.M. Masherov, Vitebsk, Belarus

The appearance of a new meaning for a word in the vocabulary of the Modern German Language can be judged only by comparing vocabulary entries

in chronologically distant and modern lexicographical publications. Even if the meaning wasn't recorded earlier or was fixed later it is not a sufficient warranty for stating the novelty of meaning.

The aim of the research is the analysis of the lexical units of German that were borrowed from the Romance languages in the aspect of diachrony and synchronism.

The significance of the given research is to study the nature of the German language borrowings of foreign lexemes that is one of the ways to enrich the vocabulary of the receiving language.

Material and methods. The material for the study was lexical items (nouns) of Romance origin extracted by continuous sampling method from the following dictionaries: «Etymologisches Wцrterbuch des Deutschen» (1989–1995), «Das Herkunftswцrterbuch. Etymologie der deutschen Sprache» (2007), «Wцrterbuch der deutschen Gegenwartssprache» (1952–1977) and «Das Bedeutungswцrterbuch» (2002).

The following methods were used during our research: comparative-analytical, comparative-etymological, comparative analysis and searching method when working with dictionaries.

Findings and their discussion. We should analyse some borrowings from the Latin languages in the aspect of their semantic changes when entering into one of the Germanic languages.

The research will be carried out in several stages: first of all, we will consider the representation of a word in Etymological dictionaries; secondly, we will fix the representation of this word in modern thesaurus; thirdly, we will compare the meanings of the borrowed word in the German vocabulary with its semantics and stylistic characteristic in the source language.

We will fix the representation of the word '*die Dame*' of Romance origin in two Etymological dictionaries. In «Etymologisches Wцrterbuch des Deutschen» the word '*die Dame*' is represented in the following way *«Ende des 16. Jhs. wird frz. dame ins Dt. entlehnt, ist in der Bedeutung 'geliebte Frau, Herrin'»* [4]. The origin of this word is represented in «Das Herkunftswцrterbuch. Etymologie der deutschen Sprache» (2007) as «das Wort wurde Ende des 16. Jh. aus frz. *dame* „Herrin, Frau, Ehefrau" entlehnt» [2, c. 133].

We will consider the representation of this word of Romance origin in two thesauri. «Wцrterbuch der deutschen Gegenwartssprache» (1952–1977) interprets the word '*die Dame*' as: «1. A) Bezeichnung fьr eine weibliche Person; b) weibliche Person, die ein gepflegtes ДиЯeres, kultiviertes Benehmen und Bildung hat; 2. (Ьbertragen) Кцnigin (Schach), dritthцchste Karte mit dem Bild einer Dame, die den Zahlenwert 3 hat (Kartenspiel)» [3].

In «Das Bedeutungswцrterbuch» (2002) the word '*die Dame*' has the following meanings: «1. Gebildete, gepflegte Frau; 2. Brettspiel, bei dem die Spielenden versuchen, mцglichst alle Spielsteine des Gegners zu schlagen oder

durch EinschlieЯen zugunfдhig zu machen; 3. Fьr den Angriff stдrkste Figur im Schachspiel; 4. In der Rangfolge an dritter Stelle stehende Spielkarte» [1, c. 248].

It should be noted that in «Das Bedeutungswцrterbuch» (2002) of the German language, which reflects more reasonable modern semantic processes.

As a result of comparing the original meanings of the borrowings in the German vocabulary with its 'fate' in modern German, the following was found out: the word *'die Dame'* of Romance origin in the German language had unimportant alterations. Its primary semantics wasn't changed and it was expanded throughout the history of the language.

We will consider the representation of the word *'der Teint'* in two Etymological dictionaries. The origin of the word *'der Teint'* in «Etymologisches Wцrterbuch des Deutschen» is interpreted as «Entlehnung (1. Hдlfte 18. Jh.) von gleichbed. frz. *teint*, afrz. 'Farbe, Anstrich', Substantivierung von afrz. *teint* Adj. 'verfдrbt, blaЯ, finster'» [4]. In «Das Herkunftswцrterbuch. Etymologie der deutschen Sprache» (2007) there is not the lexical entry of the origin of this word.

We will fix the representation of this word in two thesauri. In «Wцrterbuch der deutschen Gegenwartssprache» (1952 – 1977) the word *'der Teint'* has the following meaning: «1. Zustand und Farbe der Haut, bes. im Gesicht» [3]. In «Das Bedeutungswцrterbuch» (2002) *'der Teint'* is interpreted as: «1. Zustand und Farbe der Gesichtshaut» [1, c. 884].

Comparison of interpretations which are presented in two explanatory dictionaries shows monosemy of this nomination in different historical periods.

As a result of comparing the original meanings of the borrowings in the German vocabulary with its 'fate' in modern German, we found out the identical interpretation of this term, which has acquired more specific meaning in the course of time.

Conclusion. Thus, it can be concluded that The analyzed borrowings allow us to conclude that in German borrowing from Romance languages were insignificantly alteratered, they mainly retained the original semantics. In the process of language functioning some of them expanded its meaning.

As a result of a comparative analysis of the meanings of borrowed elements (in German vocabulary) with their semantics in the source languages, we identified the following peculiarities:

✓ fastening in the German vocabulary\lexis of the word borrowed from a language of the Romance group (a Romance language) preserving its basic meaning. E.g. this phenomenon can be observed in the word *'der Teint'*;

✓ broadening of the lexical semantics of the word of Romance origin in the vocabulary of the German language (in German vocabulary), for example: *die Dame*.

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LEXICAL PECULIARITIES OF ENGLISH BUSINESS TEXTS

M. Tarasevich
VSU named after P.M. Masherov, Vitebsk, Belarus

Nowadays the English language is commonly used during official communication all over the world. Texts and documents arrangement is an integral part of business interaction. These documents should correspond with prescriptive, communicative, aesthetic and ethic aspects of interaction. Therefore the texts should follow the language norms.

So the aim of the article is to investigate the lexical peculiarities most commonly used in modern business communication. While official communication the language should be comprehensible, succinct and clear.

Material and methods. We conducted our research on the bases of different legal and diplomatic documents, the information from the works of V.L. Naer, P. Tiersma and Ye. V. Borisova. The following methods were used: the analytic method, the method of stylistic analysis, the method of linguistic analysis.

Findings and their discussion. There are three main types of the English language: formal, informal and neutral, or semiformal. Informal one is used for daily communication in the bosom of a family and friends. Semiformal language is typical of professional interaction. Formal language is characteristic of official documents.

Official style is one of the bookish styles used in the legal sphere, the administrative and public scope, the sphere of business relations, etc. Official style is used for formal communication, such as communication with the public authorities, the relationship between different companies and enterprises, human contact with different organizations. Usually written language is used for official style. The main task of this style is to inform someone corresponding with the norms of the language. Fundamental characteristic features of this style are the following: 1. accurate and laconic texts; 2. non finite utterances;

3. imperativeness; 4. officiality; 5. a clear sequence of the material; 6. compliance with language norms [2, p. 54].

This style is chartarised by its own syntactic, grammatical and lexical distinctive features. Following the theme of our research we are going to examine the lexical ones. There can be distinguished some basic lexical peculiarities of the given style:

1. Special terms are used. Meanwhile, each type of official documents has its own specific terminology system. For instance:

*If any of the **provisions** of this Shop Owner **Agreement** is held by a court of **competent jurisdiction** to be **invalid** or **unenforceable** under any **applicable statute** or rule of law, it shall be replaced with the **valid provision** that most closely reflects the intent of the **Parties** and the remaining **provisions** shall continue **in full force and effect**.*

2. Borrowings, mainly from French and Latin, are used in business and legal documents. It is determined by Latin effect on formation of English legal system, that was supported by Roman Church, e.g.:

*A **voir dire** examination shall be conducted for the purpose of discovering any basis for challenge for cause and for the purpose of gaining knowledge to enable an intelligent exercise of peremptory challenges.*

The French language got its stable position after the norman conquest. The language made its contribution to English legal terminology, e.g.:

*The appointment of military **attachŭs** (military, air, naval, police **attachŭs** and their assistants) to the Republic of Azerbaijan is carried out through presentation of a Diplomatic Note to the State Protocol Department of the Ministry of Foreign Affairs of the Republic of Azerbaijan, requesting the consent to the appointment of a military attachŭ.*

3. To make the language more formal archaisms and obsolete words are used in legal documents. It makes texts more conservative. The usage of archaisms is caused by necessity to avoid undesirable modifiactions of lexical meanings of legal terms, e.g.:

*For the purposes of these Terms, "Intellectual Property Rights" means all patent rights, copyright rights, mask work rights, moral rights, rights of publicity, trademark, trade dress and service mark rights, goodwill, trade secret rights and other intellectual property rights as may now exist or **hereafter** come into existence, and all applications **therefore** and registrations, renewals and extensions **thereof**, under the laws of any state, country, territory or other jurisdiction.*

4. Different clichŭs are also peculiar to official documents. A clichŭ is a fixed expression that is used to make up business documents, e.g.:

***On behalf of** the Lithuanian people and on my own behalf, **I would like to extend sincere congratulations on your 80th birthday** and Japan's national holiday. I wish Your Imperial Majesty and the Imperial Family continued health, happiness and many moments of joy, and I **send my best wishes for** the peace and well-being of your country and its people.*

5. Official texts are also characterised by usage of abbreviations. Nevertheless, common and clear shortenings should be used, that are peculiar to each style, e.g.:

*Parts' leaving from warehouse shall be in accordance with the incoming order of each batch. The principle of **FIFO** shall be strictly carried out to protect the good condition of goods and materials*

Conclusion. Thus, each type of the text has specific charecteristics. English business texts should follow the norms of the language. There are a lot of distinctive features of this type of texts. There are some lexical peculiarities most commonly used in modern business communication: the use of special terms and various types of clichйs, the usage of borrowings, obsolete words and archaisms, the use of abbreviations specific to each type of documents. They make documents more formal and conservative.

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A MODERN INTERPRETATION OF THE IMAGE OF A VICTORIAN WOMAN

L. Yuchkovich
VSU named after P.M. Masherov, Vitebsk, Belarus

The study of British prose from the 60-s of 20th century to the present time allows us to conclude that for the contemporary authors particular interest provides the Victorian age. Along with that, many modern authors seek to reflect those aspects of the English life of the 21th century, which the Victorians themselves could not or did not want to write from an ethical point of view. To these authors belongs and Sarah Waters (1966), one of the most famous contemporary writer in Britain. Her third novel, "Fingersmith" was written in the genre of metafiction and published in 2002. Fiction in which the author self-consciously alludes to the artificiality or literariness of a work by parodying or departing from novelistic conventions and traditional narrative techniques is called metafiction [2].

The purpose of our study is to explore the image of the woman of the Victorian age from the point of view of the 21th century writer.

The relevance of this work is in the interest of interpreting the past from the standpoint of the modern literary process – postmodernism.

Material and methods. The material of the research is the novel 'Fingersmith' by Sarah Walters. The following methods were used: comparative, cultural-historical and contrastive

Findings and their discussion. When we think about the image of a Victorian woman, then quite often mentally imagine a prim, angular lady, who is tightened in a high-neck dress, bound by crinoline, with a neat hairstyle, a

submissive, expressionless face, necessarily without make-up, and observing all the norms of pious behavior. The Victorian code of behaviour is diligence, punctuality, piety, moderation, domesticity, and so on. As we read in Charlotte Brontл's classic novel 'Jane Eyre' about girls' education: "You are aware that my plan in bringing up these girls is, not to accustom them to habits of luxury and indulgence, but to render them hardy, patient, self-denying" [1, p. 54].

When asked if Victorian women were unhappy, we could answer that no more than women of any other epoch. Until the mid-17th century, marriages were often arranged by parents or trustees, who in their turn proceeded from a mutually beneficial exchange. However, the concept of family has changed with the course of time, and love has become the main element of marriage in the renewed presentation of family. It has provided an opportunity for women to choose their fiancй, although they were limited both by the requirements of their parents and by generally accepted norms. Despite the importance of romantic love, the Victorians remained practical people. For example, in Emily Brontл's novel 'Wuthering Heights', the main character Catherine Earnshaw married wealthy Edgar Linton despite her love for Heathcliff.

It should be noted that from the juridical point of view a woman was only an addition to her husband. She had no right to conclude a contract on her own behalf, to manage property or to represent herself in court. The status of women was so severe that the mother grieved if the newborn was a girl: '"That's your baby, my dear!" I tell her. "My baby?" says she. "Is my baby a boy, or a girl?" "It's a girl," I say. And when she hears that she cries out with all her lungs: "Then God help her! For the world is cruel to girls. I wish she had died, and me with her!"'[3, p. 209]

The purpose of women in the Victorian age was marriage and motherhood. Girls were preparing for this since childhood; though they were steered clear of the subject of sexual intimacy. Sometimes the act of love became a surprise for modest brides, and not the most pleasant one. Although manuals for newlyweds existed, they were often written not by doctors, but preachers and were not particularly valuable for young ladies. It is noteworthy that when there was adultery in novels, the writers of that time did not go into detail.

As for the topic of same-sex conduct, the Victorians tried not to touch it at all. However, as it is known, the grass looks greener on the other side of the fence. Therefore, in the 19th century, such relations nevertheless existed. The disclosure of this fact is confirmed by the research of such authors as: Havelock Ellis, Melissa Knox, Miriam J. Benkovitz, Florence Tamagne, Ronald Hyam and others.

This side of the life of Victorian women artistically tried to reveal in her novel 'Fingersmith' modern British writer Sarah Walters. She perfectly imitated the style of the Victorian age, recreating the atmosphere and surroundings, while plotting a system of well-developed and complex characters. The main characters are two completely different young women Susan Tinder and Maud Lily. The first of which is an orphan, raised by thieves, and the second one is a rich heiress of the estate. In the course of a complex, intricate plot fates of the

two heroines intertwine in the most unexpected for the reader way, showing us thereby the sensual side of a Victorian woman.

The hearts of both heroines were drawn to each other from the very first meeting: 'I hope you will be happy here, Susan.' Now she was blushing again. My own cheek cooled, when I saw that' [3, p. 45].

'I supposed it was the gloom–for the house seemed darker and stiller than ever, now that she had gone'[3, p. 46].

Later, the author reflects a closer connection between the heroines: 'I thought, It's their business. But, here was a curious thing. The more I tried to give up thinking of her, the more I said to myself, 'She's nothing to you', the harder I tried to pluck the idea of her out of my heart, the more she stayed there…It was like- It's like you love her, I thought' [3, p. 88].

'Then she pulls me to my feet, and turns and turns me; and I feel, where she presses against me, the quickening beat of her heart–I feel it pass from her to me and become mine'[3, p. 162]

Sarah Walters demonstrate us not only the sensuality, but the strength of Susan's and Maud's mind through numerous obstacles on their life path: moments of despair, pain, betrayals and misunderstandings. All these were mostly caused by the fear of opening up their feelings to each other, the fear of not being like everyone else, and loving someone like you: 'A hundred times I almost rose, almost went in to her; a hundred times I thought, Go to her! Why are you waiting? Go back to her side! But every time, I thought of what would happen if I did... So I did nothing' [3, p.95]. Also it hides the fear that someone else will find out about their secret: 'When those eyes meet mine, they are veiled and blameless. But when they meet Richard's, I see the leap of knowledge or understanding that passes between them; and I cannot look at her' [3, p. 168].

It is worth noting that after getting the heroines through the cruel vicissitudes of fate, the author still gave them suffered happily ever after: ''I don't want to be rich. I never wanted to be rich. I only want –' But I hesitated. My heart was too full. Her gaze was too close, too clear….I only want you, I said' [3, p.353].

Conclusion. Thus, Victorian society censured same-sex relationships, so most Victorian novels center on love between a man and a woman. This novel reveals the Victorian age from an entirely new prospective, forcing us to look at the epoch from a different angle. Sarah Walters states the fact that such women existed in that time. At the same time, the writer shows us prosperity in the Victorian age of double morality: sentimentality and good intentions perfectly coexisted with manifestations of social inequality and cruelty in personal relationships.

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PSYCHOLOGICAL AND PEDAGOGICAL DETERMINANTS OF THE ESTABLISHMENT AND FUNCTIONING OF THE EDUCATIONAL SPHERE

MIND MAPS AS TOOLS FOR EXPANDING EFL STUDENTS' VOCABULARY

O. Aleinikova, A. Atajanov
VSU named after P.M. Masherov, Vitebsk, Belarus

Today EFL (English as a Foreign Language) students need to acquire a significant amount of information in the target language to succeed in learning. In order to understand materials presented in English and be able to create new pieces of information one should have excellent vocabulary skills. Vocabulary is the first step in learning a foreign language. It is essential to know not only the meaning of the word but also be able to define its relationship to other words in order to apply it in the appropriate context.

Most frequent difficulties students encounter while developing vocabulary skills are those retaining memorisation, making associations and using words in the appropriate contexts and relating concepts to other contexts or purposes. Therefore students' engagement in the EFL learning process is poor and their language proficiency is not the best. One of the solutions to this problem is using mind mapping tools and encouraging students to create relationships between words and ideas rather than forcing them to memorise lists of words. Latest scientific researches testify the effectiveness of graphic organises integration into the educational environment. According to T. Buzan, "Mind Mapping is a strategy that can be used to encourage «deep» rather than «surface» learning" [1, p. 228].

The aim of our research is to investigate the benefits of using mind maps in expanding EFL students' vocabulary.

Material and methods. While working on the research we analysed scientific works of T. Buzan, B. Buzan, N.D. Galskova, N.I. Gez, P. Vitulli. Such methods as observation of the learning process at VSU named after P.M. Masherov, descriptive method, information analysis and synthesis, generalisation and interpretation were used.

Findings and their discussion. Mind maps were first popularized by Tony Buzan. They are usually referred to as diagrams used to visually organise information. The idea is based on radiant thinking theory according to which every piece of information can be represented by central node surrounded by hundreds or thousands or even millions of associations that have their own "followers" [1].

While drawing mind maps our brain is functioning in a natural way through getting and reproducing information, improving memory, attention and creativity. Mind maps are widely used in education for creating, structuralizing, visualizing and classifying information from various fields of knowledge.

The following benefits of mind maps in EFL teaching should be stated:

- involve full range of students' brain skills due to the fact that they represent relations between ideas, images, and words;
- develop logical thinking through revealing connections and integrating vast amounts of information from multiple sources;
- facilitate better understanding of relationships and connections between ideas and concepts;
- help to overcome information overload through placing emphasis on key concepts and clarifying their organisation and associations;
- expand students' focused or a bird's eye view on language phenomena;
- encourage new ways of thinking about linguistic concepts and ideas and increase creativity;
- provide teachers with insight into their students' thought process and appear to be a very effective way of evaluating learners' understanding;
- help students to evaluate their achievements and plan learning activity ahead;
- promote meaningful learning, improve memory and deepen understanding;
- make students more receptive and co-operative in the classroom;
- maintain students' interest because they are attractive, interactive and fun.

The main way of creating a mind map is to choose the focal concept and arrange around it sets of sub-concepts connected to the central one by association [Picture 1]. It's really helpful to use colours starting from red (which indicates the high degree of perception) and ending with green or blue (which point at low degree of perception). Also it's rather effective to use photos, pictures, sounds and even video clips. One can draw mind maps by hand. But there are lots of software and applications today that offer a wide range of mind mapping tools (e.g. bubbl.us, mindmup.com, mindmeister.com, etc.).
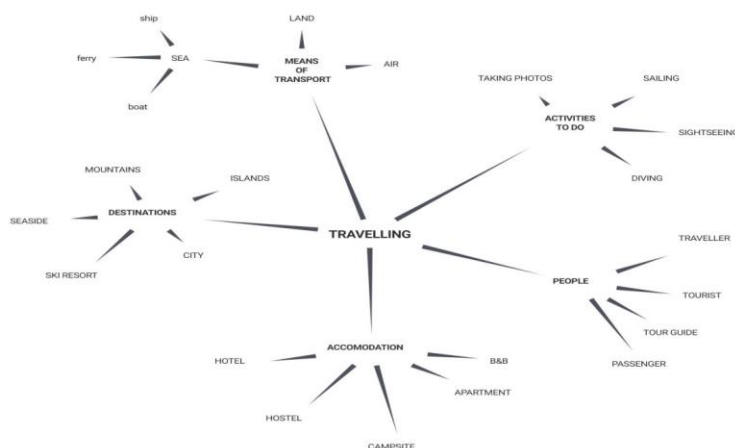
Picture 1. Mind Map "Travelling"

It has been stated that mind maps serve as an effective tool of expanding EFL students' vocabulary. With the help of mind maps students don't only improve their English vocabulary, but gain a better understanding of how various words are interrelated. This technique helps students to widen their passive and active vocabulary. Typically students memorise lists of new vocabulary words by rote and that often provides few contextual clues. Mind mapping activities help students to build stable foundation by placing words in connected categories. This process leads to long-term memorisation.

Mind maps can be applied in such vocabulary activities as: 1) brainstorming, activating and introducing topical vocabulary through translation, pictures, definitions, example sentences, etc.; 2) "reading" the mind map diagram (analysing and explaining semantic relations); 3) arranging jumbled words into the appropriate categories on the mind map; 4) completing the mind map diagram with missing words and word combinations; 5) guessing the central concept based on the associations provided; 6) providing derivatives of the central word; 7) completing mind maps with synonyms or antonyms of the central notion; 8) working on collocations; 9) expanding or reducing the given mind maps; 10) creating mind maps on a particular topic, etc.

While mind mapping appears to offer some powerful benefits in EFL teaching, there are still some drawbacks. It takes an investment of time and energy from teachers and students to master the technique. Another disadvantage "…deals with difficulty of getting some students to embrace the mind mapping strategy. Moreover, not all students enjoy drawing" [2, p. 7].

Conclusion. Mind maps are expected to be facilitator tools for EFL learning process. Presenting vocabulary items with key words, key pictures, colours, word categorization, etc. can make the process of memorising vocabulary items easier and more meaningful. Moreover, mind mapping tools are effective in reducing the memorisation time. They appear to be flexible and adaptable: you can change, replace and add information quickly and easily.

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DIALOGICAL SPEECH TRAINING ON THE BASIS OF COMMUNICATIVE SKETCHES

A. Aleshchenko
VSU named after P.M. Masherov, Vitebsk, Belarus

Among the purposes of comprehensive secondary school reform the most important one is to improve the efficiency and quality of the educational process

itself. Communicative approach in teaching foreign languages declares that the teaching of foreign languages is constant training of communication. So, the aim is to introduce modern technologies into the educational process, including dramatization in order to organize communication training in an optimal way.

Material and methods. While writing the article we used the following research methods: literature search on the topic and its critical analysis (works of E.I. Passov, G.A. Kitaygorodskaya, I.A. Zimnyaya, A.V. Konysheva, etc.), monitoring the organization of educational process in Vitebsk Gymnasiums № 1 and № 2, an experimental test of communicative sketches in the Gymnasium № 1, Vitebsk.

Findings and their discussion. Even at the initial stage of learning a foreign language, pupils master their ability to dramatize both individual dialogical unity and a chain of phrases composed independently. They also acquire the ability to communicate in different situations. The mentioned skills are the components of the integral ability to develop and perform communicative studies, which are the simplest and at the same time integral educational model of foreign language oral-speech communication, as they reflect its main structural components and functions.

The simplest form of communicative sketch is a two-part dialogical unity consisting of structures of the "question-answer" type. It is not interesting for pupils to answer questions continuously from lesson to lesson, so dramatization helps to revive the process of mastering the simplest speech formulas. For example, the two-part unity "How are you? - I'm fine, thank you." can be represented in the form of a conversation between two characters (toys, dolls, puppets, etc.). Thus, changing the characters a teacher can repeat the same dialogue many times in a row and the pupils will not get tired of the monotony of the process. For pupils of middle and senior level communicative studies are appropriate in the primary consolidation of lexical material. In this case, new words will be activated in the context, demonstrating the lexical compatibility of words in the speech stream.

Cards are used as a visual support for the preparation and execution of communicative sketches. A teacher specifies the main components of verbal communication on them in advance: a) members of communication (the number of members of communication determines the number of cards); b) theme; c) situation itself.

With the accumulation of speech experience, students have a desire to become not only performers of communicative studies, but also their authors. In such cases, students follow their own individual preferences, internal motives and goals of verbal and non-verbal behavior, in accordance with the level of knowledge of foreign language means and already learned foreign language communicative core [1, p. 225].

Thus, pupils master the tactics of building a dialogue in accordance with speech intentions. There are the following stages: 1) mastery of individual actions (the ability to ask questions, answer questions, etc.); 2) mastery of a two-

part dialogical unity (the complex unit of a dialogue representing combination of two speech acts on a thematic basis); 3) combining different types of micro-dialogue from two-part dialogical unities; 4) drawing up macro-dialogue; 5) motivated and free speech in a dialogue ("a free conversation").

To master dialogic unities and develop them into micro- and macro-dialogue, the following exercises can be used: fill in the blanks in a dialogue lines; expand the lines in a dialogue according to the context; make up a dialogue based on the topic, keywords and taking into account a certain communicative task, etc.

At an advanced stage of secondary school, drama-training exercises are quite effective. They contribute to the formation of skills of spontaneous conversation, which is based on the ability to coordinate speech behavior in a foreign language with arbitrary actions. In these exercises, actions are presented in the form of a solution to a problem, which involves the definition of some initial source data: the general characteristics of actions, the characteristics of the depicted persons, circumstances, motives, etc. At the beginning of the solution of the task-action, the program for its execution is synthesized. During the process of solving the task, additional circumstances are introduced in order to stimulate the students' speech and influence the course of the decision.

Conclusion. The organization of educational activity on the basis of communicative sketches is a way to combine verbal as well as visual training, at the same time all types of memory get into active gear. For learning a foreign language it is an opportunity to satisfy the requirements, to show and develop speech and creative abilities in practical activities: dance, song, recitation, etc. At the same time, all obvious advantages of dramatization demand its reasonable combination to other traditional and non-traditional methods taking into account the purposes and problems of a lesson, the contents of a teaching material and curriculum, social and psychological features of educational audience.

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TEACHING ESP READING TO MASTER'S DEGREE STUDENTS

M. Ataeva
VSU named after P.M. Masherov, Vitebsk, Belarus

Nowadays English is known as language of international communication. It allows clear communication among all areas such as business, economics, science, technology, politics, etc. Therefore, language mastering is an initial key for Master's degree students to achieve the main goal of their studies – to become highly qualified professionals. Additionally, learning ESP (English for

Specific Purposes) provides wide opportunities for working with large variety of sources for the Master's degree dissertation. In order to choose necessary resources it is important to have well-developed reading skills. Reading in this case is a crucial way to get information and developing reading skills becomes an important goal of teaching ESP.

The aim of our research is to find out how reading professionally-oriented texts improves Master's degree students' ESP level.

Material and methods. The research is based on the articles devoted to the problems of teaching ESP to students of non-linguistic specialties and works of many other scientists such as V. Bukhbinder, Yu. Kovalova, H. Kravchuk, R. K. Kusko, Martynova, O. Morozova, A. Operenko. The main methods used include: the descriptive method, the method of the analysis and synthesis of information and generalization.

Findings and their discussion. It is evident that job-related texts are inseparable part of ESP teaching and learning curriculum. They are first of all "means of making up and development of professional language knack" [2, p. 17]. Thus, professionally-oriented texts enable teachers to organize the learning process in a meaningful and communicative way and give valuable practice in the development of integrated language skills.

At the beginning of working with authentic job-related texts it is crucial to build a sense of language, an ability to grasp general information from the text.

The process of working on professionally-oriented texts should follow the well-established sequence of stages including pre-text, text and post-text ones.

The aim of the *pre-text stage* is getting acquainted with the words and predicting the meaning and the theme of the text based on a headline.

Possible pre-text exercises:

a. Guessing the meaning of the following words and checking pronounciation.

b. Looking up the meaning of bold words and phrases.

c. Brainstorming: What is your understanding of the words below?

d. Matching words with their definitions, translation, pictures.

e. Grammar exercises aimed at removing difficulties with understanding while reading, etc.

The aim of the *text stage* is grasping the general and detailed information.

Possible text exercises:

a. Reading the text.

b. Scanning the large extracts.

c. Translating.

d. Filling the gaps while reading.

e. Matching each paragraph with the appropriate headline.

f. Answering questions on general understanding of the paragraph.

g. Writing down difficult words while reading.

h. Identifying specific grammar constructions, etc.

The aim of the *post-text stage* is to check the comprehension of the written information and to develop context-based communicative skills.

Possible post-text exercises:

a. Agreeing or disagreeing with the following statements.

b. Completing the sentences with missing information.

c. Answering reading comprehension questions.

d. Drawing up a plan.

e. Rendering and summarizing the text.

f. Expressing your ideas on the problems stated in the text.

Reading professionally-oriented texts nurtures utterly important for Master's degree students' qualities:

-possession of linguistic professional knowledge,

-being ready for professional verbal interaction,

-being ready for creative professional activity [1].

Conclusion. To sum up it should be stated that professionally-oriented texts serve as a main source of teaching ESP. The process of reading such texts influences the development of students' professional communicative competence in scientific areas and research activities.

Teaching ESP reading to Master's degree students improves active and creative personalities of future scientists able to use the linguistic knowledge in job-related activities and varied areas of science and industry such as conducting research, writing scientific articles, making conference presentations, and writing Master's degree dissertation. It also fosters the development of multilingual personality able to observe native and foreign cultures.

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INFLUENSE OF MATHEMATICAL COMPETITIONS ON THE LEARNING PROCESS OF STUDENTS OF THE SPECIALTY «TRANSPORT LOGISTICS»

N. Bolbat, E. Setko

Yanka Kupala State University of Grodno, Grodno, Belarus

The learning process is one of the most important stages in the life of each person. Studying at the university is a doubly crucial stage. Knowledge gained at the university becomes the basis of future professional activity. Nowadays,

universities are interested in graduating competent specialists who are able to develop our country and raise it to a new level.

Transport logistics is one of the most modern and important areas today. Despite the fact that logistics itself is rooted in the past, the emergence of new technologies and the development of transport require improvements in the logistics approach and the training of logistics professionals.

Learning logistics at university is not an easy but fun process. Like logistics professionals, students should always be observant and as focused as possible. The process of delivery of goods, control over their movement require a special responsible approach. Therefore, the university prepares students for serious work upon the first day of studying. The learning process becomes difficult due to constant concentration.

So there is a need to defuse the situation. There are many ways to diversify activities: physical activity, viewing videos, conversations on free topics. We offer an alternative option: the usage of math competitions.

Our target is to find out how mathematical competitions affect the process of teaching students of the specialty transport logistics

The obvious advantage of math competitions is their usefulness. Having a rest from a habitual type of activity, students can gain additional knowledge, expand their horizons. But why are math competitions? Students of the specialty "Transport Logistics" are most often techies, and it is easier and more interesting for them to work with numbers than with a lot of text.

However, the word "mathematical" should not be limited in formulas, numbers. The list of tasks should also include tasks for ingenuity, for general development, for solving logistical problems.

During any long process it is necessary to have a rest, to be distracted for a while. Breaks are not always enough for a good rest from mental activity, because students often need time to prepare for the next lesson, to repeat some material. The use of math competitions during the lesson will bring tangible benefits: they will not last long, but this time will be enough to gain strength and continue the lesson.

Material and methods. We have repeatedly held mathematical competitions among students of the 2nd and 3rd courses of the specialty "Transport Logistics". After the competitions, we conducted a comparative analysis of the students' condition before and after the competition, and then interviewed the students.

Findings and their discussion. During the competition, students were filled with the necessary energy. And the use of humorous tasks, tasks with a trick further uplifted. We found out that the use of recreational activities in the form of mathematical competitions has many advantages:

1) Switching to another type of activity;
2) Ability to relax;

3) The use of kinesiological exercises in the composition of competitive elements contributes to the revitalization of the brain;

4) Filling up with energy and strength;

5) Expansion of horizons;

6) The development of mathematical skills;

7) Team building;

8) Practice in solving professional problems;

9) The development of the ability to find ways out of different situations quickly;

10) Development of the ability to solve non-standard tasks, etc.

Feedback from students with whom mathematical competitions were held showed that everyone likes this approach. As shown in the research, mathematical competitions have a positive effect on the condition of students. They increase motivation to study, fill with energy, charge with positive. Also, the competition has a positive effect not only on the spiritual, but also on the physical condition of students. Because often during some assignments they need to get up, move around the audience, carry out assignments.

Conclusion. Students' well-being is a guarantee of high efficiency of the whole group. Since mathematical competitions not only improve the condition of students individually, but also unite the team, the positive effect doubles. As a result, academic performance improves, grades improve.

Thus, the use of mathematical competitions in the process of teaching students of the specialty "Transport Logistics" has a positive effect on the students' well-being and on their academic performance.

THE EXTENSION OF STUDENTS' POTENTIAL VOCABULARY ON THE BASIS OF ENGLISH POLYSEMANTIC LEXEMES

E. Chernysh
VSU named after P.M. Masherov, Vitebsk, Belarus

As we all know, potential vocabulary represents a major constituent of the whole lexical level knowledge. Consequently, it is crucial to implement certain practical system of teaching and studying of such vocabulary. The following study is relevant since it is aimed at forming a life-long foreign language self-education.

As for the purpose of this study, it is intended for the mastery of methods and techniques of a language guess.

Material and methods. The research in question was conducted in 6-9 forms including 50 pupils in total at Vitebsk school № 45 and among 5-year students of a philological faculty at VSU (20 students all in all). Such methods as semantic, contextual and contrastive-comparative analyses were applied.

Findings and their discussion. The given study is the result of the teaching experiment. It was held at 3 stages:

1. A preparatory phase. While teaching students at school, we paid their attention to the ways of defining unknown word meanings via specific intralingual (within the English language) and interalingual (combining the possibilities of a native language and the English) means except for traditional dictionary word-for-word translation. Regarding meaningful English morphemic structure, we have explained the interconnection between word morphemes and word meanings, e.g. the prefix '*pre- (пре, при)*' indicates '*precedence (предшествование),*' the suffix '-less (без)*' points out 'the absence of a certain quality among adjectives,*' etc.* Then necessary 60 contexts were sorted out and unstudied vocabulary units were highlighted for the upcoming experiment.

2. An experimental phase. Each student at school and university was given one context and was to decide what meanings the underlined word could have and what indicators helped them to define its sense.

3. A summary. After finishing the above-mentioned research work, we have acquired a strategy to teach potential vocabulary. Firstly, let us introduce the term 'potential vocabulary.' From a methodological point of view, all unknown words in a text can be divided into two groups: 1) the words which a reader can guess with the help of a dictionary; 2) the words which meanings one can guess on the basis of a context or thanks to the internal linguistic possibilities. It is the second group which belongs to the sources of the vocabulary extension and has a peculiar 'potential.' A potential vocabulary is considered as such affixal derivatives, compound and polysemantic words, converted formations and cognate words which students haven't come across yet, but can be perceived by them if they are taught to find out these very word meanings using certain techniques [1, p. 47]. As for a linguistic basis for including unlearnt meanings of polysemantic words into a potential vocabulary, it is their motivation which serves as the background of their derivability. The character of unlearnt derivability of polysemantic word shades of meanings is distinct. Some shades of meanings are closely connected with a learnt meaning, some are less closely connected, and others are connected indirectly, that is, with the help of an image (an imaginative or imaginative-logical derivability). Some unlearnt meanings coincide completely with the corresponding meanings in one's native language, some unlearnt meanings have a partial coincidence, and others don't have a corresponding meaning in one's mother tongue. All these factors determine different levels of difficulty in polysemantic word semantization, which should be taken into account during the educational process. Experience has shown that unlearnt meanings of the first level of difficulty in comprehension are clear to students and don't require lecturer's explanations. Thus, forming potential vocabulary begins with the introduction of one of the polysemantic word meaning.

Teaching comprehension of polysemantic word unlearnt meanings of the second level of difficulty is conducted on the basis of exercises with an intralingual and interalingual derivability in order to present these very supports which represent the basis for indispensable meanings deduction. Doing exercises which require the deduction of polysemantic unit unlearnt meanings in word combinations, students learn to use supports in a studied foreign language, for instance, *to learn English (to study the English language; учить английский язык), to learn to skate (to acquire the skill of skating; учиться кататься на коньках), to learn the news (to find out the news; узнать новости).* A lecturer alongside with his students correlates a known meaning with an unknown one and reminds that they have already learnt figurative meanings in their mother tongue. Students fulfill the other points of the exercise on their own under lecturer's control. Starting the work with unlearnt word meanings with an intralingual derivability, a lecturer points out the interconnection of polysemantic word different meanings, for example, a familiar to students polysemantic word *'great'* has the following shades of meanings: *'big (большой),' 'well-known (известный),' 'colossal (колоссальный),' 'elevated (возвышенный),' 'noble (благородный),' 'remarkable (выдающийся),' 'magnificent (великолепный).'* But all the aforementioned lexemes have a united indication, that is, *'grandeur (великолепие).'*

While taking up the comprehension of unlearnt polysemantic word meanings which have an interalingual derivability a lecturer pays his attention to a full or partial coincidence of corresponding words shades of meanings in a native language and foreign language. The work on such lexical units should be started with fully coinciding shades of meanings, then, should be proceeded to partially coinciding ones, drawing necessary parallels at the same time.

The next lecturer's task is teaching unlearnt shades of meanings comprehension which has an imaginative or imaginative-logical derivability. The comprehension of such words can be only carried out with the help of an inner structure of a word or a context and requires the awareness of the main types of transfer. A lecturer takes students' notice of the fact that all languages have words which can be used in their direct and figurative meanings. An image often constitutes the basis for the transfer. This image, in some way or another, is connected with word direct meaning, e.g. the word *'mouth'* which is familiar to students in the meaning of *'рот.'* It is also used in its figurative meanings in other cases and means other notions, although they are explained via its direct meaning: *'a mouth of the river (устье реки),' 'a mouth of the volcano (жерло вулкана).'* All these meanings possess the image of *'opening'* as their basis.

The semantization often results in a heuristic search and acquires the character of a contextual guess regardless of the connection of an unlearnt meaning with a learnt meaning. Contextual analysis is an intralingual procedure of searching certain equivalents. The conducted work has proved the fact that mostly students manage to specify semantics thanks to different types of

contexts. The most helpful kinds of them turned out to be lexicological-grammatical and that of subject-matter. The semantization of some lexical units is possible only within a context. A lecturer should work out such an algorithm among his students to ensure a purposeful search of a basic lexical unit unlearnt meaning. This procedure is promoted with examples and instructions which define the succession of cognitive acts to get unlearnt meaning semantizations: a) read a sentence (text), try to understand its main idea / its gist; b) define whether a familiar underlined word in a sentence with its meaning matches the given sense (the correlation of the semantization result of a given word with its context and the elicitation of mismatch meaning and its context); c) reconsider a known meaning in such a way to match its context and at the same time it were semantically connected with an unknown one (the elicitation of a new meaning which matches the given context) [2, p. 110].

Conclusion. Therefore, the proposed teaching method enables to form language guess skills. Such conscious language perception will lead to the improvement of all the aspects of linguistic competence (communicative, writing, listening, and reading) on condition that there is a lack of language means. Such comprehension systematizes knowledge thanks to the parallels between grammemes and its content (lexemes), a whole textual consideration (context), as well as proper and figurative word meanings.

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INTERNET-BASED TEACHING EFL WRITING

V. Chichagina
VSU named after P.M. Masherov, Vitebsk, Belarus

Teaching students to write correctly in English is a very important part of teaching EFL (English as a Foreign Knowledge). Knowledge of written language allows students to use the knowledge of a foreign language, being outside the language environment, communicating with native speakers via modern means: the Internet, e-mail, texting, etc. The ability to write personal and official e-mails, the need to fill out application forms, questionnaires, CVs and other documents motivate students to master their written communication skills actively.

Today, it is obvious that the Internet is one of the most exciting, influential technologies that play a crucial role in one's personal and professional life. It's evident that the Internet serves as a powerful repository of information for

language teaching as well. "The development of the Internet has enabled the emergence of new digital tools for pedagogical applications and an indefinite number of resources and materials in a variety of formats are available on the World Wide Web for language teaching and learning. In addition, the Internet keeps people across the globe connected. This connection or networking has considerably empowered people to communicate and exchange information" [2, p.107].

Teaching writing is one of the most important and difficult part of the process of teaching English. Web-sites and online applications can provide teachers with enormous opportunities to improve EFL learning process, foster students' engagement and motivation, enhance their understanding of English and master language skills.

The aim of our research is to find out which resources can be used for teaching EFL writing and what their peculiarities are.

Material and methods. While working on the research we analyzed two most popular Internet resources such as *LinguaLeo* and *Ischoolenglish* and studied the following materials: Gordon L. "The Internet and Young Leaners", Atikhom T. "The Use of Internet Resources and Applications for Language Instruction", Hongqin Z. "Using the Internet to Improve EFL Through Reading and Writing for Communicative Purposes". The descriptive method, the method of analysis and synthesis of information, generalization method were used.

Findings and their discussion. The results of our research show that the Internet-based approach to teaching EFL has many advantages:

• it provides students with possibility to use natural and authentic language not only during but also outside the class, making learning English a part of students' daily lives;

• it offers a great variety of topics to satisfy different tastes and interests;

• the Internet resources are highly motivating for students of all ages. Websites and applications are full of pictures, animation, sounds, video clips, and interactive activities;

• the information available on the Internet is considered to be current and up-to-date which makes it a source of true-to-life communication;

• the Internet has become an essential part of today's life and learning how to use it is an important skill for students. The Internet-based approach combines the process of the development of basic information technology skills and learning English at the same time;

• using the Internet for EFL teaching and learning enhances students' independence and gives them opportunity to manage their own learning.

In our research, we have studied two most popular Internet resources: *LinguaLeo* and *Ischoolenglish* to see if they might be useful in teaching EFL writing.

LinguaLeo is a freemium online platform offering English language learning service and available on the web, Android, iOS, Windows Phone, and

as a browser extension. It offers a large number of activities for practicing writing: working with built-in and personal dictionaries, vocabulary cards, word constructor, phrase constructor, brainstorm, crossword, etc.

Let's look at "Brainstorm" activity consisting of several exercises combined together. High assimilation of words is achieved through the use of several methods: the acquisition of knowledge, the formation of skills, consolidation and verification of knowledge, skills and abilities. Here exercises can be divided into several stages. At the first stage, the user is shown a word, its translation, transcription, and a picture illustrating the meaning. This stage is aimed at vocabulary semantization. The purpose of the second stage is the formation of knowledge. To do this, the student is shown the word, listens to its pronunciation and selects the correct translation from the list. There are usually four translation options to choose from. During the next step of the activity only translation of the word is presented and the student's task is to make up the word from the jumbled letters. And the final stage asks the student to listen to the pronunciation of the word and write it.

Let's consider the second educational resource *Ischoolenglish*. This web-site is intended for Russian-speakers and offers such interactive activities as "Scrabble", "Hangman", and "Words with Friends" aimed at developing students' spelling skills and word knowledge. With the help of this website students can also practice writing dictations. At first they listen to audio phrase for two times, and then type it. After that, they can check spelling and notice mistakes they have made. On this web-site students can learn rules of writing, grammar, etc. Authors also provide links to other useful Internet resources.

There are also other resources which are widely used by many teachers all over the world. Google was the most used online tool as reported by language teachers. This finding is consistent with that of the study, reporting that search engines were one of the top three online tools most applied by EFL teachers. They used them mainly to acquire information for teaching-related purposes [2].

Internet recourses are quite effective way to learn and teach writing. There are a large number of dictionaries, exercises, videos and Internet programs for teaching and learning English. Teachers can deliver and check hometask via the Internet. But it's necessary to note that online resources cannot replace classroom communication and interaction but can be good additional tools for EFL learning and teaching.

Conclusion. Internet-based teaching EFL writing enhances students written communication skills, provides teachers with necessary material, helps them to spend less time on lessons preparation. At the same time teachers should not use Internet resources too much. They should always ask themselves simple questions: Will you use the Internet as an instructional tool or will it provide material to contextualize your offline lesson in an exciting and motivating way? Will your children be performing language-learning tasks when online? Will they use the target language on the Internet?

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PROFESSIONAL SELF-DETERMINATION OF SCHOOLCHILDREN IN THE CONTEXT OF PROFESSIONAL EDUCATION

A. Korotkova, K. Shestilovskaya
SGAFKST, Smolensk, Russia

The problem of professional self-determination has always existed. Moreover, it is still relevant today. Educational organizations create specialized classes for helping young men and women in this area. Teachers believe that achieving maximum efficiency of the profile system classes could be possible by deepening their practical part [3]. Thinking about the interests of high school students, parents and society, educational organizations are working on profiling. Fire and rescue area is one of these profiles.

The aim of the article to get acquainted with the activities of the class of fire and rescue profile in MBOU "School" № 28 in Smolensk

Material and methods. There are about 200 such classes in Russia. The Fire Cadet Class began to work in 2000 (in Ulyanovsk, school №48). In 2014 (in Khabarovsk) 70% of students in school №3 of fire and rescue area from the first grade are cadets of the Emergency Ministry. Such classes also exist in cities like Moscow, St. Petersburg. Yoshkar-Ola, Kemerovo, Irkutsk, Volgograd, Ulyanovsk, Krasnoyarsk, Ryazan and others [1].

Findings and their discussion. The opening of the fire-rescue class was on the 1 of September in 2017. The main purpose of the fire-rescue class is the professional orientation to the military and other public services, including those related to ensuring the safety of people's lives. The class operates in full day mode. It involves self-training, visiting sports clubs, clubs, and other forms of extracurricular activities. Their purpose is to strengthen physical training and develop competencies, which are necessary for successful admission to specialized higher education institutions. The order number 363 of 11.08.2017 "On the organization of specialized training of students in the class of fire-rescue profile MBOU" School №28 "Smolensk" is the base for carrying out work of these classes. The students are granted the rights to: studying of subjects aimed at orientation, the profession of a military man, special military

or state service; the implementation of individual subjects, hours of extracurricular activities using the resources of other organizations.

In order to identify the motivation of young people for entering this class, the authors conducted a survey among students. The survey showed that the main motivation is the parents' opinion (7 out of 11), the next category is the friends and acquaintances' opinion (3 out of 11) and the influence of the media (1 out of 11). At first, there were 15 people in the class, later 3 girls left because of too much work and 1 boy for health reasons.

This high level of motivation is due to the intensity of the programs. Classes are held on the basis of MBOU "School № 28" in Smolensk. The young people spend most of their time at school: in a classroom specially reserved for them. During the week they go to the pool (2 hours per week), according to the results they pass the TRP standards; State Inspectorate for Small Courts (1 hour; study group "Fire and Rescue Training" (2 days a week), conducted by EMERCOM located at 21 Popov street and 3 Bagration street; fire department №72; "Young tourists" station. Moreover, young people are engaged in rock climbing, orienteering and hiking.

Conclusion. Teaching children safe behavior is considered a pedagogical condition for connecting them to life. Profile fire and rescue classes contribute to the formation of knowledge, skills and abilities in the field of security, development and readiness to work effectively in dangerous, critical conditions. Such classes give great freedom in the activity of teachers because such motivated students are ready to perceive information deeper and better, express their thoughts correctly, develop their practical skills. You need to apply your creative potential, professional and personal qualities for such children [2].

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THE IMPORTANCE OF FIRST-YEAR STUDENTS TESTING TO ACCELERATE THE PROCESS OF ADAPTATION TO STUDY IN HIGHER EDUCATIONAL ORGANIZATION

T. Makhovitskaya
Educational Organization of Higher Professional Education
"Gorlovka Institute of Foreign Languages", Donetsk, DPR

The problem of adaptation of students to the conditions of study at the higher educational organization and the difficulties of the first year of study are

the most important problems of higher education. This process, as a rule, is accompanied by a breaking of the dynamic stereotype and way of thinking, and it's often painful [4, p. 103].

The effectiveness of the adaptation process and the creation of a conducive adaptation period are the most important tasks of the whole educational process of the higher educational organization and the teaching staff involved in the interaction with the first-year students [1, p. 31], [3, p. 48].

Material and methods. In order to study the adaptation period passage by the first-year students, the psycho-pedagogical research was conducted using a questionnaire method. 65 full-time education first-year students of Donetsk Pedagogical Institute of "Special defectological education", "Pre-school education", and "Primary education" specialties took part in the survey. The respondents are 16-19 years old.

Findings and their discussion. The first questions were devoted to the motivation of choosing a higher educational organization by students and, accordingly, their future occupation. 15.6% of students made a decision to choose pedagogy as their specialty in a high school, 36.8% during the year, a few months before admission – 27.4%, and a few days – 20.2%. The factors that influenced the choice of an occupation were distributed as follows: interest in the teacher's occupation – 35.3%, influence of friends (mostly students of the previous year of admission to Donetsk Pedagogical Institute) or career guidance conversations – 25.7%, desire to have a higher education – 15.7%, parental exposure – 23.3%.

Then we diagnosed a lifestyle change based on the subjective feelings of students. 41.2% of students claim that their lifestyle has completely changed, 28.5% told that it has changed slightly, and 30.3% told that it's almost unchanged. That is, more than two-thirds of admitted to the institute faced the problem of adaptation.

According to the answers, 61.5% of students are willing to go to classes, 25.3% – depending on the situation, that is, completed homework and the presence of certain academic disciplines in the schedule, and 13.2% find it difficult to answer this question.

We identified the following factors as the main difficulties, namely:
- problems in educational activities (61.9%);
- problems in interaction with teachers (7.8%);
- financial difficulties (21.5%);
- domestic problems (8.8%).
Regarding the assimilation of educational material stated:
- presence of minor difficulties in individual academic disciplines (52.8%);
- presence of nervous tension and fatigue (28.2%);
- significant difficulties in all academic disciplines (8.7%);
- no difficulties (10.3%).

The students consider the low quality of school training to be the main reasons for these problems (45.7% in individual academic disciplines and 25.6% in almost all academic disciplines of the program).

As a result these problems manifest themselves in the form of:

- lack of skills of self-discipline and self-organization in the process of both educational and extracurricular activities (55.3%);
- unformed skills of independent work (40,5%);
- unpreparedness for new forms of educational activity (62.5%).

As a result students claim the following main problems:

- lack of free time;
- overburdened training sessions;
- insufficient level of pre-university training;
- lack of self-organization skills;
- financial and domestic problems;
- lack of the usual social circle and home environment;
- difficulties of getting used to new people and new environment.

Answering the final question students state that after the first semester and the first session 67.3% of them feel fully adapted to study at the higher educational organization, 22.6% are partially adapted, and 14.6% consider that the adaptation process is difficult for them.

According to Professor V. Romanenko, the success of adaptation directly depends on such a psycho-physiological indicator as adaptability.

Adaptability or the ability to adapt to changing conditions of natural, industrial and social environment is proportional to the common mental activity and inversely proportional to emotionality [2, p. 55]. Adaptability isn't associated with somatic features. Adaptive students are superior to non-adaptive in physical condition, productivity and aerobic performance. The physique of adaptive students reacts to the standard load with less pronounced intensification of blood circulation, and therefore retains an increased reserve of this function to its end.

Conclusion. The most important role in the adaptation of first-year students can be played by psychological support, namely psychological service or psychological research laboratory. From the beginning of the first year of study it makes sense to conduct psychophysiological testing, including the determination of such qualities as temperament, adaptability, intro- and extroversion, neuroticism, anxiety, aggressiveness, mental and intellectual activity, because all these characteristics affect the addiction to a new environment and creating a sustainable dynamic stereotype directly or indirectly. The obtained data should be used both in the study process and in extracurricular activities in order to reduce psychological trauma during the adaptation period.

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SOCIOCULTURAL COMPETENCE AS AN INTEGRAL COMPONENT OF FOREIGN LANGUAGE EDUCATION IN THE EIGHTH GRADE

A. Parkhutik
Brest State A.S. Pushkin University, Brest, Belarus

At the present stage of educational technologies development a great attention is paid to the formation of students' readiness for the interlingual intercultural communication. In accordance with the social order of the Republic of Belarus, the process of learning a foreign language should be aimed at preparing for the dialogue of cultures, education in the spirit of tolerance, development of skills to convey own thoughts and feelings to the interlocutor and to interpret correctly the others' [1]. Based on this, there is a shift in focus on the value of the personality of a student and the development of his individuality. Thus, there is a transition from the knowledge paradigm in education to the humanistic one, within which the competence-based learning comes to the fore. As is known, one of the main problems of the competence-based approach and the modern foreign language education in general is the formation of a secondary linguistic personality. To resolve successfully the above tasks, it is necessary to form and develop not only linguistic and speech skills, but also knowledge about the culture of the country of the studied language, its traditions, the nature of native speakers, the characteristics of their verbal and non-verbal communication, as well as the creation of conditions for the formation of the experience of foreign language communication. Therefore, the student should have an idea of the mentality of the representatives of the studied culture. This function is performed by the socio-cultural component of the foreign language education. To identify the compliance of the existing tools for the development of sociocultural competence with the stated requirements, there have been analyzed textbooks of English language for the 8th grade, taken as a basic model of the educational process in a secondary school.

The purpose of the study was to identify the availability of tools for the sociocultural competence formation in the 8th grade.

Material and methods. Content analysis of the current English language textbook for the 8th grade of general secondary education institutions by

Lapitskaya, published in 2016 [3] and the teaching aid material for teachers by Lapitskaya, published in 2013 [4].

Findings and their discussion. As the basis of the criteria of formation of the sociocultural competence four components mentioned by Azimov and Schukin [2, p. 286-287] were taken:

- the presence of facts about the socio-cultural realities of the country of the language being studied (customs, traditions, norms of verbal and non-verbal behavior, speech etiquette);

- the availability of materials that serve as support for the formation of the experience of foreign language communication (providing options and opportunity of choice of communication style and speech means of its implementation, tips for building strategies and tactics of the communicative act, guidelines for the correct interpretation of cultural phenomena);

- the availability of materials that contribute to the formation of personal attitude towards the facts of a studied culture.

- the emphasis on the mastery of socially labeled foreign language units (including an emphasis on the semantic difference between equivalent lexical units within two cultures).

The analysis of the educational material in accordance with the stated criteria revealed the following:

- the textbooks contain enough facts about the sociocultural realities of the country of the language being studied (the customs, traditions, holidays): every topic is connected with the peculiarities of the lifestyle of the inhabitants of Great Britain: "About the UK", "School", "Meals", "Very traditional Britain", etc. The topics provide all the sociocultural facts mentioned above through the presented texts and tasks: symbols and geography of the UK in comparison with the Belorussian ones [3, p. 4-32]; the peculiarities of English school organization [3, p. 33-63], etc. The emphasis on the peculiarities of the verbal behavior of the representatives of the English-speaking culture is presented, first of all, in the form of the texts containing dialogical speech for the listening practice in each topic; also the formulae of politeness and speech patterns are presented in Help-boxes. However, the information about the norms of non-verbal behavior of native speakers is not provided. Such information could be presented with the help of videos presented by teachers and supplied with their explanation;

- the tasks, involving the choice of style and means of speech behavior, alignment of the strategy and tactics of the communicative act, are presented in insufficient quantity. For example, when the students are to advice a friend what he should see in the UK, the patterns in the help box suggest speech patterns of only neutral style [3, ex. 5, p. 16]. According to the teaching aid for teachers this task supposes work in pairs [4, p. 24]. However, the task could be expanded with the colloquial phrases that are used by English people in everyday life. At the same time the students could be divided into two groups and be given a task

to make an advice using a certain style; after that a discussion of the relevance of the given styles in a certain situation could be organized.

- materials that contribute to the formation of interest and positive attitude to the facts of the foreign language culture, are presented in almost every lesson. Thus, the texts provide the information of current interest that is important for both cultures, and connected with the students' experience (pocket money, family holidays, music, cinema, school, etc.). The tasks presuppose various activities for each lesson: listening, speaking, role-playing, writing, quizzes, games, etc., that promotes the increase of the general interest to the subject and thus forms the positive attitude to the facts of the other culture;

- materials with an emphasis on socially labeled language units are presented partially. As it was mentioned above, there are speech patterns and vocabulary units that represent only neutral style. The texts and exercises contain lexical units that reflect a topic (school, money, meals, etc.) but they are approximate to the neutral equivalents.

To sum up, it could be said that for more successful development of sociocultural competence the lesson of a foreign language could be additionally supplemented with the following material:

- the information that forms the knowledge of the norms of verbal and non-verbal behavior of representatives of a foreign language culture;

- tasks and problem situations involving the independent choice of style and means of speech behavior, the alignment of its strategies and tactics;

- the emphasized focus on socially labeled language units of the English language.

Strengthening the focus on these aspects could help improve the efficiency of immersion in the cultural and linguistic environment of the target language: the vision of a studied culture can become more multifaceted and deepen the understanding of the mentality of the carriers of a foreign language culture. These aspects can further facilitate the construction of foreign language communication in the dialogue of cultures and minimize the likelihood of intercultural conflicts in the process of communication.

Conclusion. Thus, it can be concluded that the materials for the development of sociocultural competence are presented in the textbooks in sufficient quantity. Nevertheless, the lessons of the English language still need to be supplied with the additional material.

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THE RELATIONSHIP OF TEACHING EXPERIENCE AND PERSONAL CHARACTERISTICS OF TEACHERS

K. Safyanik
Polotsk State University, Novopolotsk, Belarus

At any time, there are many requirements concerning teaching, and that is not surprising, since this profession plays a huge role in the formation of many individuals. It makes a research of teacher's personality and qualities that are important for a teacher a particularly important issue.

Teaching experience is of great importance in the implementation of professional activities, as experience of a teacher is primarily practice and development of the most favorable forms of behavior in the activities of a teacher. But long-term work experience affects the personality of a teacher not only positively, along with the accumulation of experience fatigue and other factors that can further interfere with the fruitful work of the teacher increase, which, subsequently, can lead to an emotional burnout and many other difficulties in teaching [1,3]. Boyko V. V., Sorokin O. G, Maslach K. and many other researchers studied the issue of work experience influence on professional burnout. The relationship of teaching experience with other personal characteristics is little studied, but it is extremely important for the favorable implementation of the educational process.

The following social and psychological features of a teacher - level of communicative control, rigidity, emotional barriers in interpersonal communication, anxiety and emotional burnout - are extremely important for studying. The mentioned above features of a teacher influence teacher's relationships with students, which, in turn, affect the students themselves and their personal development.

The aim of the research is to study personal characteristics of teachers and their work experience.

Material and methods. To achieve our aim we used the following techniques- the technique of testing emotional barriers in interpersonal communication (V. V. Boyko), the technique of testing professional burnout (K. Maslach, S. Jackson in the adaptation of N. E. Vodopyanova), the technique

of tesying of rigidity (Eysenck), the technique of testing of anxiety (Spielberger-Hanin) and the technique of communicative control (M. Schneider).

42 teachers with teaching experience of 1 to 40 years, 33 females and 9 males of Polotsk State University took part in our research.

Findings and their discussion. At the first stage of our study, the level of rigidity, communicative control, emotional barriers in interpersonal communication, anxiety and professional burnout were measured, and comparison of the test data with the test norms were made.

At the second stage of the study, the relationship between work experience and personal characteristics of teachers was revealed. Spearman's criterion was chosen for statistical processing of the data obtained during the study.

As a result of comparison of work experience with the level of anxiety ($p=0,07$), communicative control ($p=0,2$), barriers in interpersonal communication ($p=0,1$), rigidity ($p=0,1$), there were no correlations.

In comparing work experience with emotional exhaustion, depersonalization and reduction of professionalism, correlations were found (emotional exhaustion – $p=0.006$, depersonalization – $p=0.03$, reduction of professionalism – $p=0.006$).

Correlations were found between anxiety and emotional barriers in interpersonal communication ($p=0.00006$); anxiety and emotional exhaustion ($p=0.0009$); anxiety and reduction of professionalism ($p=0.009$).

At the third stage, the teachers with different work experience were subdivided into 4 groups based on approaches of Povarenkov Y. P., Kudasheva A, and D. N. Zavalishin in accordance with the main stages of professional formation:

a) Working experience from 1 to 9 years. (from 1 to 3 years and from 4 to 9 years were combined, because in the group from 1 to 3 years there were only 2 teachers);

b) Working experience from 10 to 15 years;

c) Working experience from 16 to 21 years;

d) Working experience –more than years [2].

At the same stage, using the Kruskal-Wallis criterion, four groups of teachers with different work experience were compared with such characteristics as rigidity, communicative control, emotional exhaustion, depersonalization, reduction of professionalism, anxiety and emotional barriers in interpersonal communication.

Significant differences between the groups were revealed only on the scale of depersonalization ($p=0.01$).

Based on the data obtained during the first stage of the study, a "portrait" of a typical teacher was described: it is a person with an average level of rigidity, an average level of communicative control, an average level of anxiety, an average level of emotional exhaustion, a high level of depersonalization, an average level of reduction of professionalism, whose emotions to some extent complicate interaction with partners.

Based on the length of working experience, in the indicator of "depersonalization", we can see that the highest rates on this scale show teachers with work experience from 10 to 15 years.

Conclusion. Thus, the hypothesis of the relationship of teaching experience with such characteristics as anxiety, professional burnout, communicative control, rigidity and emotional barriers in interpersonal communication is only partially confirmed, since the study revealed that the teaching experience is interrelated with emotional exhaustion, depersonalization and reduction of professionalism.

Correlations were found between anxiety and emotional barriers in interpersonal communication (p=0.00006); anxiety and emotional exhaustion (p=0.0009); anxiety and reduction of professionalism (p=0.009) and the existence of significant differences between the four groups of teachers, divided by length of experience relative to the level on the scale of "depersonalization". The highest rates on this scale show teachers with working experience from 10 to 15 years. Such results may be because at this age (approximately 35-40 years) there is an age crisis, a greater emphasis is put on the family and the work goes to the background, as it may be due to a professional crisis, rethinking the importance of their professional activities.

At universities, students can provide their own motivation and can do much for themselves but a teacher still has a crucial and demanding role to play in the process of student learning.

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COPING STRATEGIES OF ADOLESCENT CHILDREN WHO ARE IN DIFFERENT THE CONDITIONS OF HARMONIOUS LIFE

A.S. Sankovskaya
VSU named after P.M. Masherov, Vitebsk, Belarus

In adolescence, there is a process of active formation not only physical and psychological development of the child, but also his coping behavior. Personal development are in progressive dynamics, so it is especially important to conduct a timely psych diagnostic study of adolescents in this age period, especially children in particularly difficult situations.

The aim of the study is to study the strategies of coping behavior of adolescents in different conditions of life.

Material and methods. At the stage of psycho-diagnostic studies we used the questionnaire "Ways of coping" S. Folkman, R. Lazarus [1] as well as the method of diagnosis coping strategies Khaimah (Test Khaimah deal with stress) [2].

Findings and their discussion. The psych diagnostic study was attended by subjects of adolescence - the department of dialysis and extracorporeal

detoxification of the 2nd Children's Clinical Hospital in Minsk, as well as students of grades 7-11 of the educational institution "Novskaya secondary school of Vitebsk district». The results showed that the highest scores among adolescents who are at the hospital and receiving program hemodialysis, according to the "Methods of coping" method, they were registered using such coping mechanisms as "self-control" and "planning problem solving", when they found themselves in a difficult situation, these subjects try not to show their feelings and can hide from others, how bad things are, they are not inclined to impulsive actions, systematically looking for ways to resolve the situation. The lowest score is marked by the flight-avoidance strategy. This indicates that this category of adolescents does not often resort to passive and non-constructive ways of overcoming difficulties (moving away from reality into the world of fantasy, hoping for a miracle, that the situation resolves itself, passion). Similar trends are observed in healthy schoolchildren: the leading coping methods are "problem solving planning" and "self-control", the lowest score is for "flight-avoidance".

A comparative analysis of coping strategies used by children receiving dialysis and healthy adolescents revealed a number of differences. The researched category of adolescent schoolchildren, use methods of confrontational coping; ie, these children are not characterized by persistence in achieving goals, assertiveness, tendency to rivalry and aggressive actions. Largely, these adolescents tend to "distancing" (unwillingness to see the negative aspects of the situation, ignoring them). A higher than normal score on "self-control" in the children undergoing dialysis indicates an unwillingness to openly express their feelings, secrecy, combined with thoughtful and not too hasty decision-making. Also among the children in the hospital, there is an ineffective way of coping with difficult situations - "flight-avoidance": these adolescent children are not inclined to passive "care" from difficulties. The reduced indicator of the "positive revaluation" strategy indicates a lack of ability to find positive moments in a difficult situation, to see in it an opportunity for self-improvement.

Conclusion. Thus, exploring the coping strategies of adolescent children who are in different conditions of life, it should be noted that children who are in more difficult life situations (dialysis in our case) are prone to more thoughtful actions, to "self-control", which showed not only psych diagnostic research, but also proves their behavior: such children in life become "older" from their attendant difficulties. Teenager's schoolchildren, who are characterized by confrontational coping behavior, show a desire for their goals, using aggressive methods of behavior.

Based on psych diagnostic research and in general work with this category of children, it should be noted that all the coping strategies of children that are manifested are the result of their living conditions, their activities, their immediate environment, and the attention of parents, psychologists and educational specialists.

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THE IMPORTANCE OF IDIOMS FOR THE DEVELOPMENT OF PUPILS' SOCIOCULTURAL COMPETENCE

Y. Smakatnina
VSU named after P.M. Masherov, Vitebsk, Belarus

Learning a foreign language is closely connected with understanding of culture and social particularities of native speakers. Idioms interpret culture of another country, its history and traditions. They represent all spheres of people's life. The development of pupils' sociocultural competence can help them to understand people of English speaking countries better, to respect their traditions and customs, to be unprejudiced and tolerant.

The aim of our research is to find out how learning idioms enhances pupils' understanding of English culture, way of thinking, customs and traditions.

Material and methods. While working on the research we analyzed the following materials: Collins Cobuild "Dictionary of idioms", A.V. Kunin "English-Russian phraseological dictionary". Such methods as the descriptive method, the method of the analysis and synthesis of information, generalization and classification were used.

Findings and their discussion. To develop a complex of exercises aimed at teaching and learning idioms it's necessary to understand what an idiom is. An idiom is "a group of words, which have a different meaning when used together from the one it would have if the meaning of each word were taken individually" [1, p. 4].

Idioms can be classified according to different characteristics: type establishing word order, origin, tradition of use, etc. According to the type establishing word order the following idioms can be distinguished:

• phraseological fusion. The meaning of components of such idiom is completely absorbed by the meaning of the whole *(Ex.: To cry for the moon);*

• phraseological unity. The meaning of an idiom is not the sum of the meanings of its components but is based upon them and may be understood from the components *(Ex.: To fall into a rage);*

• phraseological combination (collocation). The components of such idiom have absolutely clear independent meanings while one of the components has a bound meaning *(Ex.: To make an attempt)* [2].

According to their origin idioms are divided into:

• expressions of colloquial everyday speech;

• expressions of professional spheres of usage;

• expressions of bookish-literary speech.

Idioms can describe different spheres of life:

- time;
- social state;
- religion;
- relations between people;
- personal qualities, etc.

Knowing basic information about idioms teachers can develop context-based exercises to help their students navigate in the idiomatic language flow.

For many pupils it is difficult to understand the meaning of idioms especially if they hear them for the first time. Misunderstanding and incomprehension may result in inadequate interaction with representatives of other cultures. These difficulties arise because idioms are closely connected with culture of foreign countries. Language is a part of culture and plays an important role in it. The "referents of language" are the events, states, entities, processes, characteristics, and relations that exist in the culture, whether these are referred to by single words or by phrases [3, p.16]. Thus, forming and developing sociocultural competence is a guarantor of effective cross-cultural communication.

Most teachers pay attention to teaching idioms. The most common method of teaching idioms is context-based. The study also contended that extended context such as stories has a significant effect on learning idioms and idiomatic expressions unlike direct teaching the meaning of the expressions. It is similar to teaching vocabulary: teaching vocabulary in context is better than teaching laundry lists of words alone.

The other method suggests teaching English idioms through the conceptual metaphor. "In order to apply the conceptual metaphor method, English learners need to obtain some knowledge of literature terms such as metaphor, metonymy, simile and personification" [3, p. 19].

The following examples of exercises are aimed at developing students' idiomatic and hence sociocultural competence:

- making *adjective+noun* word combinations and matching them with the correct meaning;
- correcting misprinted words in the idiomatic phrases;
- matching idioms with their definition (synonymous phrases, translation, pictures, etc.);
- filling the gaps with the appropriate idioms;
- guessing idiom meaning from context;
- paraphrasing the sentences using idioms so that the original meanings are retained;
- identifying if the idiom is used in the correct meaning or not;
- dramatizing idioms, etc.

Let's consider some example activities.

Dramatizing idioms. One of the activities aimed at reviewing previously taught idioms is acting out idiomatic expressions. The class is divided into an even number of small groups (the groups represent opposing teams). Each group is then given a set of idioms they had learned before. The groups then take turns

trying to convey the target idioms by using gestures and body language. And the opposing team has to guess which idiom is being acted out. It is important that the teacher selects idioms that can be dramatized easily.

"Eye on Idioms". Teacher selects ten idioms and divides them into two sets of five. Students work in groups. Each group gets one set of idioms with some information about their meaning and usage. Based on the notes, the students are asked to make "Eye on Idioms" style worksheet: an illustration, an example sentence with suggestive context in which the target idiom is gapped, and a list of response options that includes the target idiom and five distractors. They are then instructed to teach these idioms to the other group, which has to select the correct response, guess the figurative meaning of the idiom, and make an example sentence that illustrates its usage. Students enjoy performing teacher's functions. The teacher monitors and facilitates as needed [4].

Conclusion. The process of formation of sociocultural competence is quite time-consuming and arduous. The research has shown that learning idioms enhances understanding of native speakers and their culture and promotes the development of pupils' sociocultural competence. Different exercises can be used to reach the stated goal: matching idioms with their translation, pictures, meaning; filling the gaps with appropriate idioms; combining an adjective and noun into phrase and matching them with the correct definition; correcting misprinted words in the idiomatic phrases; choosing the appropriate idiom.

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TYPES OF EXERCISES
FOR ENGLISH GRAMMAR ASSIMILATION

Tsoa Vey
VSU named after P.M. Masherov, Vitebsk, Belarus

A command of English cannot be ensured without grammar study. The knowledge of morphology and syntax is essential to successful communication whether in writing or in speaking.

The goal of our research is to analyze the methodology of active grammar acquisition and to carry out the comparative analysis of potential possibilities of training exercises for the development and activation of reproductive grammar habits.

Material and methods. When writing this article, the following research methods were used: a critical analysis of literature resources; a scientifically fixed observation of reproductive grammar teaching process at East China University of Political Science and Law and North China University of Technology; talks with teachers and students; study of the teachers' advanced experience at the mentioned above educational establishments.

Findings and their discussion. Teaching grammar is effective if it is based upon the following principles: 1) conscious approach to the teaching process, that means realizing difficulties of grammar patterns presented and their comparative analysis in English and students' native language; 2) practical approach, that demands learning grammar items through performing various exercises; 3) structural approach, that presupposes introduction and drilling grammar items in structures or sentence patterns; 4) situational approach, that means using situations for presentation, training and activation of grammar items; 5) differential approach to teaching active grammar (grammar for communication) and passive grammar (grammar for reading and listening comprehension) [1, p. 172–174].

Effective development and activation of reproductive grammar habits are based on the following types of exercises.

1. Recognition exercises for students to observe a new grammar item in the situation and state its signals for the correct choice of the form. The exercises are very indispensable as students retain grammar material through auditory and visual perception, so auditory and visual memory is at work.

2. Repetitive exercises for students to pronounce the sentence pattern assimilated after the teacher both individually or in unison. Attention is drawn to the correct pronunciation of the sentence pattern as a sentence unit, as a statement (sounds, stress and melody).

3. Substitution exercises for students to substitute words or phrases in a sentence pattern. Students think over the choice of elements for substitution but not over the form itself so that involuntary memory is at work.

4. Completion exercises for students to complete sentences according to the grammar rule assimilated.

5. Transformation exercises that presuppose initial sentences to be widened or shortened.

6. Creative exercises that include creative activity on the part of the student. They bring into action asking questions with a given grammar item, speaking on a suggested topic, dramatizing the text read, making up dialogues using the grammar item covered, commenting on a film-strip, participating in a free conversation. All the exercises of the creative type are designed for consolidating grammar material students need for communication.

Conclusion. As a result of our research we arrived at the following conclusions: 1) the development of reproductive grammar habits must be central in the teaching process; 2) the formation of grammar habits and their improvement is developed on the basis of training exercises.

The main stages of reproductive grammar habits development are: differentiation exercises; imitation exercises; substitution exercises;

transformation exercises, practice in prepared and unprepared speech. All the exercises mentioned above are designed to develop students' skills in recognizing grammar forms during the process of communication, to accumulate correct sentence patterns, to help students to produce sentences of their own using grammar items necessary for speaking or writing.

It should be pointed out that the succession of the exercises are not to be changed. Some stages may be omitted, and it depends on the grammar material assimilated, students' experience or on teaching needs.

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THE USE OF PODCASTS IN LAGUAGE TRAINING

A. Yurchenko
VSU named after P.M. Masherov, Vitebsk, Belarus

The Internet is characterized by the wide spread of social services aimed at communication between people. For example, blogs, wiki, podcasts. In the context of discussed issue the level of students' development of foreign language communicative competence will be determined not only by skills of speaking on a foreign language with personal presence of the participants of communication but also by various services or Internet resources [1, p. 182].

The aim of our research is the formation of foreign language communicative competence.

Material and methods. When writing this article, the following research methods were used: literature review on the subject and its critical analysis, the observation of the teaching process and the work of students of 6 "A" in Vitebsk gymnasiums №1, №2, the analyses of attended lessons.

Findings and their discussion. As a result we may see that podcast is a form of social service allowing listening, watching, creating and spreading audio- and videotransmissons in the world web. On the Internet we can find both authentic podcasts, created for native speakers (f.e. BBC news) and educational podcasts, invented for learning objectives. Podcasts can be from several minutes, to several fours by duration. Students can both listen to and watch being already created podcasts and create their own podcasts on any topic they like. The most effective way to find the necessary podcast is to apply for podcasts Directory, select category of interest and look through the list of podcasts accessible for downloading. For those who study English, podcasts directory is distributed in www.podomatic.com, www.bbc.co.uk.

The use of podcasts in educational process increases greatly students' motivation and demonstrate practical use of language proficiency. Podcasts about Belarus, its tradition, culture, history and etc. will be of special interest for both students and other internet users. Along with the development of communication students will improve

another important skill – act as a representative of your social culture. After observations of lessons we can define following steps in order to see how both students and teacher can use podcasts in the formation of foreign language communication skills.

Step 1. A teacher creates a page of podcasts on a specific topic for his group. The description of a task or project is given on this page for every visitor to be clear what the topic of podcasts is and who is the creator. It's recommended for a teacher to create himself one common podcast. The duration should be 1-2 minutes during which he or she should explain the task in English and introduce the participants of the project – his pupils.

Step 2. Students are offered to prepare a speech where each participant should introduce himself, specify the age, place of living and studying. Then a podcast should be devoted to the selected topic. Teacher's task on the step is to help students to prepare grammatically correct and lexically competent text. Descriptive, argumentative, contrastive-comparative texts are created according to the aim of education.

Step 3. Students can record their speech using web software available on podomatic service. The program allows you to record as many times as it necessary, till the student is satisfied with the quality of performance. Only after that this podcast will be saved on the Internet and become available for all Internet users.

Step 4. This step should be given special attention and time. Each of the podcasts created by students must be carefully listened to in class. During listening corresponding tasks can be done depending on topics and problematic of podcasts.

Step 5. After listening of series of podcasts created by pupils, some tasks can be offered. For example, express your own opinion, role-play dialogues or write a paper work based on the problematic of podcasts.

Conclusion. As we may see, the work with podcasts allows developing such communication and speech skills as to understand and convey the main content and discrete facts, describe participants of communication, give characteristic of personages, make conclusions, make an assessment of received information. The success in using social services on the Internet depends on the competent selection of Internet materials and methodically correct organization of work with it. In assessing of Internet resources you should take into account linguistic and cultural complexity and information value, its responsibility, actuality, degree of novelty, objectiveness. Consideration of these criteria can help students to assess critically Internet materials and select reliable resources for the development and improving foreign language communication skills.

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DESIGN AND MODELLING OF SUBJECT SPATIAL ENVIRONMENT BY MEANS OF DESIGN, FINE AND DECORATIVE ARTS

THE INTERNET OF THINGS AND THE SYSTEM OF A SMART HOME

V. Baranova
VSU named after P.M. Masherov, Vitebsk, Belarus

Currently, information technology plays a crucial role in human life. Active computerization necessitated a revision of the principles and methods of organizing and processing information, as well as the interaction of various devices. One of the most interesting and actively developing concepts is the concept of the Internet of Things. The Internet of Things (Internet of Things) is a new technology that makes the creation of intelligent networks real, connecting billions of objects and devices among themselves and providing information on the state and changes of switching objects. The availability of this information for the analysis and forecast of changes in the state of objects (things) and the ability in some situations to influence their state in a revolutionary way changes the spheres of human activity, as well as the subject and social environment.

The relevance of the article topic is associated with the steady improvement of engineering equipment of residential premises and the increasing number of devices that are involved in the formation of this environment.

The purpose of the study is to consider the concepts of the "Internet of Things" and "Smart Home", as well as to determine the prospects for the development of these technologies.

Material and methods. The main material of the work were periodicals in the field of interior design and scientific papers in the field of design technologies. This study is based on chronological, comparative and descriptive research methods.

Findings and their discussion. The term "Internet of Things" (IoT) was first used in 1999 by a British technology innovator named Kevin Ashton. He used it to describe a system where objects from the physical world can connect to the Internet using sensors.

Rob Van Kranenburg, founder of the European Council on IoT, introduced 4 levels of the Internet of Things for ease of classification:

1. BAN (Body Area Network) - a wireless network of worn computer devices embedded in the body, implanted, attached to the body surface in a fixed position, or combined with devices that people wear in various places (in pockets, on the arm or in bags).

2. LAN (Local Area Network) - a computer network covering a relatively small area or a small group of buildings: home, office, company, institute.

3. WAN (Wide Area Network) - smart cities: public transport, combined into one network and having Internet access; power plants combined into one network and automatically re-distribute the load, etc.

4. VWAN (Very Wide Area Network) is a smart planet where each device can interact with any other.

In this article, we will take a closer look at the concept of a Local Area Network or "Smart Home".

In every modern building (house), to some extent, a large amount of equipment functions, provides life, comfort, comfort, communication and security, creates a full-fledged environment for work and leisure. The "Smart Home" system is characterized by convenient managing these systems and their integration with each other, which increases the functionality of each of them separately.

The prototypes of the Smart Home appeared in 1985 which is much earlier than the Internet of Things: the Unity system was developed in the USA and was designed to control the home security. However, the modern Smart Home is not limited to the security system. It implies a new stage in the Internet development where physical objects can collect and analyze information, exchange data, learn and combine to solve complex problems.

Today the term "Smart Home" usually refers to the integration of the following systems into a single building management system: heating, ventilation and air conditioning; fire alarm, access control system to the premises, control of water leaks and gas leaks; video surveillance system; lighting system; building mechanization (opening / closing gates, barriers, electric heating of steps, etc.); telemetry - remote tracking systems; IP monitoring of the facility - remote control of systems over the network.

In the future, things will be able to keep track of people's health and environment, as well as adapt to daily habits. A table, a bed and even a milk box will transfer data to smartphones and to each other.

Sensors in furniture will be able to collect information about our health and behavior. For example, a chair will be able to track the position of your body and change the shape of your back, relieving tension of your muscles. The table will be able to study the position of the hands and give hints on how to sit correctly in order to maintain posture.

Soon the monitors will appear on any surface. At the moment, there are the first prototypes of flexible screens, which are shown at technology exhibitions. In the future, it will be possible to use screens instead of TVs. Screens could be stuck onto a wall or other surface, and touch-screen monitors will even be located in the armrests of the chairs.

The author of the books "The Internet of Things" and "The Future of Things: How a Fairy Tale and Fiction Are Reality" David Rose described the model of the Smart Home system - CityHome –as a micro-apartment with a changing environment. According to her assumption, this system is a space of 4.5 X 4.5 m that implies the ability to manage a home using a wall-mounted device resembling a regular clock with concentric circles on the dial. Each circle on the dial corresponds to a specific activity. By moving the circles on the dial, you can set a home schedule for the day.

The author predicts that in the morning the room will be rebuilt into morning gymnastics mode: the bed rises to the ceiling, making room on the floor, and a yoga room with an energetic instructor is projected in real time on the whole wall. After taking a shower, the apartment will be rebuilt into kitchen mode.

After breakfast, the desk will come down from the ceiling. Interactive whiteboard on the wall will display the main points of the work done. After several hours of hard work, the host leaves the house for scheduled face-to-face meetings. In his absence, the apartment will arrange cleaning, hiding furniture in the slots in the ceiling and in the walls.

Russian architect Arthur Skizhali-Weiss, working in the genre of architectural fiction and futurology, gave a description of the model of the Future Smart Home depending on the space functional purpose. From his words, cooking in a robotic kitchen will be replacedwith smart technology that can create a dish according to any recipe from the Internet. Kitchen 3D printers with purchased cartridges of edible pastes and powders will be a common option built into kitchen equipment. The bedrooms, according to the author's idea, will be spaces where sleep programming will become possible, and customizable capsule modules for sleep will replace the traditional beds.

Conclusion. This article briefly reviewed the concepts of the Internet of Things and the Smart Home, as well as the possibilities that people acquire when using them. The Internet of Things provides endless opportunities that will enable humanity in the future to obtain the necessary conditions for full prosperity. Currently, applications are being developed in the field of automation and data collection, sensor networks and machine-to-machine interactions, which are designed to significantly improve the quality of life of ordinary citizens. Based on the above, it can be concluded that the concept of IoT in the near future will be involved in all spheres of human activity.

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THE OBJECT-SPATIAL LIVING ENVIRONMENT
FOR PHYSICALLY DISABLED PEOPLE

A. Bobrova
VSU named after P.M. Masherov, Vitebsk, Belarus

Pre-project analysis. Problems of physically disabled people need to be studied to improve the life quality of **physically challenged people,** also for more comfortable life in modern society.

Objective: to find out basic rules of environmentaland domestic design, take into account specific features of wheelchair users.

Design installation (design concept and design scenario). The design concept of the object and space environment is a creation of comfortable and functional inhabited space for physically disabled people on the basis of ergonomicsphilosophy.

The design scenario defines the main situations: a rest area, a storage zone, a working zone, a health-and-hygiene zone.

Design decision. Projection of this object can be defined as theenvironmental and domestic design taking into account the functional and ergonomic requirements. The harmonious esthetic decision will create a positive mood.

The rest area provides a bed placementwith minimum distance from walls to a bed of at least 110 cm and assumes an orthopedic mattress and thepresence of equipped hand-rails. There has to be a bedside table near the bed. A person should open bedside table doors from the bed. It is also necessary to think over good lighting for reading and the common room lighting with an opportunity to switch off\turn on the light without getting up [1].

The bed is recommended to be placed in front of the windowfor psychological comfort.However it is not recommended to place the bed near the window in order to avoid a draft or a heatingradiator which installs under the window.

It is necessary to havea free space area with a 150 cm radius to placethe main objects such as bed, a case, a table in order to turn in a wheelchair. The distance from a bed to an entrance door has to be at least 135 cm. It is preferable to have an adjoining door in a bathroom [2].

In a health-and-hygiene zone it is necessary to use a waterproof tile and also to assign nonslipping waterproof floor(a tile or a vinyl). It is possible to use fluorescent lamps on a ceiling and also the padding turning lamps to light a face. It is necessary to install one-lever mixers: they are simple and convenient in use as some problems may appear with barrier-layer ones.

It is possible to place a mobile bedside table under the sink which uninstalls if necessary. Requirements to a toiletzone include the presence of a folding armrest with soft upholstery and a vertical or angular hand-rail.

It is important to remember about color scale which will create psychological comfort and helpto restore a physical and emotional tone.

Conclusion. The development of the design concept of the object - spatial living environment is based on recommendations intended for the design of the environment and residential premises, taking into account the specific features of people belonging to the limited mobility population: the disabled and the elderly wheelchair users.

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DESIGN CONCEPT OF THE ART OBJECT IN THE UNOVIS STYLE "UPWARD MOVEMENT"

A.Chesak
VSU named after P.M. Masherov, Vitebsk, Belarus

An art object is the object of art, designed for the emotional reaction of the viewer; a non-utilitarian thing created from various materials and objects, conveying the creative idea of the creator through visual interaction with the audience [1].

1. **Pre-project analysis.**

Art objects are taken as a basis for various types of art, for instance, sculpture, paintings, objects of applied art and industrial design. Therefore, they are used not only in interior design, but also in the urban environment in architectural compositions.

Kinetic sculpture is a special type of fine art, originated in the 20-30s of the 20th century. Objects represent carefully designed moving devices based on a spring mechanism or an initial pulse.

The measured rhythm of cyclic movement of a harmonious art object steadily draws attention of the audience more than a static object. [1]

The objective of the work is to study the fundamentals of the dynamics of architectonic forms in the general theory of Suprematism.

The task of work is to develop an art object based on the theory of Suprematism, as well as the author's work of one of the representatives of this trend.

2. **Project installation (design concept and design scenario).**

The design concept of the object is to create a kinetic art object that can generate interest and emotional reaction of the viewer, as well as aesthetic pleasure.

The design scenario is a kinetic art object in UNOVIS style that is placed in an urban environment so that it can be easily viewed from all sides and locations, as well as from the roadway. The viewer has the opportunity to bypass the art object around, examine and study it from all sides.

3. **Project solution.**

The art object was created and developed on the basis of Ilya Chashnik's "Vertical axes in motion" composition. The idea of dynamics and cosmism, as well as the tendency of Suprematism upward to heaven was close to Chashnik. "Dynamism, dynamism and dynamism a thousand times is the basis and essence of Suprematism as the non-figurative art and a thousand times my basis" - said a novice avant-garde artist [2].

The art object is a glazed rectangular box, inside which the volumetric rectangular shapes located on the vertical axes create movement up and down (Figure 1). The movement of elements is created by the electric motor. The art object also has lighting elements, which makes it look outstanding and interesting in the evening. Thus, Chashnik's composition comes to life in this art object.

Figure 1. Art Object "Upward movement"

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MURAL "MY NATIVE VERKHNEDVINSK"

N. Dahil, A. Konoshyonok
VSU named after P.M. Masherov, Vitebsk, Belarus

The topic of street art has become relevant for critics, reviewers, specialists in the design of the cultural environment of the city since the beginning of its existence (1960s-1970s). It is relevant to this day. But the greatest distribution came at the beginning of the 2000s. there was a certain freedom in many areas of life, including street art conquered its niche in the urban environment [1].

The peculiarity of this type of "urban decor" is that a person does not need to go to the gallery or to the exhibition. Street art adorns the look of the old city walls, building fences, abandoned buildings, and even entire factory buildings.

Murals, in turn, are the direction in street art, it is not just a composition or fonts on the walls, it is an illustration or a picture that carries a certain meaning, laid down by the artist.

1. Pre-project analysis. Street art (eng.Street art - street art) is a trend in modern visual art, the distinctive feature of which is a pronounced urban character. The main part of street art is graffiti (otherwise spray art), but one cannot assume that street art is graffiti. Street art also includes posters (non-commercial), stencils, various sculptural installations, etc. The artist creates his own stylized logo - a "unique sign" and depicts it on parts of the urban landscape. The most important thing in street art is not to assign territory, but to engage the viewer in a dialogue and show a different plot program [2].

Mural (Mural) - is a great work of art, most often a picture or a huge "graffiti", applied to the surface of the wall. Similar images are present in many large cities. As a rule, they are placed on the deaf walls of houses, on large fences or in underground passages. In fact, any surface, no matter where it is located, outside the building or inside, can be suitable for creating a mural [3].

The purpose of the work is to identify the principles and patterns of creation of murals, for the design of the urban environment.

The main task is to develop a sketch and perform a mural on the theme "My nativeVerkhnedvinsk", for the decoration of the building of a children's art school.

2. Project installation. The design concept is to create a triptych that reflects the historical stages of the development of the city of Verkhnedvinsk.

The work is done in three storylines. The first plot depicts a pure natural beginning, i.e. nature, filled with life, without human intervention. Unplowed field, wild horse, clear sky, the source of the river Drissy. In this composition, there is an old slavicsymbol of thunder (Perun sign), a symbol of lightning. Lightning, as the source of life. Composition complements plain ornament, composed of simple geometric shapes.

The second plot shows the first settlement of people at the confluence of two rivers - Drissa and Dvina. "Untouched Earth", from the first plot, turns into the second, where it turns into a plowed land, with the first green sprouts of cereals. The land around the settlement is shrouded in alternating patterns symbolizing the plowed and unplowed land. The dominant element of the composition is presented in the form of a fusion of the sun and the moon, as a symbol of the unity of nature and man.

In the third plot, the archaic wooden city from the second plot turns into a city with modern architectural buildings. Against the background of sunset, an equestrian horseman is depicted, with a spear lowered, symbolizing the peaceful coexistence of nations.

The design of the script reveals a different visual perception of the mural: passengers of passing buses perceive this composition as a whole; a passing pedestrian perceives the composition by scene; and the standing viewer examines each story in detail.

3. Design solution. Sketch design of the mural for the wall decoration of the art school in the city of Verkhnedvinsk was made according to the developed design concept. The surface of the wall was primed in three layers of acrylic primer of deep penetration. The layout of the plot plot was made in blue chalk, since it is easily erased and at the same time leaves no stains. The color scheme and selection of color schemes were carried out according to the developed color-graphic solution of the design concept of the thematic composition "My native Verkhnedvinsk". Staining of the base planes of the composition was carried out in two layers using a roller, so it has more area of contact with the plane of the wall. The detailing of individual fragments of the plot composition was made by different colors using brushes of different sizes (picture 1). Nitro-based markers of white and black colors were used for graphic design of the work, and some elements were painted with gold-colored acrylic paste (picture 2). To perform the main works, the front acryl "Kaparol" and coloring pastes from the company "Kolorika" and "Condor" were used.

Conclusion. This technology is widely used in the design of the urban environment in different countries of the world, including Belarus. Murals can be considered as one of the new directions in the design of the subject-spatial environment, while studying this discipline as "Monumental-decorative techniques in architecture". Second and third year students of the specialty "design" of the Voronezh State University named after P. Masherov can use this technology during summer practice, to decorate the walls of schools, kindergartens and other public institutions. The use and combination of various art materials to create a single thematic composition, expands the range of creative possibilities of students**.**

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Picture1.The central part of the triptych

Picture 2. Mural "MY NATIVE VERKHNEDVINSK"

EQUIPMENT CHILDREN'S AREA

A. Fenko
VSU named after P.M. Masherov, Vitebsk, Belarus

Children's playground is an integral element of the improvement of residential areas, city courtyards, however, despite the advent of new technologies in the construction, standard city courtyard: slides, swings, sandbox - often remain still gray and inconspicuous, so our eye is used to these "glands". Sometimes we do not even imagine, how much they need children. After all, even the word "accomplishment" itself suggests the construction of benefits for the younger generation: to stimulate interest in games, develop the mental and physical abilities of the child, emotionally enrich his mind.

1. Pre-project analysis. There are several companies in Belarus, engaged in the development and production of children's play complexes, made of metal with a polymer coating of plastic and wood. But in design and color solutions, they often do not meet modern requirements and cannot compete with foreign manufacturers of such equipment. The main thing in our opinion, is that "a toy play" wore not only its functional purpose, but also had an associative-shaped solution.

One of the normative documentsregulating the establishment of playgrounds for children is СТБ 614-2007 "Equipment for children's playgrounds.General technological conditions". This standard is a European standard adapted to the Belarusian reality.It contains classification of children's play and sports equipment recommendations for its design and placement safety requirements. The standard applies to stationary equipment in outdoor playgrounds intended for individual or group use by children of preschool and school age.

The goal of the project is to study current trends in the design of children's play equipment.

The main task of design-design is to develop and create a design project of associative-figurative equipment for the improvement of children's playgrounds.

2. Project installation (design concept and design script). The design concept of the project is to create low-cost and functional equipment using environmental materials.

The design scenario defines the main function of gaming equipment - developing. The site attracts children of different ages, since it is not decided for children what they have to do to have freedom of imagination for activities.

3.Design solution. Based on the requirements and recommendations of the regulatory document СТБ 614-2007, the development of a design project of child-like emotionally-shaped gaming equipment for the improvement of residential areas of premises settlements of child-care preschool, school and medical institutions on playgrounds (see drawing 1, 2 and 3).An edged board

with a section of 30 * 180mm is used as a module that allows you to create an unlimited number of combinations. All wooden parts of the equipment have a protective and decorative paintwork. Modules have rounded corners which reduces the risk of injury. The rough surface of wooden parts should be more than 60 microns according to ГОСТ 716. According to the requirements of regulatory decrees, the wooden parts of the equipment are bolted together with gates have a corrosion-resistant coating and are protected from self-unscrewing.

Conclusion. It is hoped that over time, gaming equipment of various forms and forms will appear that will help designers to better develop the yard areas, and children will enjoy their stay in their yard. This approach to the development of equipment for children's playgrounds can be used by students of the specialty design Vitebsk state university named after P. M. Masherov in the implementation of design projects design of children's subject-spatial environment.

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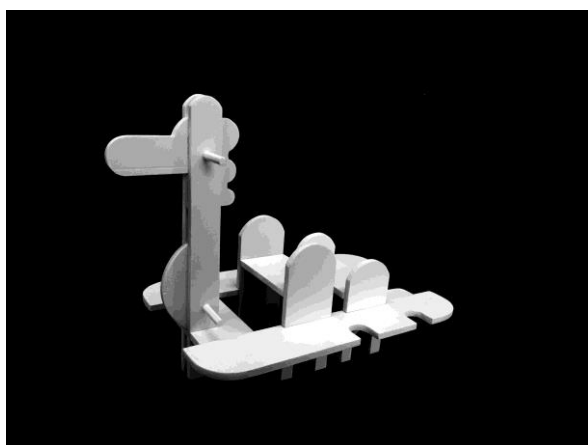
Рис. 1. Верблюд.
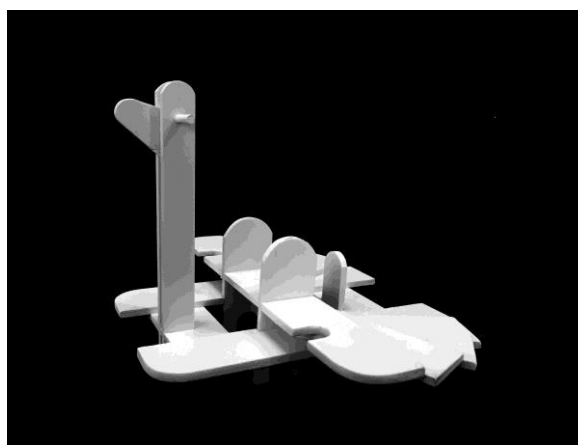
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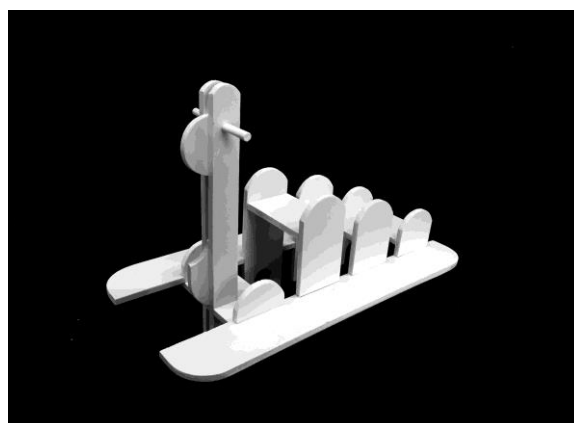
Рис.3. Жираф.

DEVELOPMENT AND CREATION OF FURNITURE FROM CORRUGATED CARDBOARD. TABLE "PINEAPPLE" AND CHAIR "GEOMETRY"

A. Galynya, A. Pushkel
VSU named after P.M. Masherov, Vitebsk, Belarus

Corrugated cardboard is packaging material used in industry and business, characterized by low weight, low cost and high physical parameters. A special feature of the production of corrugated cardboard is the possibility of using paper and cardboard obtained from waste paper, which is positive in terms of saving resources and protecting the environment.

1. Pre-project analysis.

The relevance of the project work. There is an urgent environmental issue in the modern world. Therefore, such material as corrugated cardboard is rapidly gaining popularity among designers. Using cardboard you can make furniture, packaging, lamps and many other things.

The purpose of the project work is developing and creating furniture made of corrugated cardboard, which will be a unique part of the interior, stay eco-friendly and preserve functionality.

2. Design installation (design concept). The design concept of the table "Pineapple" is creating an emotionally-shaped piece of furniture (table) with the use of eco-friendly material - corrugated cardboard. This table will fit into the environment of a modern interior.

The design concept of the "Geometry" chair is the formation of an ergonomic, eco-friendly and affordable piece of furniture. This chair can be used in functional areas of different interiors.

3. Design solution. The table "Pineapple" consists of two modules, which are connected into a single structure by joining corrugated cardboard sheets end to end. The end result is a holistic figure in which the image is clearly read. At the same time, this design is functional and aesthetic.

The chair "Geometry" is made by superimposing and gluing modules (circles) together that vary in diameter. This piece of furniture combines such eco-friendly materials as wood and corrugated cardboard. The name of the object is explained by the combination of such geometric shapes as a cube and a truncated cone.

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FOREIGN EXPERIENCE IN DESIGN EDUCATION

K. Lopacheva
VSU named after P.M. Masherov, Vitebsk, Belarus

A distinctive feature of the systems of preparation in the EU is diversity and variability. According to one of the contracts, the countries of the European Union retain the sovereignty of their educational systems, which have strong national traditions and develop under the influence of local and sectoral features with the participation of social partners.

One of the most important features of foreign education is the possibility of training a person throughout his life. This trend has become particularly relevant at the present time, due to the demographic aging of the population and the increasing need of people for knowledge at any age.

The relevance of the topic is due to the inclusion in 2015 of Belarus in the European Higher Education Area (the Bologna process). As a result, our country has committed itself as a whole to follow the principles of building this educational space and to make the national higher education system understandable and transparent forother countries of the European continent.

The purpose of the article is to determine the characteristic features of design education in the leading countries of Europe, America and East Asia, to find the comparative differences between these programs, teaching methods and models of specialists.

Material and methods. The basic material of this study is the official websites of foreign educational institutions and articles of periodicals. The methodology of this study is based on a comparative and systemic approach to the process of learning.

Findings and their discussion. The development of English design education dates back to 1944, when the design council was created under the government, for the development of which the state still allocates funds. According to the program of this Council, the number of students admitted to universities should meet the needs of young specialists of this profile and is limited to strictly defined numbers. The system of English design education today covers more than a thousand courses in various aspects and areas of design, which are taught in 188 educational institutions. The training of specialists in the UK is differing by a

commitment to tradition in education; the study of engineering disciplines for designers related to production; increased attention to the creation of an attractive appearance of the samples, their ease of handling and ease of operation; the presence of social responsibility for the formation of the environment.

Over the years, principles of engineering and design education have been developed here, based on the idea of the innate sense of form and color in each person. According to this idea, one of the tasks of teaching in kindergarten was the development of creative and design skills in a child together with the assimilation of the principles of goodness and humanity. Children in the UK from an early age learn to set tasks and solve them. As a result, both student and professional projects are characterized by a special aesthetics, which can be described as the aesthetics of humanity [1].

Education in English schools has set itself certain goals: the desire of children to conduct scientific research, the development of their thinking and imagination, the organization of independent work, the evaluation of its results, their embodiment in life, representation and protection. This practice leads to the formation of future generations "inborn sense of design."

The specifics of the development of design in France is the performance of governments as the main customers for large design projects. The government adopted a resolution on the long-term development of artistic design of products and the training of design personnel in the country [2].

Much attention is paid to the development of the exchange program and the relationship with various firms and industrial enterprises, foreign educational institutions. Upon admission, all students, regardless of their previous education and practical experience, are divided into project groups, where they organize their work, determine the program of activities on projects, often in contact with industry. Students also learn to gather information, analyze sources and data, establish personal contacts, determine their level of knowledge.The curriculum is built on the basis of "modular elements" of various lengths and saturations. Each student has an individual program. There is no common annual curriculum; students create their programs in accordance with their individual tasks and needs, as defined upon admission and subsequently approved by the curator. At the state level, there is a system for predicting training, skills and qualifications, and professionalism.

Design education in Italy is made up of art schools that are not widely distributed throughout the country and connected to a sustainable system of educational institutions and educational programs. But the most effective and original form of organization of design education is a school operating within production, engaged in real and paid design; the school in which the design process is implemented, and not imitated.This form of education has determined the features that make up the peculiarity of the Italian line in design: high, professionalism and realism of design design, which gives the best examples of Italian design a kind of classicism [1].

Much attention is currently paid to design in Japan. Creative education in this country has the following areas: the relation of tradition and modernity;

interest in western (Euro-American) design. The designer, according to the Japanese, should have a thorough knowledge of the production and the market situation. The order of education is under strong state control. Japan refers to the design college and university as a place for education and research. The main task of design students is to focus on the needs of industry, the study of technology, the humanitarian needs of society, and culture. Educational institutions of the country take care of the thoughts and feelings of each student. Hence, some organizational features: in design schools, students are grouped into small groups, which allows teachers to pay more attention to each of them [3].

The United Professional Designers Society of the United States, for the development of which the government allocates substantial funds, contributes to the development of professional requirements for a designer, protecting his interests, raising the level of design projects, holding contests, and building relationships. The basis of the educational policy is the national programs, the credit system and, on its basis, the certification of graduates of educational institutions. The main trends in design education in the United States are internationalization, an emphasis on the social and civic aspects of education, the need to develop students' critical thinking skills. The task of teachers of American universities is to transform students from knowledge consumers into knowledge producers.

Conclusion. Foreign experience in obtaining design education in the modern world is considered not only creative, but primarily an intellectual process, which is based on theoretical disciplines, research activities and practical skills. Training of design students involves important social and aesthetic problems with the subsequent creative solution of these problems.

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THE FEATURES OF NEW MEDIA ART

M. Martynova
VSU named after P.M. Masherov, Vitebsk, Belarus

The rapid progress in science and technology has a huge impact on all types of human activity and art culture in particular. There are new forms of technically oriented art, which goes side by side with the formation of a new type of artistic consciousness. The powerful influence of information technology progress is reflected in the psychology of perception and the way of thinking of

modern man. At the same time, traditional means of art expression are being transformed, the language of art is changing, new types of art are emerging on a modern technical basis. So, digital computer technologies transformed the structure of the visual arts, and it's led to the question of rethinking the place of media art in the arts system. It's determines the actuality of research.

The purpose of the research is studying the artistic and aesthetic features of digital art.

Material and methods. Various theoretical sources were used as a material for the study, such as philosophical, artistic, psychological, cultural, sociological works of native and foreign researchers. Also art works created using digital technology were the material of the research. The following methods were used in the work:

- general scientific methods, such as theoretical comparative analysis, classification, synthesis;

- a retrospective analysis aimed at identifying the formation and development of media art;

- grapho-analytical methods used in the analysis of media art works.

Findings and their discussion. Digital art has gone through several stages in its development. Starting from simple technical experiments and reproduction of world artistic masterpieces, the art of new media has come to be introduced into many spheres of human existence. It originated from scattered narrow branches and developed into an interdisciplinary phenomenon that combines most types of art. Having tried its destructive forces, undermining the well-established ideals of traditional visual art, it changed the vector to create a human-friendly environment in which the viewer can become a creator, and artists unite to enrich creativity. The art of new media becomes a marker of post-technological culture, in which the borders between science, technology and art are erased, and the traditional categories of subjectivity, space, interaction and communication are subject to revision.

Media art attracts researchers. Nevertheless, its variability and hybridity make it difficult to create a single scientific concept describing its phenomenon. Starting from Walter Benjamin and his summary "The Work of Art in the Age of Mechanical Reproduction", written in 1936, and ending with the work of Michael Rush "New media art", published in 2018, theorists and practitioners of art try to give the clearest characteristics of media art. Lev Manovich deserves special attention. He identifies five main features of new media art in his work "The Language of New Media": numerical representation, modularity, automation, variability, and transcoding [1]. The characteristics described by him are the core of the works of the digital age. However, these features don't provide exhaustive information for understanding the art of new media. This limits their study to the research of software only.

Interactivity is an important characteristic of media art. It animates digital art, bringing it closer to a human. And besides considering art from a purely

technical point of view, we are shifting the emphasis to real interaction, which causes a whole gamut of feelings and experiences [2]. This is the fine line where a virtual reality appears. And it does not replace the real world, but enriches it, giving a person great opportunities.

Involving a person in the process of creating works of art, the art of new media is raising a wave of social activity, which is reflected in various fields. The themes of the art of new media seem limitless and unpredictable in future.

The great opportunities that a person possesses in the era of information technology progress make it necessary to increase the level of social responsibility and ethics. So the problem of authorship, authenticity, circulation in media art, generated by the technical side of the issue, is often solved (or not solved) by means of moral principles.

Conclusion. Media art is the actual problem field of modern aesthetics and art history. However, the changes which occur on the wave of technological progress every day, don't allow us to talk about modern forms of media art in the framework of a single scientific concept. Though we can mark such characteristics as interdisciplinarity and interactivity which unite art of new media.

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USE OF LEDS. FILTER-JUG "DROP" FOR WATER

A. Pushkel
VSU named after P.M. Masherov, Vitebsk, Belarus

Nowadays there is a huge number of items with built in LEDs. The modern world cannot be imagined without this light source. LEDs can be used not only for lightning. They also create various illusions and effects that designers can use in their projects.

1. Pre-project analysis.

The relevance of the project work is defined by increasing LED popularity among designers. LED lighting is the most energy efficient and environmentally friendly lighting method, which is mainly digital lighting and has many advantages.

The purpose of the project work: to create a unique household item using LEDs, which will combine functionality and aesthetics.

The design concept of the project is the formation of the emotional and spatial image of the product (filter-jug), which has a functional and aesthetic integrity and which is an original element of the subject-spatial environment. An

integral part of the concept is the use of modern energy-efficient technologies in design.

Design Solution. Filter-jug "Drop" for water is a symbiosis of practicality and aesthetics. The object includes a filter itself, as well as a stand in the form of splashes of a drop. The filter is used for water purification and as a lamp at night. A distinctive feature of this filter-jug is its shape. It looks like a drop of water that seems to fall down and splash in different directions. The material that the filter is made of is glass. It symbolizes purity and clarity of purified water. The night light has a replaceable illumination in the form of a built-in element with LEDs, the color of which may vary depending on the owner's desire.

The purpose of using the light elements in this object is to examine better the process of drinking water filtration with the help of illumination.

In the course of the project work, the possibility of using LEDs in a water filter for both practical and aesthetic purposes was identified.

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TYPOLOGY OF THE CONCEPT OF "REALITY" IN THE CONTEXT OF DESIGN ENGINEERING

A. Sergeev
VSU named after P.M. Masherov, Vitebsk, Belarus

The prevailing conditions of the modern world, whose image has changed beyond recognition with the advent of information technology, requires clarifying the fundamental concepts of human existence in the environment [1].

Today, the concept of "reality", treated as a real existence, is not fully of describing the existing world. Technological progress has broadened the scope of this interpretation of "reality" and requires substantial clarification.

Today, when setting a designing problem in the design engineering of a subject-spatial environment, it is necessary to specify the concept of "reality" for which the object is modeled; is it possible to existence an object in complete isolation from the material (physical) world, or does the projected object somehow interact with it.

The purpose of this study.Define the main differences between the concepts: environment real, virtual environment, mixed reality, augmented virtuality and augmented reality.

Material and methods. The materials of the research are works in the field of the theory of philosophy and design, the history and aesthetics of design, works on modern physics. Methods: systematic and historical approach to the formation of technical concepts in design, the method of analogy.

Findings and their discussion. Reality as a philosophical concept refers to a category understood mainly intuitively, which is emphasized in its limited or indefinite interpretation.

On the contrary, the concept of "reality" in the information environment is quite clearly formulated and has quite specific boundaries. Illustration 1 shows a schematic diagram of the distinction between environment real and virtual environment as they interact, where the extreme points are the physical and virtual worlds in their pure form.
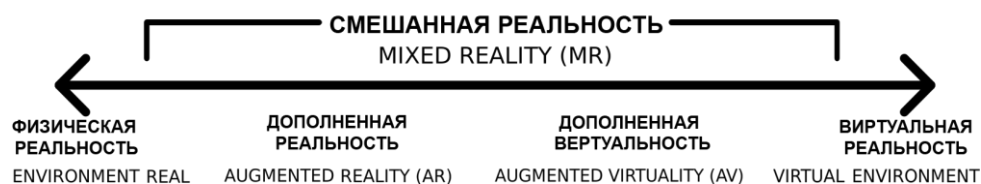
Illustration 1

Environment real, material reality. The material world with objectively existing phenomena and facts [2].

Virtual environment is a world created by technical means and transmitted to a person by means of hearing, sight, touch, etc .; perceived by man in real time.

Before the era of computer technology [3], virtuality was perceived as a philosophical category, where an object or a state that did not exist in physical reality could have arisen when certain conditions were created [4]. In the technical embodiment, this concept was is not only transformed, but also differentiated into separate groups. Thus, the virtual world through technical means begins to exist not only in isolation, but is also able to interact with the objective-material world, which gives rise to a mixed reality, where digital objects and the physical world interact in real time.

Mixed reality is a medium of contact between the real and virtual worlds. As a result of the development of mixed reality technology, there is an internal differentiation into augmented reality (which partially replaces the physical

world, imposes virtual objects and images on it) and augmented virtuality (real objects only complement the virtual world).

Conclusion. The information revolution of the end of the XX century opened a person a new, not yet fully studied, area of existence and communication interaction. Therefore, when organizing the design process of the subject-spatial environment, it is necessary to take into account all aspects of human interaction with the "reality" in which he will be immersed design tools.

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DESIGN PROJECT MODULAR PARTITION FROM CORRUGATED CARDBOARD

N. Starzhinskaya
VSU named after P.M. Masherova, Vitebsk, Belarus

In modern times, the issue of recycling waste in order to obtain various kinds of materials and products is very topical. Corrugated cardboard is among the materials obtained by recycling. It is produced by recycling waste paper and is ecologically natural. This material has a low mass, has a low cost and good physical properties, so corrugated cardboard is mainly used as a packaging material [1]. After performing its function of corrugated packaging, they do not represent actual value, but they say everything in our world has its own value. Nowadays, corrugated cardboard packaging has become reusable. From such packages create furniture, partitions, lamps, gaming equipment, art objects, etc.

1. Pre-project analysis. Partitions are an important part of the interior and are designed for zoning space, and also perform an aesthetic function. When choosing a design, it is necessary to take into account the dimensions of the room in order for the partition to be suitable for the room - not too large, but not too small. In this regard, the most universal are modular partitions. Using modules, you can easily vary the size and change the shape of the partition, which opens up opportunities for their use.

The purpose of the work is to identify the basic principles of the construction of modular partitions.

The task is to manufacture a modular partition in accordance with the developed connection scheme of the modules.

2. Design installation (design concept and design scenario). Design concept. The partition is designed for use in public areas. The concept is based on the creation of a product that, due to its structure, it emphasizes the texture of corrugated cardboard as much as possible, and it is also convenient to move due to its low weight and size. When developing the design, the following factors were taken into account: mobility, stability and reliability of the product, light weight, small dimensions.

Design script. Depending on the circumstances, the partition in the space can occupy different positions.

3. Design solution. The main task, based on the foregoing, is the manufacture of a modular partition. The module is a spatial cube-shaped structure with protruding elements that allow you to connect individual parts into a complete structure (see Picture 1).

Pic. 1 modular partition

Each complete module consists of six elements made of reamers, which were developed in Chicago by Andrew Wilson, this modular system is called Bloxes [2]. The element sweep is presented in Picture 2. The number of elements required for each specific module is determined by its position in the partition design and varies in the range from 2 to 4 pieces (Picture 3). Two elements are connected by linking a special hook on one of them and a hole that is located in the middle of the other.
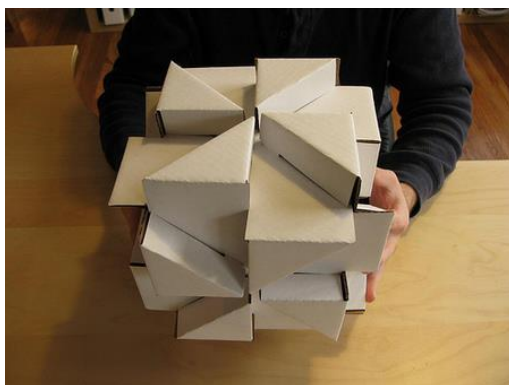
Pic. 2 Scan   Pic. 3 Full module

Using the modular system Bloxes, you can create objects of different structures, for example, in the form of a square, rectangle, trapezoid, etc., and different degrees of transparency. This design project involves the manufacture of partitions in the form of combined diamonds. The partition has holes which are formed due to the features of the object assembly technology, that why the partition wall looks translucent, not massive, and is intended mainly for space zoning, rather than for masking any interior parts or storage functions. The partition shown in Picture 1 consists of 72 modules. 256 elements were used to assemble the modules.

Conclusion. On the example of this work, you can see that the reusing of corrugated cardboard allows you to make a modular partition, and other objects, without wasting any resources, except time. Therefore, this material is very convenient and is actively used by students of the specialty "design" VSU named after PM. Masherov for the manufacture of a variety of art objects for the Design Week at the HGF.

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DESIGN CONCEPTION OF OFFICE FURNITURE FOR "GREEN BANK" NETWORK OF BANKS

A. Vronskaya
VSU named after P.Masherov, Vitebsk, Belarus

Creating a design project for a bank environment plays an important role not only in terms of the company's image, but also contributes to guaranteeing the quality of services provided by financial institutions. The development of the design conception of furniture for banking premises was carried out on the foundation of the basic principles of the design methodology in three stages [1].

1. Pre-project analysis. The bank is a major credit institution through which hundreds of people pass every day. Therefore, its interior and equipment should be original, pleasure and comfortable not only for visitors, but also for bank employees. Correct organization of the workplace and space saves time, prevents fatigue and improves productivity.

The purpose of the work is to study the right organization of workplaces for bank employees, as well as comfortable furniture for bank visitors and the development of convenient and original furniture.

2. Project installation (design concept and design script). The design concept of furniture for the eco-bank is to use environmentally pure materials (wood, glass, natural textiles and ceramics) and creation an image during

shaping, resembling the trunk and leaves of bamboo, taking into account ergonomics, efficiency and high adaptability.

The design script defines the main situations: an open cash room, individual workplaces, a waiting area for visitors, an information zone, which are distinguished by original decision and connection with natural forms.

3. Design Solution. The design of this object can be defined as an object of formation and structurally consisting of the formation of the visual, anthropometric and material structures [2].

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DESIGN CONCEPT OF LIVING ECOSYSTEM

K. Zenkova
VSU named after P.M. Masherov, Vitebsk, Belarus

The design and analysis of the design concept of a living ecosystem was carried out on the basis of the principles of the design methodology in three stages [1], in which the systems approach and the structural analysis method lie.

1. Pre-project analysis. One of the basic concepts of ecology - the ecosystem, or the ecological system - has become widespread in the field of design, as an artificial environment created as a result of human activity. Examples of man-made ecosystems include urban and residential space. The formed principles of the modern ecological attitude to the formation of the residential ecological

environment are associated with the systems approach, which was actively established as a professional look at the object of design activity [2]. These principles take into account the creation of a holistic environment, including the structure itself and the surrounding space, the harmonious unity of functional, technical and aesthetic aspects, naturalness, and relevance of the artistic image of the environment. The goal of the work is to study the principles of designing a residential ecosystem as a holistic subject-spatial environment, to analyze the created author's design concept of a residential ecosystem within the framework of a systems approach.

2. Design installation (design concept, design program, (design scenario). The basis for creating a design concept is the definition of an artistic image that occupies an important place at the initial stage of the design process. The artistic image of the ecological residential system created by the author is autumn nature or the period of "golden autumn" (end of September - mid-October), during which the foliage on the trees acquires a multicolor rich color. This season of the year is transitional when there is a decrease in daylight and gradual However, it is precisely this period that became a symbolic reminder of the main problems of designing a living environment, such as the active use and preservation of solar energy.

This artistic image was stylized into a formal composition, which became the basis for further color-plastic development of a residential ecosystem and included the following features:

- in spite of the fact that initially the artistic image was taken from nature, plastic was chosen for further design as straightforward, since the idea of the image of nature was viewed in a broad, not literal sense. The image of nature in this concept is an emotional state, not a direct copying of plastic solutions. The emotional state of the autumn nature as an artistic image - balance, calm, regularity, precise rhythm, some severity of repeating elements; - a calm range of beige shades in combination with rich accents of red-burgundy, orange-terracotta and light green colors;

The design concept of an ecosystem should be defined in an artistic way - the use of minimalistic, concise solutions, the choice of the necessary compositional means, such as module, rhythm, scale, proportion, the ability to apply quick and easy transformation, reconstruction, unity and visual connection with living nature.

After determining the design concept, a design program should be developed that will determine the elementary procedure for developing a qualitatively new aesthetic environment of a residential ecosystem:

- the possibility of construction with minimal costs and maximum housing performance;

- the use of modular elements. This need is due to the psychological desire of modern man to easily change the surrounding space, depending on their individual preferences;

- high aesthetic indicators, which will correspond to modern architectural and interior trends on the one hand, and on the other hand, evoke a feeling of comfort. This living environment should not be "cold" in the psychological sense of this concept;

- visual connection and unity with wildlife.

The program finds its specification in the design stage, which will determine the types, nature and purpose of specific design methods and tools, such as the ability to use natural, renewable resources, consideration of natural and climatic conditions, the use of low-cost local materials, such as wood, economical design systems, such as frame. An important part of the design development is the use of modular elements, a clear repetitive rhythm, the choice of a strict rectilinear solution. High aesthetic indicators of a residential ecosystem are based on such concepts as conciseness, unity of the constituent components, integrity of perception, visual connection with living nature.

3. Design solution. After studying the problem of aesthetic formation of a residential ecological system, a new design concept can be proposed in the context of the development of the Republic of Belarus. At the heart of the design is a simple geometric figure - a square and its doubling, which is a design module (Image 1). Because of this, the elements of a house in an ecosystem are interchangeable and can be easily put together in various designs for quick redevelopment. The module consists of a double-sided shield, in which, on the one hand, the glass unit is fixed, and on the other, various facing panels containing heat-insulating and sound-proof materials. From these panels both the external structure of the house and the internal division of the interior space can be made. In this house there are no capital walls and partitions, the whole division of the interior occurs due to the arrangement of the panels with each other, combining the idea of traditional frame construction and easy transformation. This structure can be either single-level or two-level. A large area of glazing has a visual connection with nature.

Image 1 Design concept of a modular residential ecosystem.

In conclusion, it can be noted that the system approach used in the design allowed to study in more detail the problems of the formation of the aesthetic ecological space and create a qualitatively new image of the object-spatial environment of the residential ecosystem.

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THE GAME AS A MODERN WAY OF COMMUNICATION

A. Zitkovsky
VSU named after P.M. Masherov, Vitebsk, Belarus

In modern times, a computer game has acquired the status of a cultural phenomenon, a commercial product, and many compare modern computer games with a new kind of art. More and more games are being developed with a focus on the online mode, thereby generating new types of communication technologies. To understand the impact of computer games on communication processes, you need to define the concept of "communication". According to the culturologist, Sadohina, communication is "a socially determined process of exchange of information of different nature and content, transmitted deliberately through a variety of means, which aims at achieving mutual understanding between partners and is performed in accordance with defined rules and regulations" [Sadokhin, 2014].

The aim of the work is to determine the communicative component in modern computer games and whether it is possible to consider a computer game as a way of modern communication.

Material and methods. The material for the study were multiplayer computer games. Methods used: search, analytical, generalizing.

Findings and their discussion. More and more modern computer games are distributed on the Internet. Not so long ago, a permanent connection to the Internet, as well as the formation of gaming communities, not many games of the genre required "MMORPG" (mass multiplayer online role-playing game), in such games, the process was based on the collective interaction of players with each other, that without combining common efforts and mutual assistance it is impossible to achieve any results. At this point in time, almost every significant game is accompanied by the creation of a "community" so-called gaming community. In modern times, the creation or launch of the next game is initially accompanied by the creation of fan groups in social networks, as well as discussions on forums in order to attract a potential audience. Therefore, the output of the next project for him fixed a certain Fan base. Every day the percentage of users playing online games is growing and with it increases the level of socialization of the game components. These factors have recently been the main ones when choosing a game project. People will choose a game that can be played with friends or where they will be surrounded by people with similar interests.

Therefore, modern developers of computer games devote a lot of time and money to the development of "in-game" communications between players. Having determined that communication in the game is one of the important elements, it remains to find out what forms of communication can be found in games?

We can distinguish the main forms of modern communication: intrapersonal, intra-group and mass.[Sadohin, 2014]. Now let's look at these types of communication on the example of computer games. Intrapersonal communication occurs in the communication of the individual with himself. Basically, this type of communication is manifested in the game in single (singleplayer) games. Interactivity plays a key role. Allowing the player not only to make decisions, but also to see the result of his actions. Puts the player in front of a moral choice. Intra-group communication is a set of different types of communication occurring in small groups. The number of such groups ranges from 2-3 to 20-30 people [Sadokhin, 2014]. For this type of communication suitable game with a cooperative type of passage, or multiplayer. Successful completion of the game is impossible without knowledge of the gameplay, as well as coordinated interaction, coordination of their actions and a clear understanding of the role in the team. One of the most striking examples of mass communication is the MMO game. The gameplay is based not only on the interaction within one group of players (clans, guilds, communities), but also in the communication between many such groups of players.

Conclusion. We have considered the main types of communication on the example of computer games. The result showed that modern games take over the functions of different types of communication. Thus, we can conclude that the game is one of the ways of modern communication. This view of computer games allows you to open up new ways for further research, as well as to use some aspects of gaming activities as examples of the interaction of players in certain situations to achieve their goals.

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HISTORY, THEORY, PRACTICE AND METHODOLOGY OF VISUAL ARTS TEACHING

THE INTERACTION OF GENRES IN BELARUSIAN PAINTING IN 1970–1980

Y. Fedorets
VSU named after P.M. Masherov, Vitebsk, Belarus

In researching develop of Belarusian paintings in1970–1980 important to trace artist's combination of different painting genres in the picture. For example, the image of the food, domestic things were completed with the image of a person, a fragment of the interior, landscape. In these works we consider a synthesis of painting genres – still life and portrait, still life and interior, still life and landscape. Belarusian painters reflected the spirit of the time, revealed national features and figuratively expanded both genres in new qualities for them through a combination of still life and landscape.

The purpose of the article is research the synthesis of still life and landscape genres in Belarusian painting of the 1970-1980s. This combination of painting genres in this period found its form and reached the highest image that were performed by artists.

Material and methods. Paintings of Belarusian artists of the 1970-1980s were taken as material in article. The interaction of painting genres are studied on the example of still life and landscape in a picture with the help of inductive, analytical, stylistic methods.

Findings and their discussion. Still life and landscape are distinguished by the decision of their pictorial tasks: the structure of the composition, the plastic language of the painting. But since the 1950s, the trend of combining genres in Belarusian art is often revealed. It is important to note that landscape is a secondary element in relation to still life, because the still life is the object of the image in the picture. Conjoint genres have on each other stylistic, plastic, image influence.

The attitude of Belarusian painters has changed in connection with the appeal to philosophical understanding of the world, with the desire to "awaken" national roots, to convey the surrounding reality through the subject-word, the subject-sign by the 1970s. The search for ways of the most complete transfer of the art form in the picture was found in the synthesis's genres of still life and landscape.

The most fully combination of genres was approved in popular motives: the depiction of objects on a window or window hole, the still-lifes dedication, and, still lifes in a landscape, directly. One of the most vivid examples of the genres's combination of painting of the 1970-1980s is the image of a still life on the

window, behind the landscape has been expanded. This phenomenon is traced in the interest in free space, and with it the landscape, because his attitude has changed. The window motive in art is a stable symbol, it is like "the eye through which one sees, and watches" [1; 601]. Still life has become the way for the knowledge of the world for artists, both the surrounding and their inner world Moreover, the window becomes some kind of metaphor of a completely different world, where conditions are created for allegorical story. "Thus, the motive of the transition gets emphasized semantic tensions, becomes a kind of necessity, breaking through from the inner to the outer world; the motive of going out of isolation into the space and from limitation to depth "[2; 100].

The motive of window and aperture are found in the works of May Danzig "The Window" (1957), Algerd Malishevsky "Still Life with Flowers" (1962), Boris Arakcheev "Opened Window" (1974), "Spring Sky" (1980), Vladimir Prokoptsov "In memory of Maxim Bogdanovich. The Last Sonnet"(1985), Ales Pushkin " Epitaph to the Grandfather "(1988) and other Belarusian artists.

The painter appeals to either one of the artists in the still-lifededication, or giving him honor and sincere appreciation, or a phenomenon that strongly influenced not only the painter, but also as representative of the nation. The landscape often along with the still life is represented by a wide field, stretching meadows, and a clear blue sky. This metaphor allows to show us the boundlessness, breadth of the Belarusian's soul, gladness for the fact that today the people have thanks to the achievements of the people. The motive of the still-life dedication can be found in Leonid Schemelev, "Father's Chair" (1978), Valentina Sventokhovskaya "Under a peaceful sky" (1985), Yevgeny Ivaneshko "In memory of Maxim Bogdanovich" (1986), Nikolai Tsudik "Liberators of Life" (1987), Leonid Dudarenko "In memory of those who died in Afghanistan" (1987), and others.

The next motive is the motive of the still life in the landscape, it the most common motive. It connected with artist's interesting in influence of the environment on the subject in image by the period of impressionism. Still lifes are depicted in the field, or on the table of the veranda, near the house, etc., and often the still life consists of everyday objects of a person. This motive was used in painting by Boris Arakcheev "Lilac at the Well" (1960), Evgenia Razdelovskaya "Still Life with Krynky" (1963), Viktor Shmatov "Belarusian Still Life" (1976), Peter Sharipo "In the Sun" (1979), Valentna Sventokhovskaya " Dukar Meadows "(1987), Igor Surmachyovsky" December Still Life "(1988) and others.

Conclusion. So, it is important to indicate on the significant influence of the still life genre on the landscape when they interact in the frame of the picture in the Belarusian painting of the 1970s-1980s. The result of this influence is not only in the new problems of compositional harmony of genres, but also in the creation of a special inner image and metaphorical space of the work.

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CULTURAL AND SPIRITUAL HERITAGE OF THE POLESIE REGION OF BELARUS AND UKRAINE IN THE HISTORIOGRAPHY

A. Klyapovskaya
VSU named after P.M. Masherov, Vitebsk, Belarus

The study of art history, historical and ethnographic, anthropological sources, numerous information about the folk culture, traditions of the Polesie region of Belarus and Ukraine are very relevant. Their analysis contributes to a deeper study of the traditional culture of the Belarusian-Ukrainian borderlands.

The main goal of the study is to study and analyze the historiographical, art history sources of research that characterize the traditional culture of the Polesie region. Leading scientists of Belarus and Ukraine determined territorial features, material and spiritual culture of Polesie from initial research to the present. There are regional, areal features and mutual influence of two border peoples-ethnic groups of Polesie region were determined.

Material and methods. The material and methodological basis are expedition materials, museum archives, historical-ethnographic, art historical, anthropological sources researchers who studied the history of development and traditional household culture of the Belarusian and the Ukrainian Polesie. In this research, there were used methods of theoretical, art criticism and comparative analysis.

Findings and their discussions. Polesie is a historical and cultural area, the population of which was composed of various ethnic groups, with its own peculiarities of language, identity, life and culture. Polesie was subdivide into Belarusian and Ukrainian, which in turn is divided into Western and Eastern, and Central (Middle) Polesie is the transition between them [1]. A more detailed study of the material and spiritual culture of Polesie of Belarus and Ukraine makes it possible to reveal both the common artistic traditions of the region and local features. The complex interactions that occurred in the contact zones of the Belarusian and the Ukrainian Polesie had a great influence on the traditional household culture [2, p. 482].

The earliest mentions of Polesie and its inhabitants - Budins (Vudins) take place in the writings of the Greek historian Herodotus (from 485–430 BC) [7, p. 8]. For the first time the term «Polesie» is found in the writings of Polish historians Ya. Dlugosh, M. Cromer, M. Stryjkovsky of the XV—XVI centuries.

However, that time was characterized by the fact that there was no consensus on the borders of Polesie of Belarus and Ukraine. Only in the XVII century on the maps of T. Makovsky and French engineer Guillaume de Boplan, the Polesie zone was indicated by the southern basin of the river Pripyat (Volyn - Mozyr) [3, p. 13]. Various interpretations of the Polesie zone took place in the XIX century in the works of Polish, Russian and Belarusian researches such as M. Charnavsky, R. Zenkevich, P.M. Shpilevsky, L. Galembevsky, A. Kirkor, M. Dovnar-Zapolsky, E. Karsky and others [7, p. 9]. At the beginning of the XX century, a significant role in the study of characteristic of the folk culture of Polesie, especially traditional folk textiles, ornaments and fabrics belongs to the Russian Geographical Society, which initiated two expeditions under the leadership of M. Dubensky and P. Chubinsky to Belarusian-Ukrainian Polesie. In 1925, I. Serbov led a large-scale ethnographic and archeological expedition in the area of the Dnieper and Sozh, during which about 200 household items, clothing, and art products were collected [4, p.530]. An expedition under the leadership of A. Serzhputovsky in 1926 studied the border areas of Polesie of Belarus and Ukraine. At the same time, special attention was paid to the ornamental design of fabrics. Of considerable interest are the works of K. Mashinsky «Eastern Polesie: ethnographic materials in the eastern part of the Mozyr povet and povet Rechitsky» (1928), «Folk culture of the Slavs» in two volumes (1929), which are devoted to the description of the material and spiritual culture of the Polesie population and the characteristics of traditional textiles in ceremonies and life. Methods of processing flax, wool and spinning are reflected in the publication of Pyatkevich «Polesie Rechytskoe» (1928).

A major contribution to the study of traditional household culture of Polesie contributed by the works of I. Lebedeva «Spinning and weaving of the Eastern Slavs in the XIX - early XX century» (1956), G. M. Kurilovich «Belarusian folk weaving» (1981), M. F. Romaniuk «Belarusian folk clothes» (1981), O. J. Fadeeva «Belarusian folk embroidery» (1991) and M. S. Katsara «Belarusian ornament. Weaving. Embroidery» (1996). The first attempt of complex historical and ethnographic characteristics of the Belarusian-Ukrainian Polesie are represents monograph «Polesie. Material Culture» (1988), the authors of which are V. K. Bondarchik, I. N. Brian, N. I. Burakovskaya [7].

Famous modern studies of the cultural and spiritual heritage of Polesie of Belarus and Ukraine are reflected in the works of Belarusian and Ukrainian researchers Y. M. Sahuta «Belarusian folk art» (1997), O. A. Lobachevskaya «The link of times - Belarusian rushnik: album» (2002), M. N. Vinnikova «Some features of the traditional costume of Belarusians of Eastern Polesie» (2008), A. Vl. Gurko, I.V. Chakvin, A.I. Lokotko «Ethnocultural processes of the Eastern Polesie in the past and the present» (2010), J. P. Lashchuk «Folk art Of Ukrainian Polesie» (1992), K. I. Matejko «Ukrainian folk clothing. Ethnographic dictionary» (1996), O. Yu. Kosmina «Traditional Ukrainian clothing» (2011), L.G. Ponomar «Costume of right-Bank Polesye of the middle

XIX – the mid XX centuries. Historical and ethnographic Atlas. Dictionary» (2015). R. V. Zakharchuk-Chugay, T. V. Kara-Vasylieva and A. Chernomorets The research of Ukrainian embroidery and ornaments of the region of Polesie are [4, p. 537]. All the above-mentioned works are fundamental sources for further research on the community and characteristics of the artistic traditions of the folk culture of the Belarusian-Ukrainian Polesie.

A comprehensive study of the artistic culture of Belarusians was presented in the publications «Traditional art culture of Belarusians» in 6 volumes, in which there was explored the culture of six historical and ethnographic regions of Belarus : Podniprovya, Poozeriya, East and West Polesie, Central Belarus, Mogilev Podniprovya. The books there were summarize and systematized the materials of a three-year (1993-1995) comprehensive study of famous ethnographers and art critics, and show the features of local traditional folk culture. The result of all the studied Polesie region of Belarus and Ukraine allows us to see the specifics of the transformation of the ethnocultural processes of this territory.

Conclusion. The article reveals some aspects of the historiography of the cultural and spiritual heritage of Polesie of Belarus and Ukraine. At the same time, attention is focused on gradual studies of the traditional culture of the Polesie region, which are reflected in the works of famous scientists. The results will be applying for further research of the folk traditional culture of the Belarusian-Ukrainian Polesie. The need to create and study traditional folk art is one of the important spiritual needs since, without studying art in the roots of the people, it is impossible to understand the essence of real art. This is part of our culture, which is given to us by our ancestors.

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EXPERIENCE OF PARTICIPATION
OF THE REPUBLIC OF BELARUS IN THE VENETIAN BIENNAL

A. Lollini
VSU named after P.M. Masherov, Vitebsk, Belarus

Today it is impossible to live and create in an isolated cultural space, not knowing and not taking part in the global processes of the development of art. The Venice Biennale is the most authoritative forum of world contemporary art; it is not just an exhibition of contemporary art: it is one of those events that are part of a collective culture that often discusses and changes the way we understand and create art that can capture change and social change.

The purpose of the article is to analyze the experience of the participation of the Republic of Belarus in the Venice Biennale.

Material and methods. For writing the article were used historical-descriptive and historical-system methods. The main base was the sources and materials of the periodical press and the official Internet resources of the Venice Biennale.

Findings and their discussion. The Venice Biennale was created on the basis of a resolution of the municipal administration of April 19, 1893. In accordance with it, in 1894, it was ordered to organize a "National Biennale Exhibition" to celebrate the silver wedding of King Umberto and Margherita di Savoy. The actual inauguration of the event took place two years later, on April 30, 1895. The then mayor of Venice, Riccardo Selvatiko, who decidedly wanted to transform the evening meetings of artists in Florian's coffee houses into a prestigious international exhibition, played an indisputable role.

During its existence, the Biennale has turned into a celebration of modern art, incomparable in scale and spectacle. The Venice Biennale is currently the most authoritative forum of world contemporary art. The main goal of this large-scale exhibition is to present the most modern phenomena in the contemporary art of different countries. In many ways, the dynamics of the development of art of our time is determined by the two-year rhythm of the Venetian exhibitions. The special theme proposed for each of the Biennale is intended to reflect the problematics of the current situation in contemporary art.

The most recognized contemporary artists exhibited their works at the Venice Biennale, including: Gustav Klimt (1899), Renoir, Courbet (1910), Henri Matisse, Cezanne, Van Gogh (1920), Modigliani (1922), Chagall (1928), De Chirico (1930), Dali, Kandisky, Mir (1948), Pollock (1950), Jeff Koons (1990), Damien Hirst (1993) and Italian Maurizio Cattelan. At the Venetian art exhibitions such Russian painters showed their works as: Mikhail Vrubel, Isaac Brodsky, Mstislav Dobuzhinsky, Boris Kustodiev. A retrospective of Modigliani at the Biennale took place in the 1930s. The great Picasso had to wait until 1948 to see his works exhibited at the Venice Biennale.

Belarus at the Venice Biennale was presented four times: in 2005, 2011, 2015. and in 2017. [3]

From June 12 to November 6, 2005, the 51st International Art Exhibition was held, at which two international exhibitions were held, created in Giardini (curated by Maria de Corral) and in Arsenal (curated by Rosa Martinez).

Belarus was first represented at this prestigious forum. In Venice, the works of N. Zavoznoy, I. Tishin, V. Celen, S. Voichenko, V. Pysin and R. Ivashkevich - a Belarusian artist, representative of conceptual art were presented. Their works were noticed, and this inspired and intensified preparations for subsequent exhibitions.

2011 - the 54th Biennale, compared with the previous exhibition, marked a significant increase in participants. 83 artists, 62 of which are presented for the first time, 32 artists and more than 440,000 visitors. Belarus presented the curatorial concept of Mikhail Borozny - the project "KODEX" by A. Klinov, V. Petrov, O. Kostyuchenko and D. Skvortsov.

The theme of the Biennale was proposed by the Swiss art historian BicheKuriger - "ILLUMInationi", she divided it into two words: illumi - lighting and nation - nation. At the forefront of the question about the nation and time of art. The Belarusian project was called "KODEX" - this is a part of the book that does not have a cover, only the basis, it is a modern interpretation of the text design. Five different artists were selected, each of whom offered his own vision of the topic.

2015 - the 56th International Art Exhibition, held from May 9 to November 22 and set a new record of attendance and participation of the press (more than 501,000 visitors and about 8,000 accredited journalists).

The program of the exhibition featured works of 136 artists, of which 89 took part for the first time.

The organizers of the national competition of curatorial concepts of the Belarusian pavilion for the first time held an open competition. Belarus presented the project by Alexei Shinkarenko and Olga Rybchinskaya "Archives of the witness of the war". The exposition was based on photographic documents on the theme of the First World War from the funds of republican and regional museums and private collections. The project was quite successful and at the state level they realized that contemporary art contributes to the formation of the country's image and the manifestation of national identity. She conquered the jury with a depth of philosophical meaning, an unusual form and an attempt to comprehend and establish a connection with events that concern society.

From May 13 to November 26, 2017, the 57th Venice Biennale of Contemporary Art was held by Kristin Masel and received the name VIVA ARTE VIVA. [2]

The exhibition was attended by 120 artists, including 103 - for the first time at the main exhibition, attended by 86 countries. The whole exhibition is

animated by a series of parallel projects and speeches. Speaking by curator Kristin Masel, she said, "Contemporary art, faced with conflicts and upheavals in the world, remains the most valuable testimony of humanity. While the very idea of humanism is under threat. Art is the last fortress to be guarded; a garden that needs to be carefully cultivated, without paying attention to fashion and anyone's interests, art is an alternative to individualism and indifference.

The Belarusian art project "Table" was successfully presented at the 57th Venice Biennale by the artist Roman Zaslonov in collaboration with Viktor Lobkovich and Sergey Talybov "Table" is a 32-minute video from more than two dozen mini-scenes that continuously replace each other the background of the main and unchanged object is the flat surface of the table. Thus, the table becomes not just a "stage" on which dramatic, comic and philosophical scenes unfold, but also the main witness and even the actor in each of them. The viewer is invited not only to observe what is happening from the outside, but literally to be at the same table with the heroes of video art.

The project was honored good by the jury. Professional judges noted that the authors managed to create a bright and expressive image using minimal means. In the first week of the Biennale, more than a thousand spectators saw the Belarusian exposition. The Italian magazine Kyoss, one of the oldest in the art world, dedicated a series of articles to Roman Zaslonov. [1]

Conclusion. Belarus is attracting more and more attention in the global art community. The participation of Belarus in the Venice Biennale is an occasion by which Belarus will be talked about at the international level.Today, it is modern art that reflects the philosophical search for identity that will lead Belarus and Belarusians to their very special path of development.Further participation in this event makes it possible to demonstrate what actual Belarusian art is - this is not a myth, but a large-scale phenomenon that deserves recognition not only in its "homeland", but also beyond its borders.Biennale provides an opportunity to show their culture and identity. Venice Biennale has become a great experience and opportunity for the world recognition of Belarusian contemporary art.

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INTEGRATION OF DIGITAL PAINTING INTO
THE TRADITIONAL ART ENVIRONMENT

T. Manuika
VSU named after P.M. Masherov, Vitebsk, Belarus

Digital art has greatly expanded the traditional set of tools of the artist in the direction of progressive computer-digital technologies. The use of modern devices allowed the visual arts to refuse the understanding of the work as a material object and the recognition of singularity by an indispensable attribute of originality [1].

The relevance of this topic is due to the intensification of the use of electronic devices in creation and viewing of works of digital art, as well as an active interest in images of digital painting, which were clearly manifested in the design of books and posters, in websites, in computer games and modern cinema.

The purpose of this research is to understand the process of integrating digital art with the traditional artistic environment.

Material and methods. The main basic research materials are works in the field of digital art, as well as works of digital painting, posted on creative portals on the Internet and in electronic catalogs of museums and galleries. In the process, chronological and comparative (comparative historical) research methods were used.

Findings and their discussion. Digital painting is a type of visual art, which is created mainly due to 2D editors. The processes of creating digital and traditional paintings, as well as the nature of the use of means of artistic expression and artistic techniques in traditional and digital visual arts do not have fundamental differences. Thanks to graphic editors it's possible to imitate traditional techniques and materials. Thus, digital painting is the result of the development and transformation of traditional art forms in modern artistic environments.

In Russian terminology, the definition of "digital painting" appeared relatively recently (about two decades). In English, the division into digital painting and digital art is practically not provided. This inaccuracy connects with certain reasons: the types of genres and the forms of the digital arts themselves are often hybrid, both technically and methodologically [2].

Despite the emergence of various avant-garde strains in 20th century, computer art in general and digital painting in particular proved much more revolutionary. The reason for this is the presence of potential (as the growth of artificial intelligence) in achieving complete artistic independence. Unlike traditional painting, where technology and tools reached perfection in the XVIII century, and since then almost nothing new has been added, modern computer painting is constantly evolving. The resolution of displays is growing, the quality of color rendering is increasing, the power of computers is increasing,

programs for digital painting are being updated and improved, new devices are being created for working with color and displaying color.

Artists have always been among the first to respond to the cultural and technological breakthroughs of their time, and they began experimenting with the digital medium several decades before the official digital revolution [3]. The first exhibitions of digital art took place in 1965 in the Howard Wise galleries in New York ("Computer Images") and the Technische Hochschule in Stuttgart, Germany ("Generative Computer grafik").

With the development of technology and computer software, opportunities for digital art have expanded. In the 1970s, Apple II computers were developed, which allowed for the first time to display color graphics on a PC screen. The appearance of the inkjet printer made it easier for craftsmen to create graphic prints of their works in 1976. Later, Adobe Inc., created in 1982, offered the user a vector drawing program Adobe Illustrator and a raster graphics program Photoshop. These are still one of the most popular programs in the world used by the new generation of artists.

The emergence of the World Wide Web in the early 90s contributed to the fact that CG artists (CG - abbr. from "computer graphics" art masters) had the opportunity to present their creations in online galleries and independently publish on the web, uploading works to their personal blog or to the web. When the art movements of the past were often born due to geographical proximity and social interaction, artists of the Internet times could unite in creative unions that crossed continents. Nowadays the digital painting can be argued that digital art has become available to non-professionals, computer illustration and post-processing amateurs in graphic editors. Currently, almost everyone has a mobile phone, home computer or laptop with which you can create author the image and put it on the network where the general public can appreciate the work.

The world famous CG artists include the pioneer of digital art Lawrence Gartel, the Japanese illustrator Yutak Kagai, the Czech-Turkish master Murat Sayginer, the American artist Margo Lovejoy, who is the author of the digital flow Art in the Electronic Century, Martha Dakhlig and Marek Okon (Poland), Daniel Conway (Great Britain), Linda Bergkvist (Sweden), Chris de Lahr (Canada), Natalia Molinos, Dr. Franken, etc. The works of the last two authors from the Nast Plas Art Studio in Madrid are a vivid example of modern digital painting. Fans of their work are called artists by digital alchemists. The works "Nast Plas" fascinate by their mystery, and this mystery is saturated with every stroke and every detail of the work, but at the same time it scares because of certain gloom of images.

In Russia and Belarus, computer graphics began to develop in the late 1990s, when there was a major leap in the development and availability of computer equipment and software (graphic editors). Many Belarusian digital artists work for foreign companies as a part of big game devs (a company that develops computer games), some create digital graphics samples for domestic

customers. From 2009 to 2012, the annual international digital art festival "Terra Nova" took place in the republic, the main curator of it was a famous Belarusian artist, gallery owner, head of the exhibition complex of the National Library of Belarus, chairman of the International Guild of Painters Fedor Yastreb. He died in 2014, and since then Terra Nova has been on indefinite leave. Although the project was very promising: it drew attention to the development of computer graphics, multimedia art in Belarus, and sought to intensify creative contacts between artists from different countries, to attract a new generation of authors to the artistic process [4].

Among Belarusian CG artists we can stand out A. Lenkevich, A. Kozik, D. Kashtyalyan, V. Kotyashov, A. Pavlov, A. Kot, R. Guro, A. Podgorny, A. Usikov, N. Makeev and others.

Conclusion. Digital painting as a type of digital art became widespread in the last decade of the 20th century due to the increased power and availability of computer hardware and software, and the advent of the World Wide Web in the mid-1990s raised it to the level of "global accessibility". Computer and software in digital painting –it is the same tools as a brush with an easel. However, in order for the works to be attributed to the works of digital art, the master needs to know and be able to apply all the knowledge and experience accumulated by generations of artists (the laws of perspective, color theory, glare, reflexes, etc.).

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PLEIN AIR EVENT AS A PROJECT: FROM THE IDEA TO THE EMBODIMENT

K. Miasnikova
VSU named after P.M. Masherov, Vitebsk, Belarus

The 21st century has changed the attitude to the plein air event as working with nature in the open air. It has shifted the process of studying and reflecting of the spontaneous impression to the background. The dynamic development of modern art has required rethinking of the approach to plein air as a creative method, and in this process the organizing and holding plein air events acquires characteristics of a project, artistic action, marketing strategy.

The aim of our study is to define the trend of the plein air activity in Vitebsk region within the period between the last quarter of the 20th century and the beginning of the 21th century; to give a brief description of the modern approach to organizing plein air events

Material and methods. The work is based on the introductions to plein air event catalogues, archives, periodicals and Internet resources. We have used the following methods of investigation: comparative analysis, chronological method, generalization and synthesis.

Findings and their discussion. Vitebsk in particular, and Vitebsk region in general, due to its peculiar historical background, associated with the names of Mark Shagal and Kazimir Malevich, created the preconditions for the appearance of different kinds of unions, actions and performances, which are connected with vanguard art.

After perestroika in the USSR, when the dialogue between the authorities and artists became possible, the first international plein air events were held in the Vitebsk region. One of them, devoted to Mark Shagal (1994, 1997), was financed by the Ministry of Culture. In 1994 starts another international project 'Malevich. UNOVIS. Contemporaneity', devoted to Kazimir Malevich and financed from independent sources. At that time, thanks to Michail and Ada Raichonok, the name of Yazep Drozdovich came from oblivion, and the first republican plein air event, devoted to the artist, his life and creative activity was held.

The term and notion 'plein air' itself (translated from French as 'open air') has two meanings: as an artistic technique and as the basis for the artists' creative aesthetics, for whom light and air acquire an independent meaning and have purely artistic interest; and the second meaning is a group of artists who get together for a certain period of time for collective work in the natural conditions. [1, p. 182]

Thus, in Vitebsk there were laid foundations for two tendencies, the first of which concerned 'plein air' as it was understood by impressionists, when the artist depicts not the object itself, but the impression it produces on the artist. [2, p. 647]

The second tendency is: plein air event is regarded as an action or challenge. For example, if we speak about the plein air event 'Malevich. UNOVIS. Contemporaneity', both the first one (1994) and the second one (1996) had no works which would be connected with society or showed reflection to it. Those were works of 'pure' art, which reflected in its spectrum modern artistic tendencies, taking place in Europe. [3, p. 332]

If we regard plein air event as a project, the approach to its organization can be compared to the marketing strategy of launching a new product on the market. If we take as an example the events of the period of 1994-97, we can say that there appeared simultaneously three artistic brands on the territory of Vitebsk region: Shagal, Malevich and Drozdovich. And each of them, as an ideological embodiment of artistic process, considerably differs from one

another. So, the 1ˢᵗ and the 2ⁿᵈ plein air events, devoted to Mark Shagal, were aimed at the rehabilitation of the artist's name and formation of the collection of modern art on the city's basis. The plein air events devoted to Kazimir Malevech, also aimed at 'whitewashing' the artist's name, united the non-conformist artists and those who worked in the genre of performance. The result of those two plein air events became a collection of contemporary art gathered by Alexander Malej and later presented as a gift to the city.

Plein air events devoted to Yazep Drozdovich took part in the Sharkovshchina district and united the artists under the idea of the revival of cultural heritage. As a result, in the village of Germanovichi there was founded a museum (now having the status of a state museum), where you can see the pictures from the 24 plein air events, carried out by the Cultural-educative center named after Yazep Drozdovich.

Thus, for every of the above mentioned plein air events there have been found their own niche and audience. Of course, all the three projects resulted in a similar way in an exhibition and /or a performance, and a catalogue if possible, which is a natural outcome of an artist's work. But these plein air events grew into museums, became the foundation, the core of the collections, united hundreds of artists.

Many people wonder: what can be an indication of a successful plein air event? In our opinion, it is the public response, the formation of traditions and, of course, the regularity of the event. All together it presupposes financing, artists' interest and the need of society in this kind of artistic comprehension of the world.

Conclusion. Nowadays the word 'symposium' is often used in the meaning of 'plein air event'. The word comes from the Latin word 'symposium' which originated from the Greek word 'symposion' (feast). At present 'symposium' means a place for artistic and cultural exchange and professional improvement, which fully corresponds to the modern trends in art and implies an international team of the participants. We are not sure if the terms 'plein air' and 'symposium' are synonymous, because 'plein air event' means, primarily, work in the open air and spontaneous reflection of the artist's perception of the world around him. But at the present moment namely 'symposium', with its internationality, simplification and non-involvement into the cultural environment serves as the reflection of the present day spirit.

In our opinion, namely such a phenomenon as the Vitebsk region's plein air event, which has become a tradition and has grown a few generations of artists, is the true culture forming phenomenon.

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MODERN INFORMATION TECHNOLOGY IN TEACHING ON THE EXAMPLE OF DESCRIPTIVE GEOMETRY

N. Paulava
VSU named after P.M. Masherov, Vitebsk, Belarus

The current level of economic development requires introduction of new technologies and their spread in various spheres of human life [3]. It is caused by fundamental changes that are taking place in the world. The most important among them are the predicted "The Fourth Industrial Revolution" and the concept "The knowledge economy".

The purpose of this study is to study the use of modern methods of teaching descriptive geometry. The use of multimedia presentations and modern computer technologies in this discipline facilitates and improves the teaching methods of this discipline.

Material and methods. The material of the study was the technology of teaching descriptive geometry. The following methods were used: descriptions and generalizations of the material on the studied problem, research.

Findings and their discussion. Modern methods of teaching descriptive geometry will contribute to a new level of this discipline and the use of technologies such as: QR-Code; 3D models; Moodle system is a big step in front.

This situation requires any state to improve the quality of education and training of technical and other specialties specialists, in which the use of computer tools and information technology in the global cyberspace comes to fore. It should be mentioned that there is also a reduction of academic hours and introduction of new disciplines in the education system [2]. There is an increase in the flow of educational information and its density, so a full potential and advantage of computer technology in activating and realizing of creative nature of learning and getting out of the current situation is revealed [4].

Descriptive geometry is used as example in our research. Descriptive geometry is one of the main graphic discipline that stimulates development of spatial and logical thinking and is important for almost any specialty - art, teaching and engineering.

It should be noted that effectiveness of this discipline is enhanced largely due to implementation of information technology in the learning process.

The use of three-dimensional graphics and animation at lectures and laboratory classes is a proof of this. The multimedia support of classes allows diversify the study material and contributes to the explanation of complicated theoretical material with vivid examples and a clear language. It should also be emphasized that the use of *multimedia presentations* allows receive a feedback from students even after the completion of the course. Modern *cloud services* help students to find the material that was in lectures and laboratory classes

quickly and use it in their work. A convenient tool for this is the *QR-Code* (Quick Response Code), which transmits a link to a cloud resource. Various applications from *Google Play* and the *App Store* are other effective tools that can be effective at the beginning of training as arouse young people's interest to this discipline. One of the main problems that exist in the educational process is to attract students to the discipline or, in other words, to arouse their interest in the subject, especially if it is a non-core course. It can be achieved by various gaming methods, which are primarily aimed at increasing cognitive activity of students. Existing applications are extremely different - from simple *geometric calculators* to complex programs for creating *3D models* and all of them help students to get acquainted with the discipline and explain its essence in one way or another. It should also be noted that during laboratory classes, one can use tablet computers as an application to their workbook (today they are becoming more and more common with laptops, but so far only a smartphone is the main means of communication in a tandem student-teacher). *Tablets* can be used to perform some basic drawing tasks as well. Still it is impossible to completely remove a traditional set of drawing tools as the very essence of descriptive geometry will be lost then. However, the check of laboratory tasks can be simplified by means of ready-made templates; students can check the tasks that are performed on paper themselves using their smartphones and tablets. *Online counseling* is another area that needs to be mentioned. It is becoming increasingly interesting for us today. In essence, it is a great opportunity for students to receive high-quality quick advice and assistance in problems related to the issues of education and projection of surfaces. More over, this system offers and gives the possibility of receiving distance learning, which is also becoming very popular today. It can combine and project all the technologies mentioned above. For example, the *Moodle system* could be such a platform. This learning management system or virtual learning environment has proven to be an effective tool.

It should be noted that modern methods of teaching descriptive geometry have not found a widespread use in the educational environment for a number of reasons yet. Firstly, it is caused by expensive equipment, which is not available in all audiences. Secondly, no matter how paradoxically it sounds, a low "*information culture*": it is more convenient to show the material in the traditional way using lecture notes and drawings on the blackboard, even if there is equipment. Still, this method should and will exist, since only a living person can share and explain all the details of the subject. Prejudice and arguments against multimedia content have the right to be. Thirdly, there are typical programs that, for the most part, do not keep pace with information technologies and their development that are being introduced. For example, relatively simple elements, such as a point, a straight line, and a plane, can be transferred without much difficulty by various multimedia tools, and saved time can be devoted to more complicated topics. At the same time, it is important to understand that this

discipline is studied in the first year and requires acquisition and consolidation of skills for carrying out drawings according to existing standards.

It can be said that teaching of the discipline requires the use of all modern technologies. However, the role of a teacher and his experience remain an extremely important dominant in mastering the course. A presentation should be a continuation of a lecture and, making a solid basis, become a confirmation of a lecturer's thought. Good results can be achieved only in such a cluster. In this vein, we can name an extremely interesting technique of *E-learning theory* developed by Richard Meier and other scientists, which is a cognitive theory of learning. It is suitable for teaching descriptive geometry and combines both a traditional approach of a lecturer with its audio component and the visual transmission. There is a Redundancy principle: Deeper learning occurs when lesson graphics are explained by audio narration alone rather than audio narration and on-screen text [4]. The theory fits peculiarities of descriptive geometry, though it is not universal.

Conclusion. Summing up the above said, we can say that the use of modern methods in various disciplines, such as descriptive geometry, contributes to their better understanding preserving traditional methods in teaching.

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FORMATION OF STUDENTS OF ART AND CREATIVE SKILLS IN THE CONDITIONS OF THE PLENER

N. Sarakovskaya
VSU named after P.M. Masherova, Vitebsk, Belarus

The leading aspects of solving the issues of professionalism and creative development of students, their self-improvement and self-development are the scientific and practical knowledge acquired by them in the field of artistic

creation. Understanding the process of formation of artistic and creative skills improves the professional training of future specialists in the field of visual arts. One of the most effective ways to develop artistic and creative abilities of students is the open air.

The purpose of the study is the selection of effective teaching methods aimed at the formation of artistic and creative skills in an open-air setting in the process of teaching art students.

Material and methods. The material of the study was the analysis of the passage of the open-air practice by students of the art-graphic faculty of the Voronezh State University named after P.M. Masherov. The experiment involved 19 people. Used methods: analysis, synthesis and synthesis.

Findings and their discussion. Work in the open air has its own characteristics and capabilities to achieve professional excellence, contributes to the development of such necessary qualities as observation skills, comprehensive perception of nature, creative thinking, well-developed visual memory. Plein-air work develops the skills of fast drawing, necessary for the future artist. Contact with nature forms the aesthetic taste of students, expands the possibilities for further creative activity, enriches the spiritual sphere.

Working in the open air, students acquire practical graphic skills that are a prerequisite for high-quality execution of creative work.

Artistic skills are characterized by the properties:
- artistic and creative imagination;
- emotional attitude to the objects depicted;
- volitional characteristics of the artist.
- high sensitivity of visual perception, increasing in the process of drawing (sense of form, sense of color, sense of proportion and line);
- rapid mastery of new techniques in the study of various methods of drawing and painting [1, p. 212].

In the framework of the above, it should be noted that in the process of creative activity in the open air, students master a new language of figurative expression of their thoughts, feelings, and attitude to the imaged object.

The central problem of drawing in the open air is the problem of perception. Perception depends on the characteristics of mental processes and emotional responsiveness of a person. Psychophysiological characteristics of visual perception in the visual arts:
- advantage of the dominant stimulus;
- the ability of holistic vision;
- perception in terms of natural light, proportionality, the ratio of objects and the environment.

The perception of the student is significantly different from the professional perception of the artist. The perception of a student has a number of flaws, such as superficial visual impressions, inaccurate visual assessments, instability of visual perception, etc. In this regard, one of the leading problems

of teaching students in the field of painting is the tendency to constancy and selective perception of the objects depicted. The restructuring of ordinary perception into artistic vision depends on experience. When a student portrays nature, he carefully watches what he draws, he concentrates, his intellectual activity is directed directly at the object of the image.

As a result of regular drawing in the open air, observing nature, perception becomes more sensitive. The plein air also develops visual memory because environmental conditions change rapidly. Drawing from memory develops self-control, mobilizes the processes of perception, stores in memory the information seen. Conscious observation is characterized by the selection and elimination of the secondary, it helps to identify the most characteristic attributes of the objects being depicted, which allows us to develop a holistic approach to the image. The holistic approach is the artist's ability to visually perceive nature and at the same time, by comparison, determine the proportional, tonal and color interrelation of all the details of the motive depicted. Outstanding Russian artists and professors G.V. Beda, A.A. Deineka, V.A. Favorsky noted that the process of forming a holistic vision is long and gradual. As G.V. Bede emphasized, "Developing the ability of holistic vision and simultaneously comparing all parts of the landscape is an important task of painting. If the beginning artist does not master this special skill, further training will not give positive results. The ability to see the general and work relationships determines the difference between a professional artist and an amateur"[2, p. 47].

To form a holistic vision, teachers and artists make recommendations such as, for example, to look at nature "broadly" in order to make the visible image less clear, as if blurred. "Observe nature by peripheral vision" - such skills

The teacher Pavel Chistyakov instilled in his students. These recommendations are still relevant in the modern process of learning holistic perception. For the development of artistic and creative abilities of students in the conditions of the open air, it is necessary to use a set of methods, including those reflecting the specifics of the artist's work. The strategic method is a historically developed set of principles of artistic and intellectual reflection of nature in the landscape genre, determined by the level and type of development of society, its beliefs and ideals. This set of principles of the artistic method includes:

- the principles of aesthetic appreciation of a landscape from the point of view of a certain aesthetic ideal;
- principles of artistic selection of landscape motifs;
- ways of artistic generalization of the chosen motive.

The creative method applied to plein air is a system of artistic means that includes ways of generalizing, ideas about how to study the laws of nature and what deserves attention in it, etc. The work in the open air is conducted by the method of organizing relationships, spatial, etc.). Relationships are studied and determined by comparison — this is a time-tested drawing method.

The process of learning painting occurs mainly in the form of practical activities of students. It is impossible to develop methods once and for all in this

process. The teacher combines them in their activities in different ways, but it is no coincidence. Considering these conditions, the following teaching methods can be applied:

- lecture-conversation as the most accessible form of teaching theory;
- exercises that provide mastering the practical skills and methods necessary to consolidate the new material.

Thus, in the plein-air teaching, not specific methods are attractive, but an integrated methodological system in which all components are in continuous unity, pursuing a common goal - the formation of the artist's personality.

In the process of systematic training in the conditions of the open air, students successfully develop many professional skills:

- shaping the artist's personality. quickly grasp the state of nature;
- the ability to perceive shapes and colors;
- the ability to perceive the form, its proportions and location in space;
- the ability to identify general and consistent contrasts;
- the ability to determine the general properties of objects;
- ability to compare the similarities and differences between objects;
- the skill of typing and generalization;
- ability to work with the main methods of composition;
- ability to work with art materials.

Conclusion. The study of nature is considered a special type of active perception and one of the best ways to develop visual memory. Plein-air practice has a positive impact on creative potential, on the development of artistic and creative abilities.

These abilities are the most important components of the aesthetic and creative development of future artists, allowing to solve artistic problems.

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MODERN EDUCATIONAL TECHNOLOGIES IN TRAINING IN GRAPHIC DISCIPLINES

V. Sementovskaya
VSU named after P.M. Masherov, Vitebsk, Belarus

With information technology development there was a need for modernization and improvement of quality of education. Process of updating of education demands improvement of methodical work, implementation of modern educational technologies.

The concept of informatization of an education system of Republic of Belarus until 2020 defines the basic principles, approaches and conditions for successful realization of process of informatization. Creation of the necessary regulatory legal base and methodical providing has to become necessary entry conditions for significant changes at the organization of modern education [1].

The purpose of the article is identification of didactic features and justification of development of methodical providing with use of information technologies in teaching graphic disciplines.

The relevance of article is determined by insufficiency of methodical developments by use of information technologies in training in graphic disciplines, change of methods, structures and the maintenance of a training material.

Material and methods. Material of a research are educational standards, approximate thematic plans, training programs, progress of pupils 3 courses of specialty "Networks of Telecommunications" of the Vitebsk branch of institution of education "The Belarusian state academy of communication" on discipline "Engineering graphics".

In a research the following methods were used:

− studying and theoretical analysis of psychological, pedagogical, methodical and technical literature;

− analysis of the best pedagogical practices of use of opportunities of innovative technologies in teaching various disciplines, including graphic;

− generalization;

− pedagogical experiment;

− conversations, questioning, testing;

− observation of educational process and of activity of pupils;

− statistical analysis of experimental data, etc.

Findings and their discussion. The electronic educational and methodical complex "It Is Easy to Draw!" including theoretical material, educational videos, methodical instructions to performance of laboratory works in the AutoCAD program, the interactive presentations, reference materials, testing and control questions for self-checking of knowledge of pupils is developed for confirmation of efficiency of use of materials of a research.

A backbone role in a complex is played by technical means of training: existence of the personal computer, interactive board, programs AutoCAD, iTALC, MyTest, Internet networks. The choice of computer programs is caused by a possibility of use of their free versions in the educational purposes. For automation of performance of laboratory works templates of A4, A3 formats, electronic library of tasks to laboratory works, tool palettes are offered. In templates tunings of the AutoCAD program according to requirements of ESKD are performed.

Statement of theoretical material is given consistently, from simple to difficult, is followed by drawings, color graphics, the interactive presentations that focuses attention of pupils.

Practical material is presented in the form of the laboratory works performed in the computer-aided engineering system AutoCAD. Methodical instructions to laboratory works are described step by step, with display of record of a command line and video lessons. Development of the computer-aided engineering system gradually, in process of performance of laboratory works. With digestion of material training moves to higher level of automation that increases labor productivity and quality of performance of graphic works.

Test control gives the chance to quickly carry out an examination of pupils and without excess expenses of time and forces to process the obtained information.

Materials of a research are placed as locally, in computer audiences, and is in network in open access. The possibility of access to materials, contact with the teacher in out-of-class time has huge value for modern pupils who spend at the computer much time, and got used to conditions of remote communication.

2 groups of examinees participated in an experiment. In control group educational process was focused on a "classical" technique. In experimental group of occupation researches were conducted with use of materials. The comparative analysis of the level of development of internal motivation of educational activity of pupils when studying discipline "Engineering graphics" in experimental and control groups is carried out.

The analysis of results of a research confirm increase in efficiency of graphic training of pupils with use of materials of a research in training in graphic disciplines. In experimental group the motivation to training, progress of pupils on graphic disciplines increased.

Materials are tested and "The Belarusian state academy of communication", institutions of education "Vitebsk college of culture and arts" when training on subject matters "Engineering graphics", "Drawing and prospect", advanced training courses on development of the AutoCAD program are used in educational process of the Vitebsk branch of institution of education.

Conclusion. Use of modern educational technologies on classes in graphic disciplines allows to make process of training more interesting, bright and fascinating, to individualize and improve skills of self-checking, to organize educational and research activity of pupils, developing thereby at pupils creative activity.

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ART PEDAGOGY IN WORK WITH CHILDREN WITH DISTURBANCES OF THE SUPPORT-MOTOR APPARATUS

M. Serebrennikova-Mosar
VSU named after P.M. Masherova, Vitebsk, Belarus

Graphic activity can be viewed as a means of correcting cognitive impairment, as a means of intellectual development, as a method of learning and, finally, as a means of emotional-aesthetic education of children with disorders of the musculoskeletal system. The presence of motor disorders and specific disorders of cognitive activity in children poses a number of pedagogical tasks, the solution of which is necessary when teaching drawing and other types of artistic and creative activity.

The purpose of this work is to analyze the practice of using art pedagogy methods in the classroom for children with disorders of the musculoskeletal system.

Material and methods. The study was conducted among children 5-8 years old in the center of intellectual development of the child "Learn-ka" of Minsk. The study involved 14 children. The main research methods: observation, analysis of student work, comparison, synthesis.

Findings and their discussion. A child with disorders of the musculoskeletal system, it is very difficult to feel the diversity of the surrounding world. About the healing power of art known since time immemorial. Art heals, changes mood, affects our body. Art has ample opportunities for successful socialization, rehabilitation and adaptation of a child with disorders of the musculoskeletal system in society.

In his works L.S. Vygotsky paid special attention to the need for the participation of children with special educational needs in various types of artistic and creative activities and considered art to be one of the main factors shaping the cultural practices of the child [3].

Art pedagogy is an independent branch of pedagogical science that studies the laws governing the upbringing and development of a person by means of art. Art pedagogy has common goals with pedagogy, helping a child to learn to understand himself and live in harmony with himself, with other people, to know the world around him. Features of art pedagogy in that it operates with the means of art and has a developing and educating potential.

The essence of art pedagogy in its most general form is defined as "a synthesis of two areas of scientific knowledge (art and pedagogy), ensuring the development of the theory and practice of pedagogical correctional-directed process of artistic education of children with developmental deficiencies and the formation of the foundations of artistic culture through art and artistic activity" [2].

According to E. A. Medvedeva, the concept of "Art pedagogy" does not replace the narrower term "artistic education" [2]. The depth and diversity of the pedagogical tasks of the artillery pedagogue, its essential meaning (personal development, sociocultural adaptation, pedagogical assistance, self-expression and

self-understanding) cannot be reduced to drawing skills. Moreover, in art pedagogy, teaching drawing techniques is considered only as a means of achieving pedagogical tasks. For example, in the visual arts, the ability to handle artistic material leads to greater freedom, gives a new impetus to development, stimulates self-generation [2].

A special place in art pedagogy is given to the product of artistic activity. Children's drawing is seen primarily as a projection of the child's personality, as a symbolic expression of his relationship to the world. In this regard, it is very important to distinguish in the children's drawing those features that reflect the level of mental development of the child and the degree to which he masters the drawing technique, on the one hand, and features of the drawing, reflecting personal characteristics, on the other.

The vast majority of children with cerebral palsy (CP) at the age of 4-5 years can not perform even the most primitive drawings. Their graphic activity is in the nature of pre-figurative drafting [1].

Primary schoolchildren, like preschool children with cerebral palsy, have great difficulty in developing graphic skills. It is not uncommon for children of 7–10 years old to be at the level of pre-figurative drafting.

Schoolchildren with cerebral palsy willingly perform plot drawings on a given topic. But if the content of these drawings is usually satisfactory and indicate a sufficient understanding of the topic, then the performance is usually much worse.

Analysis of thematic drawings of children 5-8 years old with cerebral palsy studying in the center of the child's intellectual development "Learn-ka" shows that not only the composition of the picture suffers, its placement on the sheet plane, but also the size of the depicted objects, if there are several, are roughly violated. When coloring use little tint colors. These shortcomings should be overcome in the process of remedial work.

Work with children in the center of intellectual development of the child "Learn-ka" is performed both in a group and individually. The difference between group and individual classes lies in the purpose, procedure, and methods of work. It is important that in the classroom is used not only the usual set of graphic tools and materials: gouache, watercolor, color, simple pencils, pastels, etc., but also, non-traditional materials and methods of their use. In the classroom techniques and techniques are selected on the basis of efficiency and simplicity, depending on the degree of violation of the musculoskeletal system.

5-6 years: performing the exercises "Draw a picture", "Make and finish", "Draw a fairytale hero". When working on these exercises, the following techniques are used: imprint technique (natural forms, etc.), Nabryzg technique, stencils, illustrations of fairy-tale characters, plexiglass with preliminary imposition on the illustration to fairy tales. When working with this age, art materials are used: gouache, watercolor, wax crayons, markers 7-8 years: performing the exercises "Compose your still life", "Finish the landscape", "Favorite animal" "Draw who is more, who is taller". When working on these tasks, graphic techniques, waxography, stencils, stamping, and plexiglas are applied with a preliminary

overlay on the picture. When working with children of this age, art materials are used: gouache, watercolor, chalk pastels, pencils, ink. Art pedagogy sets itself the solution of the following tasks: to develop fine motor skills of the hand and visual-motor coordination to prepare for mastering the letter, to form the correct perception of form, size, color and the ability to transfer them in the image, to form the correct perception of space, to correct visual-spatial perception disorders.

Conclusion. Special correctional work by means of graphic activity can play a huge role in the prevention of these children not only violations of school skills, but also in overcoming violations of personal development and the formation of employment opportunities.

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CLOUD-BASED TECHNOLOGIES AS A RESOURCE OF PROFESSIONAL COMPETENCES IMPROVEMENT

A. Vorobjova
VSU named after P.M. Masherov, Vitebsk, Belarus

Every year for introduction in educational process tens of programs are offered, allowing for training on the Internet, but the little elaboration of the methodological foundations of their application in practice, and the narrow focus of these resources leaves a large front of work for each teacher. Cloud computing in modern society is the most perspective direction in development of an education system, the relevance is provided with also broad application in all spheres of activity of the person and corresponds to realization of mobile training which provides compliance of the concept of informatization of an education system of Republic of Belarus until 2020.

The purpose of this article is to reveal the concept of cloud technologies and to bring the advantages of using such a resource as Google Classroom in the educational process, as well as to summarize the practical experience of using cloud technologies in teaching graphic disciplines.

Material and methods. Material for this article was educational process of teaching discipline of "Descriptive geometry, engineering and machine graphics" at the Polotsk state university of an internal and correspondence form of education. The model of studying of this discipline based on the Google Class was developed

and introduced, namely electronic courses for pupils in this resource are created and the system of lecture, practical, test and additional tasks is built.

For assessment of efficiency of this model in teaching graphic disciplines, the following methods were used: the theoretical analysis of essence of a concept of a cloud computing, generalization of advantages of application of such resource as the Google Class in practice, experimental check of the developed model in practice and also observation, testing and poll among students.

Findings and their discussion. The term "cloud computing" was approved only in 2007. "Cloudy" technologies (from English cloud computing) are understood as granting to the user computer resources and capacities in the form of Internet services and applications which at the same time use unlimited number of users [1].

Cloud computing contributes to the development of such qualities as the mobility, communicativeness, organization, potential to continuous personal professional growth demands that it demands modern information society.

For several years at the Polotsk state university the organization of a working environment to be made about use of Google services, namely for work with students of all forms of education of the Google Class.

The choice is caused by a set of advantages and possesses the fullest range of a cloud computing, constantly extending and developing for ensuring complex support of work of educational space (the teacher, the pupil, group), has a possibility of creation of classes (simplifies registration and creation of groups), will allow to organize individual occupations; it is available on a set languages and has the Russian-language version of pages of the portal, has the system of confirmations, notifications, reminders; has an interactive help system; maintains free of charge most services and it is optimized on mobile devices and the majority of e-books.

So for teaching "Descriptive geometry, engineering and machine graphics" communication with students is completely built on the Google service in the Classroom, namely the issuance of all materials on the discipline (multimedia lectures, tutorials, reference books, tasks for practical and settlement-graphic tasks), monitoring their performance

Use in practice the Internet of a Google service the Class in educational process, shows increase in level of the gained knowledge and professional competences, namely gives the chance:

- effective studying of a subject due to the mobility of receiving both educational and reference information,

- work remotely and perform tasks of any level,

- work in team, and gain skills of communication performing collective task, communicating by means of cloud computing,

- development of strategic thinking for the organization of the individual and collective work,

- rational assessment of the gained knowledge, acquired skills and further development of professional competences.

Conclusion. As a result of the introduction of cloud computing in the process of teaching of graphic disciplines, students will gain skills to

understand, perceive and use information of any complexity level quickly, at the same time performing works both individually and collectively being in direct contact and on remote access. All these contributes to the increase of the quality of educational process and stimulation of the growth of professional competences of future experts of technical specialties.

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E-SCHOOL AS AN INNOVATIVE AREA OF TEACHING

J. Yushkevich
VSU named after P.M. Masherova, Vitebsk, Belarus

At this stage of development of pedagogical activity, one of the main places of innovation is e-school. This is a very young, but very promising project, which from the very beginning has established itself as the future of education in general. The e-school includes: interesting interactive lessons, an accessible online library, a direct link between the teacher and the parents of students. The opportunity for any schoolchild to learn from the methodical materials of the best teachers in the country, each child can receive a quality education without applying any financial costs to this. Interests and development areas for teachers have been taken into account, each teacher can prove himself, express himself, demonstrate his skills. Develop an interactive lesson, or a certain teaching methodology, which will be used not only in your lesson, but also the possibility of being freely available on the Internet for other teachers, to participate in the invisible rating of your colleagues. E-school provides an opportunity to visit the "open lessons" of the best teachers, learn from experience, diversify and replenish their activities with new material

The purpose of this article was to study the feasibility of using e-school, on the example of developing an interactive lesson in the visual arts.

Material and methods. The main basic research material is the Moscow e-school website. The methodology of this study is based on a comparative and systematic approach to the process of forming an interactive lesson. Research methods: study of educational and methodical literature, pedagogical observation, generalization of work experience of school teachers, comparison.

Findings and their discussion. "Moscow e-school" was created on January 2, 2016 No. Pr-15GS in order to provide the pedagogical space with methodological and didactic resources [1]. All materials are developed in the framework of the program of the Ministry of Education and Science of the Russian Federation. The aim of the project is to create a course of interactive lessons in all general education subjects that meet the basic educational

standards, based on the experience of the best teachers. Today, it is an opportunity to deeply educate gifted children, disabled children, students with disabilities, even with distance learning, the acquisition and control of knowledge is fully implemented. To verify the feasibility of using this project, we developed our first interactive lesson, which resulted in the conclusions: that these are truly innovative technologies that will definitely change the educational system as a whole.

The lesson is called: "Your Books," which was developed in the framework of the B. Nemensky program for third grades. Type of lesson: combined.

Type of activity: design, design and graphic activities. Objective: to create conditions for the development of students' skills in the method of manufacturing and design of the project of a folding book for a children's fairy tale or literary work. Learning objectives: the formation of students' ability to work with new information on the topic (select, select, build logically, summarize) for self-determination of the topic and purpose of the lesson; the formation of the ability to distinguish, classify the types and genres of art; the formation of the ability to listen and hear, build speech statements; the formation of new concepts of the basic elements of the book's structure; bookend; book graphics, mastering markup techniques. Educators: the development of autonomy, creativity and the ability to plan, adjust, monitor and evaluate their activities.

At the first stages of work in the e-school designer, faced with this program, difficulties arose with programmed features, since many elements are formed in computer programs, which were easily solved thanks to instructions for teachers. The lesson is divided into six stages, this is the minimum number that is set by the moderators. Each stage has three forms of arrangement: a dialogue board, a teacher's tablet, a student's tablet, in the process of conducting a lesson, the teacher will be able to regulate what students have access to, thereby fully controlling the educational process. We made the first stage informational, a set of useful information and additional illustrations of literary works. G. S. Fedkov, for example, pointed out that the development of figurative thinking of schoolchildren in the process of perception of works of art is well contributed by the illustrations to fairy tales [2].

On the students' tablet, test questions are set, for better learning.

The second stage: "At the beginning of book publishing" consists of historical aspects of the formation of book graphics, the material is supported by slides. For better expressiveness, on the students' tablet, we installed an interactive application, to test knowledge, which is designed as a game, the exercises must be performed independently. The student will immediately be able to check their questions and see explanations for errors.

The third stage: "What the book consists of", which reveals the technical condition of the book, its elements, gives a full visual and theoretical design. An application with a picture of a book in the form of a slide on which the student can indicate the constituent books is installed on the students' tablet, the whole process takes a little time in the lesson, but significantly enlivens the learning process.

On the fourth stage, we installed a video in an accelerated mode, which clearly demonstrates the whole process of creating an illustration. Each stage has its own time limiter, thereby correcting the work of the teacher and its interactive equipment.

Fifth stage: "7 fabulous illustrators" introduces us to the work of famous book graphics. The task is filled with slides of famous illustrations that students can independently turn over and stop their view on the most interesting work.

The sixth stage is in the form of the implementation of the main task in the lesson, where we predict the final result, set the goal and ways to achieve the most effective result. The students' slide shows a list of questions that students should answer. Thus, there is a thoughtful analysis of the work being done.

Conclusion. The presented lesson simplifies the work of the teacher in the lesson and increases the motivation of students. Informative material of the lesson immerses the student in the environment of a given topic. The whole learning process is built in the form of a game. The use of interactive lessons changes the horizons of learning and expands it. The lesson takes place in a different mode, in which absolutely everything works. Certainly, soon, the interactive lesson will completely replace the traditional one, and thanks to new technologies, the level of education will increase significantly.

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THE ROLE OF WATERCOLORS IN LEARNING STUDENTS OF ARTISTIC SPECIALTIES

E. Zaznoba
VSU named after P.M. Masherov, Vitebsk, Belarus

Watercolor painting is an important stage in the training of university students, which forms the creative qualities, professional abilities, artistic and imaginative thinking and world outlook. The technique of watercolor painting has its own specifics, which is manifested in the techniques, rules and methods of conducting pictorial work. Its development contributes to a more in-depth understanding of the foundations of artistic mastery.

The relevance of the topic is that watercolor painting is a basic subject for the development of professional abilities of students of artistic specialties, a part of creative activity, which is necessary for the perception of the surrounding world, artistic and imaginative thinking.

The purpose of the article is to study the role of watercolor painting in teaching art students.

Material and methods. The material of the research is the analysis of watercolor painting classes among students of 1-2 courses of the art-graphic

faculty of the Voronezh State University named after P.M. Masherov. The study involved 54 students. The study used comparative comparative descriptive and analytical analysis of the results of students' learning activities.

Findings and their discussion. Watercolor painting is a technique that uses water-based paints, which form transparent layers and the effect of lightness and airiness [2, p. 5; 3, p. 53]. The art of watercolor comes from the culture of perception of the world, where emotions and feelings are formed, which are felt through communication with nature and a work of art.

The uniqueness of the technique of watercolor painting is:
• emotional and spiritual reflection by pictorial means of the surrounding reality;
• pedagogically organized process, which is aimed at the development of figurative thinking, imagination, self-knowledge, etc.;
• mastering artistic techniques and ways of watercolor painting.

Education of art students includes mastering the technique of watercolor. Theoretical and practical knowledge of a student in watercolor painting is an indicator of personality development in the field of artistic creation.

The main task of the development of a creative personality is the study of painting, which forms the culture, artistic taste in the professional sphere of the future specialist, creative activity in the study of the surrounding world.

Natural phenomena and sociocultural processes influence the development of the artistic and imaginative thinking of a person, which is a verbal education, born on the basis of non-verbal feelings from what he saw. Artistic techniques of watercolor painting provide the breadth of interpretation of the surrounding world, which is important in professional activities [1, p. 12].

In the process of learning watercolor painting, beginning artists should understand the basics of the laws of painting - these are the laws of tone and color relationships, coloristics, methods of doing work, as well as the laws of painting techniques, the ability to bring an image to color and tonal integrity, perspective, plastic anatomy.

Watercolor painting is rich in a variety of techniques. Among them are:
• technique of multi-layered watercolor painting (glaze);
• technique "raw" (English watercolor);
• technology "dry";
• equipment "A la prima";
• salt technology;
• equipment using crumpled paper;
• equipment using a combination of different materials;
• washing technique.

The technique of multi-layered watercolor painting or glaze is a method of applying transparent layers with watercolors when the top layer must be dry in order to avoid mixing paints. Smears are applied neatly, so as not to erode dried areas of work. The advantage of technology is precisely the transmitting part of the environment and the saturation of work.

The main essence of technology "in a crude way" is the application of paint on a wetted sheet with water. The advantages of technology is to obtain transparency and ease of operation, soft color transitions. The complexity of the technique lies in the fluidity of watercolor paints. Fix a separate part of the work is difficult, but it is almost impossible.

The "dry" technique is the application of paints on dry paper of one or several layers, in accordance with the ideas of the work. This technique allows you to control the flow of paints, as well as the tonality and shape of strokes.

Technique "A La Prima" - this is a crude painting. Such a painting is written quickly, when the effects of overflow and paint streaks are created. Advantages of technology are spreading paint, which makes the work airy, light and transparent. The difficulty lies in the impossibility of correcting the work due to the spreading paint on the water. The work is written in one session, the brush touches no more than two times a separate section of paper.

Salt technology contributes to uneven erosion of paint. In this technique, the effect of the first layer of paint. A special feature is the inability to predict how salt will corrode the paint.

Technique with the use of crumpled paper demonstrates the accumulation of paint at the bends of the sheet, with this effect creates additional volume and texture.

Technique using other materials is a mixture of watercolors with other art materials. This technique is not purely watercolor. When combined with watercolor pencils, you can give a saturation of shades in the work. The mascara is used for brushing or pen drawing. White is used for ease of painting. It is difficult to distinguish bright places in the work, so artists use whitewash.

Conclusion. The washing technique is a manifestation of the shape of the object, using the overlay of layers in gradation from flare to shade. This technique is called tonal elaboration of the subject. Washing is a simple, but, however, lengthy process in watercolor technique.

Conclusion Watercolor painting is an important stage in teaching students. It affects the development of creative abilities, creative thinking and culture in the professional field. Skills and skills in watercolor painting are an important component of vocational training. The main task of students is to study the elements and technologies of art materials.

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ACTUAL PROBLEMS OF THEORY AND PRACTICE OF JURISPRUDENCE AND FINANCE

THEORETICAL FOUNDATIONS OF FACTORING: THE IMPLEMENTATION OF THE SCHEME, TYPES AND FORMS

U. Antonenka
VSU named after P.M. Masherov, Vitebsk, Belarus

Today, the financial stability of the company is a real "headache" for the economists in many country. Financial stability is determined throughout the production process and is the main link in the overall stability of the enterprise. In the current economic environment, financial sustainability management is becoming more important than ever for the financiers of each enterprise and factoring is one of the tools to help fight financial instability. Thanks to factoring, the supplier has the ability to cover the risks associated with non-payment or late payment of deliveries by buyers, as well as to effectively manage accounts receivable. In addition, the supplier can also focus on the development of the company.

The purpose of the study: to characterize the category of "factoring" and to determine the basis of its implementation.

Material and methods. Tthe scientific research is based on the works of domestic and foreign scientists, as well as the data of Belorussian Bank System. The study used the following scientific methods: cognition, analysis and synthesis, comparative analysis.

Findings and their discussion. Factoring means financing by assignment of a monetary claim in which one party (factor) undertakes to the other party (creditor) to enter into a monetary obligation between the creditor and the debtor on the creditor's side by paying to the creditor the amount of the debtor's monetary obligation at a discount. In other words, factoring is a crediting of the working capital of the supplier enterprise, in which there is an assignment to the Bank of unpaid debt claims arising between producers and consumers in the process of sale of goods [1].

Factoring services are very suitable for companies working with their customers on deferred payment terms. This type of service can become the basis for supporting small and medium-sized businesses, because in this segment entrepreneurs can not always use the standard credit sources of financing offered by banks. Factoring is necessary for those companies that want to quickly receive funds to close emerging cash gaps, solve current business problems, increase turnover, etc. It should be noted that factoring operations allow enterprises to cope with such difficulties as lack of working capital, high receivables,etc.

Factoring stages:

1. Factor's client makes a deal with the buyer: ships goods/provides services on deferred payment terms;

2. The factor client applies to the Bank or factoring company for

financing, the parties enter into a factoring agreement, under which the creditor assigns to the factor the right to claim funds for the shipped goods/services rendered to the debtor (buyer);

3. The factor transfers to the current (settlement) account of the creditor the amount of the debtor's monetary obligation (excluding discount);

4. The debtor transfers to the account of the factor (with open factoring) or the creditor (with hidden factoring) money for the purchased goods/services within the period allotted for deferred payment;

5. The creditor from the funds received from the debtor to pay for the previously shipped goods/services rendered, repays obligations to the factor (with hidden factoring).

Conclusion. Factoring is effective for small and medium-sized enterprises, which usually have difficulties with working capital. Their lack of access to conventional capital markets increases their need for short-term commercial and Bank loans to replenish working capital. Working with factoring allows these firms to receive cash resources for goods and services sold as soon as possible after delivery and send them back to their own business, which in turn serves as an excellent incentive to increase turnover and business.

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BASIC LEGAL PRINCIPLES OF CRIME PREVENTION IN THE REPUBLIC OF BELARUS AND TURKMENISTAN: COMPARATIVE ANALYSIS

M. Babayeva
VSU named after P.M. Masherov, Vitebsk, Belarus

The urgency of the problem is determined primarily by the fact that crime prevention, which is a complex process based on a set of measures aimed at minimizing the manifestation of criminogenic factors that reproduced crime, is one of the most important tasks of any state. The importance of conducting a comparative legal analysis of crime prevention systems in the Republic of Belarus and Turkmenistan is reinforced by the practical absence of such studies.

The purpose of this research to give legal analysis of crime prevention under the legislation of the Republic of Belarus and Turkmenistan.

Material and methods. The legislation of the Republic of Belarus and Turkmenistan is being studied. The study is based on the comparative method and is formally based on the comparative and formal legal method.

Findings and their discussion. The legislative base of national crime prevention systems in the countries in question is constituted by constitutional principles, relevant international law norms, international treaties, criminal legislation, national and regional state crime prevention programs, and other regulatory legal acts defining this activity. The general principles of crime prevention are reflected in the Criminal Code and the Administrative Codes of the Republic of Belarus and Turkmenistan, and, moreover, they are almost identical. Thus, part 1 of Article 2 of the Criminal Code "Tasks of criminal law" states that "The criminal legislation of Turkmenistan has the task of protecting the person, the right and freedom of citizens, the interests of society and the state, property, public order, independence, constitutional order and neutral status of peace and security of mankind from criminal encroachment, as well as crime prevention" [1, Article 2]. Approximately the same provisions are reflected in the Criminal Code of the Republic of Belarus: "… The Criminal Code of the Republic of Belarus contributes to the prevention of criminal encroachment, educating citizens in the spirit of compliance with the legislation of the Republic of Belarus" [2, Article 2].

Establishing the task to be solved by criminal law, art. 2 of the Criminal Code of Turkmenistan defines both the protective and preventive (preventive) function of criminal law. The latter can be divided into two types, in accordance with the criminal legislation of Turkmenistan:

1) private prevention, aimed at preventing the illegal activities of persons who have previously committed crimes. This type of prevention includes a system of measures of criminal punishment or coercive measures of educational influence on minors, as well as measures of a medical nature in relation to person who have committed a crime in a state of insanity, patients with alcoholism, drug addiction or substance abuse;

2) general prevention, the purpose of which is to prevent the commission of a crime by others. This type of prevention includes the criminal prohibition itself, as well as legal incentives for the offender to switch to lawful behaviour, for example, exemption from criminal liability when voluntarily surrendering weapons, ammunition, explosives or explosive devices [1, Art. 287], actively promoting the disclosure or suppression of crime [1, Art. 292]; voluntary passing of the pass [1, Art. 306-1], with the voluntary release of the victim in trafficking on persons and promoting the disclosure of the crime [1, Art. 129-1] and others.

Analysis of the legislation of the Republic of Belarus allows to conclude that the basis of the crime prevention policy is also based on two basic directions, the first of which is reflected in legal norms affecting the criminal conditions determining

criminal behavior, and the second is to legally fix the rights and obligations state bodies and official bodies, citizens in the field of crime prevention [3].

In the republic of Belarus and in Turkmenistan, special legislative acts regulating crime prevention activities have been adopted and are in force. These include national laws regulating the activities of law enforcement agencies (on internal affairs agencies, prosecutors, and state security), as well as laws on countering the most dangerous types of crime (laws on countering corruption, human trafficking, drug trafficking, terrorism criminal proceeds, etc.)

Existing differences in the legislative framework of the activity in question should also be avenged. Thus, unlike Turkmenistan, in the Republic of Belarus, preventive activities are regulated by a special Law on the Basics of Crime Prevention (2014) [3]. In turn, a positive example for the Belarusian legislator can serve valid in Turkmenistan Law on state protection of victims, witnesses and other participants in criminal proceedings in 2016 [4].

Conclusion. The legislation of the Republic of Belarus and Turkmenistan, which ensures the prevention of offenses, with all their differences and peculiarities, is based on generally accepted principles and norms reflected in the international legal acts ratified by them. Both countries attach great importance to the institute for the preventions of crime, enshrining it in regulations governing activities aimed at protecting public order, the right and legitimate interests of citizens and legal entities.

The basic principles that should determine the state policy in the field of crime prevention are: defining and directing the activities of the state to create relevant institutions and legislative norms governing the practice of preventive activities; the relationship of crime prevention activities with relevant social and economic policy measures; coordination of government institutions and civil society; consistency and use of different strategies for different social groups and so-called. "Risk groups", with all the differences between the Republic of Belarus and Turkmenistan, are the basics of their criminal policy.

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ANALYSIS OF PROBLEMS AND PROSPECTS OF DEVELOPMENT OF THE MECHANISMS OF ATTRACTION OF FREE-OF-HAND (SPONSOR) ASSISTANCE FOR THE IMPLEMENTATION OF SCIENTIFIC PROJECTS

I. Gubarevich
VSU named after P.M. Masherova, Vitebsk, Belarus

Current trends in the development of the state, society and the economy make it necessary to «reset» relations between representatives of science and business, which are naturally necessary both for some participants in these relations and equally for others.

Science is a powerful intellectual industry that develops, primarily with a view to practice, to the introduction of research and development results into production, into the real economy. In this regard, for the implementation of the tasks facing the scientific community today, which are often dictated by the requirements of the economic development of the state and society, the issue of financing the scientific industry through the use of such a financial instrument as sponsorship arises.

The aim of our research is to describe current problems and prospects for the development of mechanisms for attracting and applying sponsorship for the implementation of scientific, innovative projects, to analyze current legislation and law enforcement practice.

Material and methods. The material of the research was law enforcement practice in the Vitebsk region, obtained from official open sources, as well as the norms of legislation governing this sphere of public relations. Descriptive-analytical and comparative methods were used.

Findings and their discussion. Currently, the mechanism of providing sponsorship assistance is regulated by the Decree of the President of the Republic of Belarus «On the provision and use of gratuitous (sponsorship) assistance» № 300 dated July 1, 2005 (hereinafter - the Decree) [1]. This regulatory legal act establishes a categorical apparatus used in the public relations under consideration, and also establishes the key stages of the sponsorship mechanism, including the provision of sponsorship for conducting scientific research within the framework of state research programs. It should be noted that in the Decree only the above-mentioned category belongs to the scientific sector, which, obviously, does not allow to fully solve the tasks that arise from the subjects of public relations that are formed when it is necessary to provide and receive free (sponsorship) assistance for the implementation of scientific , innovative projects. This deficiency, ultimately, does not allow to satisfy the mutual interests of the parties, or even leads to the fact that the parties are not aware of the presence of another subject of relations in which they are interested.

It is necessary to pay attention to the fact that at present, in accordance with the Decree, legal entities and individual entrepreneurs who provide grants (sponsorship) assistance in the form of monetary funds determine the type of goods (works, services) that will be purchased for these funds by recipients such help. The transfer of funds without specifying the types of such goods (works, services) is not allowed. After analyzing the law enforcement practice in this regard, we can conclude that this provision of the Decree needs to be improved. Since at the initial stage of conducting a scientific study, it is not always possible to determine the required quantity and type of goods (works, services) that will later be needed to achieve the goal set in the course of scientific research, and the rule of the Decree clearly defines the absence of the possibility of adjusting these conditions.

The decree also fixes the norm according to which, when providing (receiving) gratuitous (sponsorship) assistance, legal entities, individual entrepreneurs and other individuals shall calculate and pay taxes, fees (duties) in accordance with the law. Individual state support, benefits to pay taxes, fees (duties), including the right to include in the non-operating expenses for tax purposes amounts of donated funds, the cost of donated services (works) and transferred property, in the prescribed manner provided by the President Republic of Belarus or by law. This provision, in our opinion, also has a certain disadvantage. It would be advisable to more accurately describe the procedure for applying or even eliminate taxation on the amount of money donated for the implementation of scientific, innovative projects. This, to a certain extent, would be a motivation for the private sector of the economy, and in the long term would give a positive trend in building an economy that would be based on promising scientific and innovative developments.

Conclusion. In order to develop mechanisms for attracting and applying sponsorship for the implementation of scientific, innovative projects, it is necessary to refine the existing legal norms on the basis of the established practice of application and the requirements of the modern market for innovations and technologies. Simplify the procedure for providing free (sponsorship) assistance to sponsors and investors, including foreign ones, since these actions in the near future will increase the attractiveness of the Republic of Belarus at the international level in the field of high-tech and innovation transfer.

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CONSTITUTIONAL AND LEGAL REGULATION
OF STATUS OF CHURCHES AND RELIGIOUS ORGANIZATIONS
IN THE REPUBLIC OF BELARUS AND FOREIGN COUNTRIES

V. Degtereva
VSU named after P.M. Masherov, Vitebsk, Belarus

At present, in the modern world, social tensions and instability are increasing. Many problems are faced by problems and sharp contradictions, which is partly due to the loss of moral guidelines by mankind. In this regard, the modern world needs the use of all public resources to ensure true equality, humanism, freedom, material and spiritual well-being of the individual. In cases where vocations solve many large-scale social and moral problems.

The purpose of our stady is to analyze and study the constitutional and legal regulation of the status of churches and religious organizations in the Republic of Belarus and foreign countries.

Material and methods. As a material for analysis and research, the legislation of the Republic of Belarus and foreign countries, the work of specialists in the field of legal regulation of the status of churches and religious organizations were applied. The methods used were the following: the formal legal method, the special legal method and the comparative legal method

Findings and their discussion. Religious activities in the Republic of Belarus are regulated by Articles 16 and 31 of the Constitution of the Republic of Belarus, the Law "On Freedom of Conscience and Religious Organizations". So, in art. 31 of the Constitution of the Republic of Belarus, which refers to the right of every person, regardless of his attitude towards her or not to profess any [1]. This right is set forth in more detail in Art. 4, 5, 9 of the Law "On Freedom of Conscience and Religious Organizations" [2]. Referring to the constitutional legislation of European countries, please note that there are the following systems of constitutional interaction between states and religious organizations.

At present, in the European states as a whole, the principle of separation of church from state or principle of secular state has been approved. In accordance with this principle, it is stipulated that religion is a personal matter of every person, and therefore state authorities should refuse to participate in religious life, thereby proclaiming freedom of conscience and freedom of religion. At the same time, the separation of church and state is determined by a number of features. The Law of the Republic of Belarus "On Freedom of Conscience and Religious Organizations" states the historical significance of cultural, spiritual and moral values of the Belarusian population [2]. The Constitution of the Republic of Belarus does not literally call Belarus a secular state. In Art. 16 of the Constitution contain a ban on sovereign republics, their system or related to non-observance of the rights and freedoms of constitutional citizens, as well as preventing the citizens from fulfilling their state, public, family duties or causing

damage to their health and morality. In the Preamble of the Legislation, which states that he, in the opinion of representatives of other faiths, is placed in a better position in the state compared to others [1]. Evidence of this confirmation is the Concordat between the Republic of Belarus and the Belarusian Orthodox Church of June 12, 2003. This is the only agreement of this kind at the moment.

Catholic Church in its territory. In the Decree of the President of the Republic of Belarus "From public holidays, holidays and memorable dates in the Republic of Belarus" of March 26, 1998 No. 157 in paragraph 3, Catholic Christmas is recognized as a public holiday [3]. In general, analyzing the latest edition of the Law "On Freedom of Conscience and Religious Organizations", we can single out its basic principles: the right of everyone to the freedom of conscience and freedom of religion, the right to equality before the law, regardless of their attitude to religion; freedom of religion before the law; the adoption of the leading role of the Orthodox Church in the historical development and development of the spiritual, cultural and state traditions of the people of Belarus; the spiritual, cultural, and historical significance of the Catholic Church in Belarus; inherent in the single history of the people of Belarus as the Evangelical Lutheran Church, Judaism, Islam; [2]. Similarly, in the Constitution of the Russian Federation in Art. 14 Russia is declared a secular state, that is, none religion is not established as compulsory and freedom of religion is granted [4].

In some European countries, at the constitutional level, the legal inequality of certain religious denominations is enshrined: this or that religion is proclaimed as state, official or dominant. For example, the Constitution of Norway in article 2 states that the official, state religion is the Gospel Lutheran religion. In Britain, the official state churches in England are the Anglican Church in England and the Presbyterian Church in Scotland. The head of both churches is the monarch of England. In the British Parliament in the House of Lords there is a certain quota for church priests, who occupy life-long seats in this house. This suggests that the religious community is part of the political system and participates in the legislative process [5].

Despite the fact that in the modern world the principle of secularism has developed in many countries, in some countries it is not observed, which leads to contradictions. The Constitution of Spain in Art. 16 recognizes the equality of all religions. At the same time, the constitution recognizes a special relationship with the Roman Catholic Church [6]. In the Constitution of Greece from Art. 13 recognizes the freedom of all known religions, their right to protection, control by the state, and the fulfillment of the same obligations regarding it. However, art. 3 recognizes the dominant Eastern Orthodox Christian church [7]. These contradictions led to the discussion in 2018 of the issue of the modernization of this article and the consolidation of the religious neutrality of the state. Greek Prime Minister Alexis Tsipras, Archbishop Jerome and members of the Synod of the Orthodox Church of Greece signed a joint statement that defines the conditions for the separation of church and state in the framework of constitutional reform [8].

Conclusion. Research and analysis of the novels of national and foreign legislation allows us to draw conclusions that constitutional and legal conditions have been created in the Republic of Belarus and democratic states for the full realization of freedom of conscience and religion, as well as the functioning of religious organizations. Respect for religion, awareness of the positive role of traditional views, their support and encouragement of the spiritual and educational work of the church are consolidated.

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LEGAL REGULATION OF PSYCHOLOGICAL ASSISTANCE TO POPULATION IN THE REPUBLIC OF BELARUS AND FOREIGN COUNTRIES

V. Leshuck
VSU named after P.M. Masherov, Vitebsk, Belarus

The modern world is characterized by increasing stress on the human psyche. The decrease in the level of social support and other features of modern life lead to emotional stress, which becomes one of the factors of neuropsychiatric diseases.According to the WHO, over the 20th century, the average index of mental indications per 1000 people has grown by more than

4 times[1].Thus, in modern society, psychological assistance and support of the population, as well as the legal regulation of such assistance are relevant state functions and tasks.

The purpose of this research is to study the legal regulation of psychological assistance to the population in the Republic of Belarus and foreign countries.

Material and methods. As a material for the study, the works of domestic and foreign experts in the field of legal regulation of psychological assistance to the population, legislation of the Republic of Belarus and foreign countries in this area were used.The following methods were used: the formal legal method, the comparative legal method.

Findings and their discussion. In the Republic of Belarus legislation in the field of psychological assistance is based on the Constitution of the Republic of Belarus and consists of the Law of the Republic of Belarus "On provision of psychological assistance", the Law of the Republic of Belarus "On the provision of mental health care", acts of the President of the Republic of Belarus, the Decision of the Constitutional Court of the Republic of Belarus "About compliance of the Constitution of the Republic of Belarus with the Law of the Republic of Belarus "On provision of psychological assistance", Resolutions of the Ministry of Health of the Republic of Belarus and the Ministry of Education of the Republic of Belarus "On the approval of the Instruction on the procedure and conditions for the application of methods and techniques for the provision of psychological assistance and other legislative acts [2, Art. 45; 3].

The Law of the Republic of Belarus "On the provision of psychological assistance" defines the goals and basic concepts, requirements for a psychologist, types, principles, forms, methods, procedures and conditions for the provision of psychological assistance,features of state regulation of psychological assistance, as well as the rights and duties of psychologists, rights and duties of citizens in the provision of psychological assistance [3].

The qualification requirements, which are the basis of professional activity, are of great importance for the profession of psychologist. The law defines the range of persons who can provide psychological assistance to the population. A psychologist can be a person who has a higher psychological education, or a higher medical education, or a higher pedagogical education, has a doctoral degree or a candidate of psychological sciences, has been retrained at the higher education level in the specialty of practical psychology, medical psychology, psychology. No less important for this profession are ethical requirements.Thus, it is not allowed to directly provide psychological assistance to persons who previously performed educational functions and were dismissed for committing immoral misconduct, which is incompatible with the continuation of such work.[3, Part 4 of article 4].

The basic principles of the psychologist's work include: the principle of legality, respect and observance of the rights and legitimate interests of citizens,

voluntary psychological assistance, access to this assistance, confidentiality, scientific validity and professionalism[3, Art. 14].

The basis of any psychological assistance should be the confidentiality of the psychologist's activities which areestablished and guaranteed by law.Thus, the law establishes that one of the principles of psychological assistance is the principle of confidentiality.Confidentiality, enshrined in the law, allows for a number of guarantees of the rights of the person who is receiving psychological assistance, and the legal immunity of the psychologist to protect information about his patient[3, Art. 15].

Today the role of consulting psychologists is increasing. In Belarus, its founder can be called L. S. Vygotsky.He was ahead of time by opening a psychological office in Gomel.The ideas of the scientist became the basis for the development of the system of psychological assistance to the population in the post-Soviet space [1].The Law of the Republic of Belarus "On the provision of psychological assistance" defines psychological counseling asa set of measures that are aimed at assisting the citizen (group of citizens) in the resolution of psychological problems,in particular, in making decisions regarding professional activities, interpersonal relations, personal development, self-improvement and self-realization, to overcome the consequences of crisis situations.The law also defines other types of psychological assistance: psychological correction, psychological prevention, psychological education [3].

Innovations in the legislation of the Republic of Belarus in the field of psychological assistance to the population are:1. Amendments to the Law of the Republic of Belarus "On Mass Media".Thus, the list of types of information, the dissemination of which is prohibited, has been expanded.According to the changes, the dissemination of information that promotes or encourages suicide is prohibited in the media [4];2. The concept of the bill "On counteracting domestic violence".The main purpose of the bill is to protect the rights of citizens who are subjected to domestic violence.

Analyzing the legislation of the Russian Federation, it should be noted that at the moment at the federal level there is no law regulating relations in the provision of psychological assistance to the population.However, the legal regulation of psychological assistance exists at the level of sectoral laws.Also at the regional level in 2010 the Moscow city Duma adopted the law "On psychological assistance to the population in Moscow".However, isolated legal acts, sometimes conflicting, do not provide the necessary legal regulation of psychological assistance [5].

Interesting is the experience of France.Volunteers from rescue teams who have undergone compulsory psychological training are attracted to provide first aid to emergency participants.In cities with a population of more than 20 thousand people,on a permanent basis there are medico-psychological centers (Céntres Medico-Psychologiques) [6].

In the United States, there is a law according to which the state Department of education must operate the service of practical psychology.Similar legal acts are in force in a number of European countries[5].

In the United States and several other countries, the types of remote psychological assistance via the Internet are rapidly developing.The American Association of Remote Counseling, defines distance counseling as a practice of searching and receiving assistance via the Internet.The American Counseling Association, the International Society for Mental Health Online, the American Psychological Association and other organizations have developed ethical rules for the practice of distance counseling [7].Also one of the types of distant counseling is a telephone emergency psychological assistance to the population. In Belarus, this service is known as the "helpline".

Conclusion. The innovations described above in the legislation positively affect the regulation of social relations in the field of mental healthof the population.The introduction of examples of effective organization and functioning of the studied areas of foreign countries opens up opportunities for strategic development and improvement of the regulation of psychological assistance to the population in Belarus.Thus, for the Republic of Belarus, the priority direction in the provision of psychological assistance to the population may be the development of distant counseling, in particular, the provision of psychological assistance through the Internet.Summarizing the overall analysis of the legal regulation of psychological assistance in Belarus and other countries, we can consider the experience of the Republic of Belarus to be quite useful and promising for some states.

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INNOVATION SYSTEM AND ITS ROLE IN STIMULATING SOCIO-ECONOMIC DEVELOPMENT

A. Labachova
VSU named after P.M. Masherov, Vitebsk, Belarus

Innovations and innovational activities are among the key factors of social and economic development. Implementation of innovations at various economic space levels, the effective use of various innovations financing instruments, the rational structure of innovations management mechanisms at the government and enterprise levels altogether determine the prospects for the development of enterprises of various form of ownership. But they also serve as a factor of the competitiveness of entire industries, regions, as well as the success of structural reforms in the economy as a whole. The above defines the choice of the topic of this study and its relevance.

The purpose of the study to characterize the concept, the structure and the role of the innovation system in the processes of stimulating the innovation driven development of macroeconomic systems.

Material and methods. The research is based on the official statistics of Republic of Belarus, theoretical and methodological framework of economics and regional studies in the field of innovation-driven development. The methodical apparatus of the research constitutes of general scientific cognition methods, analysis and synthesis, comparative analysis.

Findings and their discussion. In the theory of innovation driven development, there are at least two main approaches to innovations. According to the first, all components of innovation driven development represent a set of elements united in one socio-economic plane, called innovative field. According to the second, systemic approach, innovations arise within the framework of the innovation system of a certain territorial-spatial unit (locality, district, region), as well as the entire national economy, where each regional innovation system is a subsystem of the national and has its own unique characteristics.

Innovative activity is a complex process of transformation of the received ideas and knowledge into the object of economic relations. This process is a holistic multilevel system of economic relations of "materialization" of knowledge, which is characterized by specific relationships and patterns [1, c. 118]. Given the crucial role that innovation processes play in the modern

economy, identifying these features and considering them while planning and implementing the measures to stimulate innovation development is a prerequisite for economic growth. As the Russian economist K. Mikulsky rightly points out, the innovation process cannot be limited to narrow sectoral framework, since there is interdependency between innovation processes in different sectors of the economy, within the same technological chain, different enterprises, etc. [2, p. 11].

The innovation process is incepted in the lower part of the economic structure – within enterprises. The pursuit of profit maximization pushes entrepreneurs to improve the process of management, the use of technological, organizational and other innovations. Competition makes them vital. These impulses are transmitted to the higher levels of the economic system, which on the one hand consist of economic units, and on the other – created to support and promote their development. Therefore, the efficient functioning of the economy as such is possible only under the condition of the coordinated innovation activity of all its elements, each of which performs its functions in the national mechanism of innovation.

Thus, the potential of innovation driven development arises, is used and developed within the framework of innovative systems of different levels. Therefore, the characterization and structuring of such systems is a necessary component of the study of socio-economic development factors.

Theoretical studies of Western economists show some difficulties in unambiguous distinction between national, regional and local innovation systems. Some authors suggest to abandon attempts of gradation of innovative systems from the point of view of levels of economic space and to consider any innovative systems of the lowest levels as an integral element of national systems [3; 4].

At the same time, despite some differences in the definitions of innovation systems by different authors, in general, there is a relative consensus in understanding of innovation systems' structure. Most of the economists agree that the innovation system is both an organizational and institutional network, emerging within certain territorial framework. It is a set of formally and informally interrelated organizations (small and large companies, universities, laboratories, technology parks and incubators), involved in the processes of creation and commercial implementation of new applied knowledge, and simultaneously a set of specific, unique for each individual territory and the country as a whole, legal, financial and public institutions that ensure the flow of innovation processes.

Thus, structurally and functionally, the innovation system of lower and higher levels are virtually identical, and include the elements responsible for the creation and dissemination of knowledge, commercialization of developments, the building of human capacities and funding, and together the components of innovation infrastructure [5, p. 77]. This fact is due to the similarity of the

processes implemented in the framework of innovation at any level of the economic space. However, it is the study of the regional innovation system that provides the necessary level of detail of scientific knowledge, which allows to take into account the specifics and peculiarities of each individual territory within the state, and therefore creates objective prerequisites for more effective management of the system as a whole.

Conclusion. Summarizing the materials of the study, it can be noted that innovation driven development, which is a key factor of economic growth in modern conditions, requires the formation of appropriate material and intangible infrastructure. This infrastructure is a complex multi-level system consisting of interconnected innovation systems at the local, regional and national levels. The composition and structure of such systems are similar, but the level of regional innovation systems provides the optimal level of detail necessary for the formation of appropriate macroeconomic decisions. The actual task is the analysis of such systems in the Republic of Belarus and the formation on the basis of this analysis of financial and legal mechanisms to stimulate innovation, which is a prospective area of our research.

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THE PROBLEM OF IMPROVING OF GOODS TRANSPORTATION THROUGH CUSTOMS COMMITTEES ON THE BASIS OF THE LOGISTIC APPROACH IN THE REPUBLIC OF BELARUS

E. Orametov, S. Goryacheva
Educational Establishment of Vitebsk Branch of Belarusian Federation
Of Trade Unions "International University of «MITSO»",
Vitebsk, Belarus

Economic globalization and liberalization of world trade in modern economic conditions impose new requirements on the organization of customs. The use of a logistic approach to the management of export-import commodity flows has become particularly relevant in the conditions of instability of the Belarusian economy. This is due to the intensification and expansion of foreign

economic relations of the state, as well as the dynamic expansion of horizontal ties between the business entities of the partner countries. The possibilities for improving cooperation on the basis of expanding economic independence, the initiative of intermediary structures and transport organizations, improving their contractual relations and mutual economic incentives have increased.

The goal of our research is to consider the problem of improving of goods transportation through customs committees on the basis of the logistic approach in the Republic of Belarus.

Material and methods. The following methods were used in the research: statistical data, electronic information resources presented by the State Customs Committee of the Republic of Belarus and the Ministry of Transport and Communications of the Republic of Belarus, a review of scientific journals on the subject. The main research methods: comparison, grouping, analysis of logistic literature on the problem and generalization.

Findings and their discussion. In the conditions of the formation and development of the logistics system in the Republic of Belarus, it can be noted only a fragmentary use of logistic approaches in the implementation of foreign trade operations [2].

New developments of scientists, domestic experience, as well as the experience of our foreign partners, shows that at present a systematic approach is needed to improve the quality of management of the transport component of any national economy based on logistic principles of interaction between the subjects of the commodity and transport markets. Therefore, the regulation of transport flows based on the principles of logistics over the past decade has been and remains the subject of active study by both foreign scientists and Belarusian scientists. The transport infrastructure of the Republic of Belarus includes road, rail, water, and air transport. The road network is 85.7 thousand km long, including 74 thousand km of hard-surface roads.

Thus, the role of transport in the Republic of Belarus is growing every year. Transport and logistics activities, logistics services provide customized logistics solutions for transportation, declaring, warehousing.

Efficient organization of the process of customs processing of goods in the transport and logistics system is impossible without the participation of enterprises and organizations specializing in performing certain customs operations. The most common was the institution of customs agents. Currently, there are about 200 customs agents in Belarus. However, the market for customs services is still emerging. A certain part of the domestic market for customs services operates under the "gray declaration" scheme. Thus, according to statistics from the total number of customs agents, only about 30 of them produce 200 or more clearance of goods per year. For comparison: RUP «Beltamozhservis» (Republican Unitary Enterprise) provides for customs clearance more than 10,000 batches of goods per year. Being the largest operator in the customs services market, currently «Beltamozhservis» RUP provides

them in 23 border and 48 internal customs clearance points, 11 temporary storage warehouses and 5 customs warehouses, 21 statistical declaration centers [5].

According to experts, to ensure the movement of the planned amount of foreign trade goods, it is necessary to create a sufficient number of commodity and logistics centers. The first centers should be established in regional centers and large industrial regions of the country. In our opinion, when choosing the most appropriate places for these centers and their planned capacities, it will not be based on the territorial principle, but on a generalized indicator of the share of gross regional product (GRP) in the gross domestic product of the country (GDP). Depending on the share of GRP in GDP, it is advisable to form the following types of infrastructure in the framework of transport and logistics systems: regional commodity and transport centers, interregional terminal and transport complexes.

Conclusion. Thus, completing our work, we are invited to highlight the following areas for improving the transportation of goods through customs through a logistical approach:

- the creation of modern customs and logistics centers. Logistics infrastructure directly affects the growth of a country's GDP. This is due to the provision of higher quality service for commodity flows in international logistics centers and the attraction of additional volume of goods passing through a transit country;

- introduction of innovative information and technical means to support the activities of customs authorities;

- creation of a unified inter-departmental automated system for collecting, storing and processing information for all types of state control over the movement of goods across the customs border;

- increase of transit attractiveness;

- reforming the organizational and management structure of customs authorities, built on a functional principle;

- improvement of the electronic customs declaration and development of an automatic release system;

- reduction of time for customs operations;

- improvement of customs legislation.

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INVESTMENT ATTRACTIVENESS OF HUMAN CAPITAL AND IT`S INNOVATION INFLUENCE

Y. Salakhova
VSU named after P.M. Masherov, Vitebsk, Belarus

Today it is scientifically proved that the human capital, which is embodied in skills and abilities of labor resources, is one of the key components of national wealth and a source of economic growth of the state. The qualitative level of accumulated human capital has a direct impact on the effectiveness of innovation at both the micro and macro levels. Therefore, providing an effective system of its reproduction, we can talk about an increase in the added value of innovation. In this context, we need to build not only an effective system of investment in the reproduction of human capital, but also the development of a financial mechanism for assessing its investment attractiveness in order to analyze the qualitative component. It`s predetermined the relevance of the scientific research topic.

The purpose of the study: to characterize the economic and investment aspects of the "human capital" and to determine the basis of the financial mechanism for assessing the investment attractiveness of human capital.

Material and methods. The scientific research is based on the works of domestic and foreign scientists, as well as analytical data of the World Bank. The study used the following General scientific methods: cognition, analysis and synthesis, comparative analysis.

Findings and their discussion. The relationships between the categories of "human capital", "investment" and "innovation" are the basis of many modern theories and mechanisms. The analysis of countries on the level of innovative development, efficiency of the investment system, the rate of economic growth, the level of human potential and the volume of national wealth showed that the more and more effectively resources are invested in improving the quality of human capital.

In recent years (from 1995 to 2015) the share of human capital in the national wealth of the Republic of Belarus has increased by 21%, and today is 0.46 trillion. US dollars, while physical and natural capital are equal to 0.32 and 0.21 trillion. US dollars, respectively [1]. In this case, the growth rate of human

capital, as well as the increase in its share in the Republic of Belarus fully coincide with global trends.

In this context, it is very important not only to invest in the reproduction of human capital, but also to assess the return on investment. To date, such conceptual techniques applicable in domestic practice have not been developed. Existing methods of assessing human capital do not allow to fully assess its increment. Therefore, the basis of the developed financial mechanism for assessing the investment attractiveness of human capital should be an aggregate indicator, which includes financial and economic indicators that determine the assessment of input human capital, the level of skills acquired in the course of performing their functional duties, the amount of investment resources spent on the reproduction of human capital.

In General, such mechanism will make it possible to operationally manage decisions on the personnel composition, as well as to develop a strategy taking into account the specifics of human capital.

Conclusion. In the Republic of Belarus at the present stage of development there is a reasonable need to develop a financial mechanism for assessing the investment attractiveness of human capital. This mechanism can be used for evaluation:

• individual human resources at the entrance and exit from the production and economic process of individual business entities;

• value of the company, taking into account the accumulated human capital;

• the volume of human capital increment in the process of its reproduction;

• qualitative level of human capital, etc.

All of the above confirms the feasibility of finding possible ways and methods of accounting and reflection of human capital in the financial and other reporting entities, government institutions and other participants of the macroeconomic system.

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PEDAGOGY OF CHILDHOOD IN THE MODERN CONTEXT: PROBLEMS AND PROSPECTS

IMPLEMENTATION OF OCAL HISTORY APPROACH IN THE FORMATION OF HISTORICAL KNOWLEDGE AND REPRESENTATIONS IN HIGH SCHOOL STUDENTS WITH INTELLIGENT INSUFFICIENCY

E. Buichenok
VSU named after P.M. Masherov, Vitebsk, Belarus

The study of the history of Belarus in the auxiliary school provides great opportunities for the necessary preparation of children with intellectual disabilities to conscious participation in public life. Thanks to this academic subject, students in this category learn to better navigate the world around them, they have a feeling of themselves, their country, a kind of interconnection of times and generations.

Historical knowledge in the learning process performs a number of functions and is aimed at creating ideas about historical reality; scientific picture of the development of human society; an indicative basis for action (an indication of how to proceed in the process of mastering knowledge: to determine a phenomenon, to reveal its essence, to make a comparison); emotional atmosphere, emotional, personal attitude to the cognizable reality, i.e., the personality is educated through history [1], [2].

Solving the tasks of local education in auxiliary school, one should take into account the characteristics of children with intellectual disabilities. On extracurricular activities in local history, correctional and developmental tasks are determined by the peculiarities of the development of mental processes of students with intellectual disabilities; the implementation of these tasks should be mainly aimed at the development of cognitive activity, the emotional-volitional sphere, personal qualities, taking into account both the typical general patterns of development of children with intellectual disabilities and the structure of the defect of each student.

The purpose of the study is to identify the characteristics of the formation of historical knowledge and representations of students in the senior classes of auxiliary schools.

Material and methods. A purposeful study of the level of formation of historical knowledge and perceptions of students with intellectual disabilities was conducted in February - March 2018 in the GUO "Auxiliary School No. 26 of Vitebsk". The total number of persons involved in the study was 14 high school students with intellectual disabilities. For the study, diagnostic tasks were compiled in the following areas: - diagnostics of the level of formation of historical knowledge and ideas in accordance with the curriculum; - diagnostics

of the level of knowledge and ideas about the Republic of Belarus, the city of Vitebsk and historical events related to it.

Findings and their discussion. A study of the level of historical knowledge of senior pupils in auxiliary schools showed that most students know the historical names of cities and can relate them to modern names. Therefore, when performing a task in which it was required to correlate the historical names of cities with their modern names, 64% of students with intellectual inadequacy coped with this task without errors, 29% of students made minor mistakes, therefore they partially coped with the task.

More substantial difficulties in the subjects caused the task of correlating the names of cities with the most likely origin of their names, since this task requires more extensive knowledge of the cities of Belarus. Thus, only 57% of students with intellectual deficiencies coped with this task, 7% of the subjects completed the task partially, 36% of high school students with intellectual insufficiency did not cope with the task, some probable variants of the origin of cities were chosen by students several times (for example: Egor K. chose Gomel city - 3 times, and Dima D. said that some options are not enough).

Objective difficulties for high school students with intellectual deficiency caused a task to translate the proposed years into the centuries, which is associated with typical difficulties in understanding the essence of historical time, insufficient mathematical literacy of students in this category.

The students of the auxiliary school showed an extremely low level of historical ideas in the performance of the task of recognizing famous historical objects / historical personalities while providing them with appropriate photos. In full, no one tested the task. 57% of pupils partially coped with intellectual deficiency, 43% of high school students did not cope with intellectual deficiency. For example, Veronika B. about the cross of Euphrosyne of Polotsk could tell the following: "The cross belongs to some girl", Nastya Sh .: "The cross belonged to a woman", Andrei V. said that "... this is a cross, he is baptized," Christina K. : "We were told about him on stories. He healed people, was stolen during the war, now they have made a fake ", Yegor K .:" Made of pure gold, they stole it twice, it belonged to a priest ".

According to the results of diagnostics of the level of formation of knowledge about the Republic of Belarus, the city of Vitebsk and the historical events related to it, the following conclusions were made. The greatest difficulty was caused by the question "What is the name of the main city, the center of the Vitebsk region?" One of 14 subjects answered it correctly (for example, Dima S. answered this question, "Freedom Square"). As you can see, children do not differentiate between the concepts "center of the region" and "city center" Only 6 high school students with intellectual disabilities answered the question "What are the residents of Vitebsk called?" Correctly, only 2 people correctly answered the question "Which rivers flow into the Western Dvina?", Calling Vitba and Luchёsu, another 5 subjects named one of these rivers.

The task of determining the historical objects of Vitebsk from photographs caused the greatest positive emotional response among students with intellectual disabilities. They had no difficulty in defining the image of the Memorial complex "Three bayonets", the Summer Amphitheater, the Yakub Kolas Drama Theater. The greatest difficulties were caused by the images of the "Meeting" sculpture and at home by the Marc Chagall Museum (2 subjects), a monument to Alexander Nevsky (5 students).

Studying the level of awareness of the names of the streets of the city of Vitebsk and the origin of their names among high school students with intellectual inadequacy showed that no student could cope with this task, even if there were answers. 71% of the subjects coped with the task partially, 29% could not complete this task.

The fulfillment of the task of defining the areas bordering the Vitebsk region demonstrated the lack of understanding of the concept of "area" in this aspect by students with intellectual inadequacy, as well as the lack of shape of the corresponding cartographic representations. In full, none of the subjects coped with this task, 57% of high school students coped with intellectual deficiency, 43% of senior pupils of auxiliary schools failed. Basically, the greatest problems arose at the very display of areas bordering the Vitebsk region. For example, Yevgeny M named as regions - neighbors: "Gorodok, Polotsk, Novopolotsk, Liozno"; some students had difficulties in showing even the Vitebsk region.

Conclusion. Thus, the results of the answers of the pupils of the senior classes of the auxiliary schools showed that their historical and local lore knowledge and ideas are fragmentary, fragile and undifferentiated; schoolchildren have significant difficulties in self-reproducing previously studied historical knowledge, so they need massive help. The reason for these identified features is both the low level of development of cognitive activity of schoolchildren with intellectual deficiency, and behavioral features and the lack of emotional-volitional tension, which are required to find adequate ways to solve intellectual tasks. Unformed motivational sphere, insufficient level of mental operations, objective features of memory can interfere with the qualitative assimilation of historical and local history material. Consequently, there is a need for specially organized pedagogical activity on the formation of historical knowledge and representations on local material, including in the framework of extracurricular activities. As an optimal form of organization of this activity, it is possible to call excursions that visualize historical knowledge, ideas and motivate to study the native land.

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TONGUE TWISTERS AS A SPEECH THERAPY TOOL

E. Bukhal
Brest State A.S. Pushkin University, Brest, Belarus

Researchers define a tongue twister as a short phrase, sentence or rhyme that is difficult to pronounce fast, as a rule, because of alliteration and repeated or similar sounds. Tongue twisters constitute part of many cultures' folklore, and were used in textbooks on rhetoric as "recreations in articulation" used to improve the principles of pronunciation to make it perfect.

Tongue twisters are quite a popular instrument of speech therapy. They are also useful in helping remove accent. Dentists give patients tongue twisters to recite in order to check new dental plates and artificial teeth. Actors and actresses are sometimes asked to say these rhymes to make sure that their speech is clear enough. Teachers ask students to repeat tongue twisters time and time again, as fast as they can. Of course, most tongue twisters are recited just for the fun of it or as a concentration test. The essential rule to follow when reciting tongue twisters is to pronounce them quickly and clearly as many times as possible, without making a mistake.

The purpose of the study was to research the applicability of tongue twisters in speech therapy as a tool for correcting speech and language pathologies – mispronunciation, disfluency etc.

Material and methods. The research involves analysing the syntactic and phonetic peculiarities of English tongue-twisters to describe the ways they can be practised to reinforce newly acquired articulation skills, increase mean length of utterance, and improve self-monitoring skills.

Findings and their discussion. One of the most common stylistic devices typical of tongue-twisters is alliteration, repetition of a sound, normally a consonant, at the beginning of neighbouring words, to produce a rhythmic effect.

Betty bit a bit of butter,
But it was a bitter bite,
But a bit of better butter,
Betty never bit [3].

Alliteration is regarded as a form of consonance [1]. However, in case of consonance the repeated sound can appear in any part of the word, while in alliteration the repeated consonant occurs in the stressed syllable. A vivid example of consonance is the famous tongue twister about Peter Piper.

Peter Piper picked a peck of pickled peppers.
A peck of pickled peppers Peter Piper picked.
If Peter Piper picked a peck of pickled peppers,
How many pickled peppers did Peter Piper pick?[2]

Most English consonants are produced by the tip of the tongue and the alveolar ridge. There are a lot of tongue-twisters that help practise the following sounds: [t], [d], [l], [n], [r], [s] and [z].

Dancing dangerously down the dale dainty Dinah dashed dizzily past Dorothy. Lotty loves lollies when lolling in the lobby. Round and round the rugged rock the ragged rascal runs his truly rural race [2].

Sibilance is a special type of consonance which involves the repetition of sibilant consonants – [s], [ʃ] and [z], for example:

She sells seashells by the seashore.

Lip flexibility is essential to secure clear and well-projected speech. The lips are used to make the bilabial [p], [b], [m] and [w] sounds.

Mother made Mary, Minnie and Molly march many times round the room to martial music [4].

If the soft palate does not perform its functions properly, it can add nasality to the voice. There are tongue-twisters that make the soft palate stronger and help direct the air stream differently. They are based on the sounds [k] or [c], [g] and [ng].

A Glasgow glazier's gloriously gleaming green glass gas-globes [4].

Many people have difficulty pronouncing the [Ө] sound. They often replace the [Ө] sound with an [f].

A thatcher was thatching a thatch,
'Good morning, Thatcher,
The next time you thatch and thatch,
Thatch a thick thatch, Thatcher'[3]

The tongue-twister cited below helps clarify the [f] and [v] consonants.

Violet vainly viewed the vast vacant vista.

When sounds like [ʃ] and [s] occur in close proximity to one another (e.g. *sunshine*), they require tongue flexibility to cope with. These exercises are suitable if you want to train your tongue to master the [tʃ] and [ʃ] sounds easily.

Cheerful children chant cheerful tunes.
A selfish shellfish smelt a stale fish [2].

The [h] sound causes quite a lot of confusion. Many people, who are not native speakers of English, sometimes drop [h] at the beginning of words like 'horse'. These exercises will help you avoid this.

Has Helen heard how Hilda hurried home?[4]

Analyzing the syntactic structure of tongue twisters, we should pay special attention to rhyme, repetition and meter [5]. Meter is the stressed and unstressed pattern of syllables in the lines of a poem. The meter provides the rhythm, or flow, of the tongue twister through each stressed syllable having an unstressed syllable to balance it (which makes one meter). The stresses syllables serve as milestones, reference points to build the utterance on, which make them especially useful for people who stutter. Nearly all tongue twisters are based on repeated words or phrases, which, on the one hand, makes them easier to remember, but on the other – more difficult to pronounce correctly.

There are not many rhymed tongue twisters, although we can name quite a few.

A black cat sat on a mat and ate a fat rat [1].

Whether the weather be cold.
Or whether the weather be hot.
We'll weather the weather,
Whatever the weather,
Whether we like it or not.

I need not your needles, they're needless to me;
For kneading of noodles, t'were needless, you see;
But did my neat knickers but need to be kneed,
I then should have need of your needles indeed [3].

Conclusion Thus, consonance and alliteration as its subtype are the main characteristic features of tongue twisters from the phonetic point of view. Each of them aims at practising one or two sounds, usually, consonants. The syntactic structure of tongue twisters is based on meter and repetition, thus helping make speech more smooth and fluent.

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FEATURES OF THE FORMATION OF COMPONENTS OF INCLUSIVE COMPETENCE OF STUDENTS OF PEDAGOGICAL SPECIALTIES

A. Gulyaeva
VSU named after P.M. Masherov, Vitebsk, Belarus

Currently, with the development of integrative processes and the introduction of inclusion in the educational environment in many countries, including the Republic of Belarus, an important structural component of the future professional competence

of an educator is inclusive competence. Inclusive competence of teachers is considered as an integrative personal education, determining the ability to perform professional functions in the process of inclusive education, taking into account the different educational needs of students and ensuring the inclusion of a child with peculiar psychophysical development in the environment of a general educational institution, creating conditions for his development and self-development [1].

The purpose of the study is to research the inclusive readiness of future teachers.

Material and methods. An organized study of the level of inclusive competence of future teachers was held on the basis of the pedagogical faculty of VSU named after PM Masherov from October to December 2017. To organize the study, a group of full-time and extramural students of 2-4 courses of specialties "Pre-school education", "Primary education", "Musical art, rhythm and choreography" was selected. The total number of persons involved in the study was 60 people. To conduct an experimental study, respondents were offered: - a questionnaire that examines professional readiness and consists of open and closed questions; - express questionnaire "Index of Tolerance"; - methods of diagnosing general communicative tolerance (according to V.V. Boyko).

Findings and their discussion. The analysis of the features of the formation of the theoretical component of the inclusive competence of future teachers has shown its insufficient level and the need to conduct specially organized pedagogical activities for its formation. So, in a task in which it was necessary to give examples confirming that inclusive education implements the ideas of socialization of children with peculiar psychophysical development, only 11.7% of the subjects were able to formulate adequate options. 10% of students rephrased the essence of the concept of "inclusive education". 8.3% of respondents gave examples that do not confirm the implementation of the idea of socialization by inclusive education for children with peculiar psychophysical development, for example: "The state opens special shelters for" special "children, for some time they introduce them into the secondary school", "Care, understanding , Job".

Analysis of the answers to the question about the function of parents raising children with peculiar psychophysical development in the process of implementing inclusive education gave the following results. 5% of the subjects gave the full correct answer. 28.3% of respondents do not fully or indistinctly understand the function of this category of parents in the process of implementing inclusive education, for example: "Help the child adapt to society and support him". 15% of students misunderstand this feature. The following can be attributed to the typical wrong answers: "Parents want to be an example, authority for their children, but they don't know how to be", "To support their children more so that they do not feel separated". 51.7% did not answer this question. As can be seen, a large part of future teachers mixes the functions of

parents in the framework of family education and the role of parents in the field of education of children with psychophysical developmental features; they do not understand the importance of partner interaction of the participants of inclusion.

Identifying the level of professional knowledge of future teachers in the field of inclusive practice included the definition of students' knowledge of the methodological foundations of inclusive education. Thus, respondents needed to establish a correspondence between the methodological foundations of inclusive education and their characteristics, between the types of alternative communication systems and their content; specify the conditions for the formation of an inclusive culture of the educational institution. The analysis of the questions of the closed type questionnaire gave the following results. 16.7% of the subjects demonstrated a low level of professional knowledge, making many mistakes in the answers. A significant proportion of survey participants (75%) showed an average level of professional knowledge, making no more than 2 errors. Only 5% of the subjects revealed a high level of professional knowledge of the methodological foundations of inclusive education. 3.3% of the participants in the experiment could not answer the questions of a closed type questionnaire. When studying the practical component of inclusive competence, the following results were obtained. Analysis of the answers of the subjects to the proposed pedagogical situations demonstrated their willingness to solve real problems that the teacher may encounter in the implementation of inclusive practices. For example, analyzing the situation when a student in a class who has a good progress in conversations, playing with other students constantly draws attention to the awkwardness of a visually impaired classmate, respondents were asked to describe their actions as a teacher. 65% of students chose to talk with a student, with a class, explaining the characteristics of a visually impaired student. 8.3% of the subjects, in addition to conversations and explanations, described the option of involving parents in this situation. 8.3% of future teachers offered to organize joint activities of children, play, common cause, as well as explaining to the class the features of a visually impaired student. 1.7% of respondents will comment on the student and plan to talk with their parents. 3.3% of respondents, besides explanations and conversations, offered options for "immersion" of classmates in the problems of a visually impaired student. 13.3% of the subjects could not offer solutions to this situation.

Studies of the level of tolerance of respondents allowed us to obtain the following results. Only in 5% of the subjects, according to the results of the answers, there is a low level of tolerance, which is characterized by high intolerance. 93.3% of respondents have an average level of tolerance. For future teachers included in this group is characterized by a combination of both tolerant and intolerant features. A high level of tolerance was found only in 1.6% of the subjects, which indicates that they have pronounced traits of a tolerant

personality. 41.2% of respondents have a high level of communicative tolerance. Most of the subjects - 54.8% - showed an average level of communicative tolerance. 4% of all subjects have a low level of communicative tolerance.

Conclusion. Thus, according to the results of the research on the inclusive competence of future teachers, the following conclusions can be drawn:

1. A significant part of the subjects is characterized by a medium and low level of professional knowledge about inclusive education, which indicates the need for advanced training of students of pedagogical specialties in the issues of inclusion and implementation of inclusive practice in the educational space;

2. A significant part of the respondents has a fairly high level of formation of the practical component of inclusive competence, which indicates their readiness to solve practical problems in an inclusive education;

3. The psychological component of inclusive competence, including, in particular, the average level of general tolerance and the average level of general communicative tolerance, is formed at the highest level among students of pedagogical specialties.

Thus, future teachers have a general lack of awareness and readiness to implement their own teaching activities in the context of the inclusive education of children with peculiar psychophysical development. The results of experimental research demonstrate the need to develop and conduct a number of activities to improve the inclusive competence of future teachers.

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FEATURES OF THE LEVEL OF ATTRIBUTIONS AND DIRECTION OF PERSONALITY OF SCHOOLBOYS WITH INTELLECTUAL INSUFFICIENCY

V. Gurskaya
VSU named after P.M. Masherov, Vitebsk, Belarus

One of the current areas of research in special psychology is the problem of the development of the personality of a child with intellectual disability. S.L. Rubinstein, S.Ya. Rubinstein, L.I. Bozovic, V.G. Petrova, L. Vygotsky, L.V. Zankov, L.N. Transverse, A.N. Leontiev, G.A. Weiser, N.I. Gutkina, L.A. Metieva, G.F. Ksenofontov and others. The authors note the peculiarity of the formation of the motivational - need sphere in this category of children. Even E. Segen stressed that a child with intellectual disability, who did not undergo special training and education, "does not know", "cannot" and "does not want." At the

same time, he attached the main importance to the latter, that is, the absence of any aspirations and needs. L. V. Zankov draws attention to the fact that in many individuals with intellectual disabilities curiosity is extremely underdeveloped, little prompting is expressed to implement new types of activity [1].

One of the important characteristics of the personality of a child with intellectual disability is the immaturity of his emotional sphere. Thus, children with intellectual disabilities experience serious difficulties when it comes to expressing an emotional attitude in a verbal form, do not consider it necessary to control their negative emotions, orient themselves directly to the emotional impulse, which also affects the development of the personality orientation [2].

The purpose of the study is to determine the characteristics of the motivational - needful sphere of personality in students of an auxiliary school.

Material and methods. A focused study of the characteristics of the level of claims and the orientation of the personality of schoolchildren with intellectual disabilities was carried out on the basis of GUO "Auxiliary School No. 26 of the city of Vitebsk". The total number of persons involved in the study was 40 people. For the study, we chose the following methods: - orientation questionnaire to determine the orientation of the individual; - a technique of research of level of claims F.Hoppe; - method "Flower - seven-color".

Findings and their discussion. The results of the study showed that in the lower grades 80% of children with intellectual deficiencies are characterized by orientation towards themselves, such as orientation towards direct reward and satisfaction, regardless of work and classmates, aggressiveness in achieving status, tendency to rivalry, irritability, anxiety, introversion. 20% of schoolchildren with intellectual deficiency of this age have a focus on business. In the upper grades, for 60% of students with intellectual disabilities, orientation towards themselves is characteristic, 20% - orientation towards business, 10% - orientation towards communication. Thus, the focus on communication among students with intellectual deficiency appears only to the senior school age.

Processing of the results obtained in the study of the level of claims by the method of F. Hoppe, showed that the majority of younger schoolchildren with intellectual deficiency underestimate the level of claims, and similar results are observed in the upper grades. Thus, it can be said that the level of adequate assessment of results, depending on the situation of "success" or "failure," among students with intellectual disabilities, varies not depending on age, but on the current situation and level of mental development. For example, in the 5th grade, Sasha G. has an underestimated level of claims, but adequately takes into account the results of the assignment. He took only cards that had an easy level of complexity, but he chose tasks on an ascending basis — from 1 to 4, and at the same time he behaved quite confidently, which explains an adequate record of the results. In the 10th grade, Zina K. has an overestimated level of claims and does not take into account the results of assignments, but she also behaves during the study with confidence. Upon presentation of her assignment, she took

the card with the most difficult assignment, and for the rest of the presentation she took assignments of medium difficulty. But she did not take into account the result, and, for example, after task number 7, which she completed, she took task number 1, and after task number 10, she took number 5.

Analysis of the results of the study according to the "Flower - Seven-color" method showed that for younger students with intellectual disabilities the most important are material values (telephone, computer, gifts, bicycles and other attractive things for children), various unattainable desires (to fly into space), focus on well-being and success (when I grow up - to become a builder), momentary desires (for example, I want to walk), and sometimes physiological needs (for example, in food) prevail.

For older schoolchildren with intellectual disabilities, the focus on the future is more characteristic (graduating from school normally, passing exams well), working (becoming a seamstress, starting a business), their desires are more conscious. For example, Ksyusha N. wants to be a seamstress, learn to dance. According to the results of the study, it is clear that with age, the direction of desire changes in children, and they think more about their future. A comparative analysis of the data obtained made it possible to determine that the orientation of the personality of students with intellectual deficiency and the orientation of desires are the same. For example, in elementary school students, orientation toward themselves prevails (80%), which is reflected in the fact that 45.6% of desires are directed towards satisfying material values and well-being and success; for high school students is characterized by a focus on communication and this is manifested in the desire to be prosperous, successful, to communicate with friends.

You can compare the orientation of the individual and the content of the desire of children with intellectual disability. Making a conclusion on the results, it should be said that the orientation of the students' personality and the orientation of desires coincide. This can be said of the following indicators: among students in grades 4-5, self-directedness prevails (80%), which is reflected in the fact that 45.6% of desires are directed towards satisfying material values and well-being and success; students in grade 10 are characterized by a focus on communication, and this is manifested in the desire to be prosperous, successful, to communicate with friends. Also, drawing parallels with the control group of senior preschoolers, it should be noted that the prevalence of focus on the case (50%), unlike children with intellectual disabilities, correlate well with their desires for caring for someone, performing unrealistic fictional actions.

Conclusion. Thus, the orientation of the personality of students with intellectual disabilities depends on the age of the students, as well as on their level of mental development. The level of claims of primary and high school students is the same and only small differences are observed when considering the choice of tasks in terms of complexity. It should be noted that the orientation of the person depends on the level of claims, because the level of claims determines the choice of the activity of a student with intellectual disabilities,

his focus on communicating with people, the fulfillment of assigned tasks and contributes to the achievement of a certain social status. In this case, the desires of the students, which are closely related to the change in orientation, also have a great influence. With age, children with intellectual disabilities become more focused on the future, on achievements.

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THE INFLUENCE OF FAIRY-TALES ON THE DEVELOPMENT OF PRE-SCHOOL CHILDREN'S METAPHORICAL SPEECH

A. Durankova
Orsha College named after P.M. Masherov, Orsha, Belarus

Saturation and richness of metaphors in makes our speech figurative, eloquent, expressive and meaningful. Brevity, pithiness, informative content, emotionality, allegory is the clearest features of metaphorical figurative speech. Specifically, such kind of speech affects (influence) not only perception, but feelings and imagination of the listener, who perceives the speech.

Metaphorical figurative speech is used in different genres of literature and folklore. The researchers (T. Efremova, D. Ushakov, T. Dobzhinskaya, K. Chomenko point out that a child can understand metaphorical expressions easier when they're inserted in the context of fairy-tales. It's a vivid example of replacement of one object into another. The usage of such kind of transformation creates a reality full of fantasy and imagination [1, p.39]. Fairy-tales provide children with a favourable environment for arising aesthetic attitude to the objects that are depicted in them. And the changing of children's general attitude to the object determines the character of an intellectual activity and its performance [2, p.66]. By presenting a fairy-tale to pre-school children we show them all the richness of the language, develop their sensitivity to the means of artistic expressiveness, teach them how to use this means in their speech. While perceiving the process of figurative expressions in the text of a fairy-tale, a child begins not only to understand it in the right way, but also uses it in his speech. It's very important when children compose fairy-tales (using a plot, a variety of pictures and key words) and try to retell these them creatively. Respectively, in practice of working with pre-school children a teacher should rely on effective

methodical system, which allows cultivating sensitivity to figurative words easily without any "pressure".

Our aim is to reveal the most effective methods and ways of working, which are focused on the development of a metaphorical speech of a child.

Material and methods. In the course of experimental work, we observed speech practice among the children of two senior groups (KEE 15, 16, Orsha), besides, 8 teachers whose experience varies from 8 to 23 years, 19 students of the speciality "pre-school education" and 7 parents were engaged in this process. In our research, we relied on complementary methods such as observation of the children's speech, analysis of their classes, questioning, intercommunication with teachers, parents, trainee students, theoretical analysis of scientific and pedagogical literature, ranging. It was revealed that the development of figurative speech of pre-school children is a problem of current importance, which demands further working out.

Findings and their discussion. A large number of different researchers (V.T. Kudryavzeva, L.M. Gurovich, L.B. Beregovaya, T.B. Flichyova, E.O. Opanina) emphasize that fairy-tales are extremely rich in the means of artistic expressiveness: phraseological units, extended allegory, personifications, which are considered to be extended metaphors. That's why the importance of a fairy-tale lies not only in the development of an artistic imagination of children, but also in the way of figurative thinking which is based on associations.

According to the opinion of V.T. Kudryavzeva, figurative thinking is expressed in ability to bridge the gap between the distant related objects, symbols and definitions; an ability to connect several incompatible parts into the whole unit; an ability to connect definitions and then form absolutely new ideas and views [2].

We can't but agree that a significant feature of imagination is an ability to see something as a whole earlier than see some parts of the unit. Teachers start to notice this fact at pre-school age. The main requirements for this feature are game activity (it was confirmed by 100% of the surveyed), artistic creativity (81%), active process of a child's exploration the world of fairy-tales (94% of the interviewed), but however, only 64,2% of trainee students have proved this fact.

On the basis of the research we make the following conclusion: the complex of different kind of methods (the method of receptivity and information, reproductive method and the method of a partial search) contribute to the success of the development of children's figurative speech. Rational combination of these methods in process of teaching allows achieving great results in enrichment of children's speech and preparing them to such discipline as "Literature".

The method of receptivity and information. The aim is:

– to explain unknown definitions: «внучка воду брала из колоды» (колода – короткое толстое бревно; о толстом неповоротливом человеке; бревно с выдолбленной серединой).

– to use talks on the plot of a fairy-tale with the help of questions: что бы было, если бы Воробей щи варил, а Блин дрова колол? (Сказка "Крылатый, мохнатый, да масленый").

The reproductive method. The aim is:

– to select words which describe the characters of a fairy-tale: Воробей – прыткий, шустрый, веселый, трудолюбивый;

– to find unusual words: "ведра сами в гору пошли", "дрова сами в избу идут и в печь лезут";

– to find polysomic words and homonyms: "взяла старуха крылышко, по коробу поскребла", "натяните вверх свои тугие луки";

– to find personifications, metaphors and see how children understand them: "ветки с яблочками все высоко-высоко поднялись", "земля дрожит", "блин со сковороды убежал";

– to find phraseological units, proverbs and sayings according to the given plot and idea: "у страха глаза велики", "как сыр в масле", "утро вечера мудренее", "терпение и труд все перетрут".

The method of a partial search. The goal of the method of a partial search is to give children the opportunity to create metaphors about the characters in a fairy-tale: "хлебушек-вкусняшек", "старичок-добрячок";

Allow children to compose fairy-tale using phraseological units: "душа в пятки ушла", "отложила на черный день";

In monitoring classes, we revealed that pre-school teachers give preference to such task as selection of describing words, interpretations of proverbs and sayings, explanation of unknown meanings or definitions (64%), 10% of the teachers use as a foundation any phraseological units, they make up a story, share it with children and then, ask to find unusual words or expressions. Almost all teachers use dramatization where children improve their fairy-tale language skills, unite words with actions and main characters. The effectiveness has been confirmed by both teachers and workers of KEE (100%).

Conclusion. It's obvious that's a fairy-tale act as an effective form of folk and literature art and it's suitable for children of any age. Fairy-tale with its live and colourful language is a favourable foundation for the development of figurative speech of pre-school pupils. The main methods that are used in teaching process (the method of receptivity and information, reproductive method, the method of a partial search), which are focused on perception, understanding of the usage of figurative words and expressions, composing metaphors in speech practice. Our methods and ways in teaching process with pre-school children contribute to developing their metaphorical speech.

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CHILDHOOD PEDAGOGY IN MODERN CONTEXT: PROBLEMS AND PROSPECTS

Li Lun
BSU, Minsk, Belarus

Steady increase of child disability has persisted in the modern world. At the same time, moving along the path of democratization of public life inevitably leads us to the need to organize the full inclusion of children with disabilities in all spheres of life. That is why the need has arisen to introduce such a form of education that will create optimal learning conditions for children with disabilities - inclusive education.

This work is devoted to the problems of education of children with special needs in the context of the global development of inclusive education.

The main issue of modern pedagogy in the field of education of special children is the way to get education.

Inclusive education is training and education, in the process of which the special educational needs of all students, including those with psychophysical developmental characteristics, are met in the institutions of basic and supplementary education when they create appropriate conditions and fully integrate all students into the joint educational process.

The purpose of the research is to study the problems and prospects for the development of inclusive education.

Material and methods. Research materials: regulatory legal acts of the Republic of Belarus, materials of periodicals, thematic conferences devoted to the problems of teaching children with limited health opportunities

The relevance of the study is due to modern humanistic processes in society, based on the need to include people with disabilities in all spheres of society.

Methods used in the work: theoretical analysis and synthesis, induction and deduction, thought experiment, structural-functional and structural-logical analysis, economic-statistical methods.

Findings and their discussion. An important feature of raising a child with developmental and behavioural abnormalities is optimism, confidence in overcoming difficulties. To overcome these difficulties, timely implementation of diagnostic, preventive and correctional and pedagogical work is necessary to promote the effective development and formation of the personality of this category of children and adolescents in the conditions of functioning of a

comprehensive school [9, p. 45].

A modern understanding of inclusive education is that all children should be taught together in all cases where this is possible, despite any difficulties or differences existing between them.

In the developed countries in Europe, care for children with special educational needs begins at the pre-school age. The content of the program is adapted in such a way as to maximize the development of the child, taking into account its needs and capabilities

In accordance with the existing democratic and humanistic trends in the world, currently in developed countries all children with special educational needs and opportunities are covered by education and upbringing. In this case, there are three main models of inclusive education:

- "one way" model - integration of all children within the framework of a mass school;

- the model of "two ways" - the presence of two independent education systems, which exist on the basis of special laws, mandatory for mass and special education;

- the model of "many ways" - there are many concepts that combine elements of mass and special education.[10, p.99]

The integration of children with special needs into regular classes of maternal schools has, in addition to indisputable advantages, some risks, therefore the Framework Program has a special section on the work of a preschool teacher, in a class of which there are children with special educational needs. He has to assess whether he will be able to perform this work - this applies to material, psychosocial, personal, professional and other conditions. If a pre-school teacher takes care of a child with disabilities, being not competent in this area (does not have a special education), he should cooperate with the appropriate specialists - a special teacher, a child psychologist, a doctor. [10, p. 102]

There are nearly 1.7 million disabled children under seven in China. The government decided, the compulsory education enrolment rate for children and adolescents with disabilities has reached more than 95 %, achieving full popularization by 2020. It will be set up a system, so that all disabled children will have access to basic rehabilitation services by 2025. China will implement a national assistance system for the rehabilitation of disabled children from poor families, covering their treatment expenses [14, p.119]. Although in the context of an inclusive educational approach in China, a series of events are already being held, legislative acts are being adopted that regulate this sphere in one way or another, but there is still a long way to go. Inclusive educational practice in China is rather limited, largely experimental and unstable.

About 31 thousand children with disabilities live in the Republic of Belarus. More than half of children with special needs are still enrolled in special boarding schools. The Concept of the development of inclusive

education (students with psychophysical features) in the Republic of Belarus has been adopted at 2015, which is a system of views on the principles, priorities, goals and objectives, mechanisms for the development of inclusive education. The implementation period of the Concept is 2015–2020.[15, p.4]

However, the implementation of inclusive education in practice in different countries, especially in developing countries, faces a number of problems: the difficulties of traditional perception of disability, the lack of a sufficient number of teachers with the necessary level of training, the lack of necessary methodological material for teaching children with special opportunities and a lack of funding to solve some issues of inclusive education.

Conclusion. Considering the above we can say, that social and pedagogical support for children with special needs in the world is implemented at three levels in a practical context:

- the formation of state policy in the field of legislative and regulatory framework;

- the creation of regional models and systems of social and pedagogical support, relevant programs and projects;

- realization of mentioned above on a personal level.

However, the implementation of inclusive education in practice in different countries faces a number of problems:

- the difficulties of traditional perception of disability;

- the lack of a sufficient number of teachers with the necessary level of training;

- the lack of necessary methodological material for teaching children with special opportunities;

- lack of funding to solve some issues of inclusive education.

Therefore, further research in this area should be carried out in order to develop general recommendations for the implementation of inclusive education, to create an algorithm to work on the full inclusion of "special" students in the life of the school and to transform the school in accordance with the ideas of inclusive education.

Children are the future of the world. Every child should receive care and education. No matter what kind of the reason is, it should not be excluded.

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FORMING INCLUSIVE READINESS OF PARENTS
AS PARTICIPANTS OF THE INCLUSIVE EDUCATIONAL PROCESS

Y. Morozova
VSU named after P.M. Masherov, Vitebsk, Belarus

Inclusive education is currently an innovative process that allows for the education, upbringing and development of all children, without exception, regardless of their individual characteristics, educational achievements, mother tongue, culture, mental and physical abilities. The basis of inclusive education is an ideology that excludes any discrimination against children and ensures equal treatment of all people, but creates special conditions for children with special

educational needs. The task of the modern education system is the formation of a special educational space of an inclusive culture, which implies accepting the values of diversity and respect for differences, encouraging cooperation and attention to the achievements of each student, regardless of their development or social status [1].

One of the conditions for the successful implementation of inclusive practice is the interaction of parents of students with peculiar psychophysical development with the teaching staff of an educational institution in determining the content of psychological and pedagogical support for participants of inclusion [2].

The purpose of the study is to determine the characteristics of the formation of the partnership position of parents of students with peculiar psychophysical development as participants in an inclusive educational process.

Material and methods. A targeted study was conducted from September 2017 to April 2018 on the basis of the State Educational Institution "Secondary School No. 46 of the City of Vitebsk". The total number of persons involved in the study was 20 parents raising children with peculiar psychophysical development, who study in classes of inclusive education. Each of the subjects performed the same set of tasks under similar conditions, namely, alone with the experimenter, in complete silence, this allowed for an objective assessment of the results.

The methodology of experimental study included a survey of parents - participants in an inclusive educational process. In the questionnaire, parents were asked to answer open and closed questions and complete a number of proposals.

Findings and their discussion. The quantitative and qualitative analysis of the obtained results allowed us to draw the following conclusions. When answering the question about the need for cooperation between the school and parents in matters of teaching and raising children, 100% of the respondents gave a positive answer, which indicates the need for such cooperation and the interest of parents in it. Despite the fact that parents whose children are enrolled in inclusive classes took part in the survey, the very definition of "inclusive education" caused certain difficulties. Thus, only 40% of respondents identified inclusive education as the joint education of children with peculiar psychophysical development and children with the norm. 30% of parents consider inclusive education as the implementation of an individual approach to students, another 30% of respondents described inclusive education as an aid to students, they could not more accurately specify the answers.

100% of respondents did not distinguish between inclusive education and traditional education, which indicates a confusion of these concepts in this category of parents and insufficiently formed inclusive thinking. Thus, it should be emphasized that even parents, who are directly involved in the inclusive educational process, do not have a complete understanding of its essence, which is one of the obstacles to their high-quality participation in the group of

psychological and pedagogical support of a student with peculiar psychophysical development.

Having a certain experience in the inclusive education of their own children, parents note the following positive aspects of co-education of students with peculiar psychophysical development and their normally developing peers. When answering the corresponding questionnaire questionnaire, the following options were highlighted:

• 40% of parents of students with peculiar psychophysical development noted an improvement in their academic performance;

• 40% of respondents indicated an improvement in the adaptation of a child with peculiar psychophysical development in society;

• 10% of the subjects emphasized the possibility of implementing an individual approach to children with peculiar psychophysical development;

• 10% - parents could not formulate an answer to this question.

Analysis of answers to the question about the psychological and pedagogical support of children with peculiar psychophysical development showed that 20% of the respondents are not familiar with the concept of "group of psychological and pedagogical support". 70% of parents are not members of the psychological and pedagogical support group for the child. Only 10% of parents of students with peculiar psychophysical development answered that they are members of such a group. A rather high potential activity in the interaction of participants in inclusive practice is evidenced by the fact that 80% of respondents would like to be members of the group of psychological and pedagogical support for their child, 20% of respondents indicated that they do not need the organization of a group of psychological and pedagogical support for a child It is connected both with their personal lack of readiness to carry out this activity and low awareness of the nature of the work of groups of psychological and pedagogical support for the rebbe. nka in the conditions of inclusive educational space. Therefore, there is an objective need for both informing parents raising children with peculiar psychophysical development about psychological and pedagogical support, and activating educational institutions to include parents of this category in the work of groups of psychological and pedagogical support, including their preliminary preparation for this activity. .

When determining the role of parents as a member of the group of psychological and pedagogical support of a child with psychophysical features, 40% of respondents believe that the role of parents is the main, leading, 30% of parents did not understand the question, 30% found it difficult to formulate an answer. The data obtained allow us to conclude that the parents, who are participants in the inclusive educational process, are not sufficiently informed about the psychological and pedagogical support of children with peculiar psychophysical development, and that their inclusive thinking is unformed.

Conclusion. Thus, the organization of psychological and pedagogical support for parents of students with peculiar psychophysical development requires consideration of a number of identified features of their inclusive readiness:

- Insufficient information literacy of parents in understanding the essence of inclusive education;
- Low level of development of the partner position of parents as participants in an inclusive educational process;
- Insufficient level of development of inclusive thinking;
- Focus on individual forms of interaction with teachers;
- Low awareness of parents about the possibility of participation in the group of psychological and pedagogical support for their child, lack of knowledge about the purpose of creating such a group and its functions.

Taking into account the identified features in the organization of psychological and pedagogical support for parents of students with peculiar psychophysical development will contribute to improving the quality of this activity.

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THE COMPLEX OF EXERCISES
FOR DEVELOPING JUNIORS' MEMORY AT MATHS

I. Pavliuchenkova
Orsha College named after P.M. Masherov, Orsha, Belarus

The representatives of pedagogical science and practicing teachers point out that many juniors have difficulties with not only assimilation of the curriculum, but also keeping, reproducing and using it within a considerable period of time when they are doing sums, tasks or organizing calculation.

The development of memory is considered to be a problem of current importance in both school practice and pedagogical science as pupils' memory determines success in mastering the educational material.

The representatives of different fields of knowledge (K. Levin, P. Janet, H. Ebbinghaus, I. Pavlov, I. Sechenov, L. Vygotsky, K. Ushinsky and the others) were interested in the question of the development of memory long ago. Up-to-date researchers L. Cheremoshkina, O. Naumenko, E. Shershitskaya,

A. Rybinskaya claim that memory is a basis of human consciousness, intelligence, self-awareness [1].

That is why a teacher should take notice of creating special conditions at a lesson to develop visual, auditory, associative, figurative, verbal logical emotional memory in order to memorize the material thoroughly but not use didactic materials of the book.

It is essential to help juniors understand that the quality of knowledge and length preservation in the memory depend on the way pupils read, assimilate and remember the material. Memory needs developing and forming persistently to make it easier to study the subject.

The aim of the article is to select a complex of exercise for pupils to develop various kinds of memory and teach junior pupils techniques of rational memorization and reproduction of mathematical information.

Material and methods. 5 teachers of primary school, pupils of the second (27) and the third (21) classes of SEE "Orsha Secondary School №21" (48 people) participated in our research. It is based on observation, comparative analysis of lessons of maths, analysis of pupils' exercise books, elucidating the problem in scientific pedagogical literature, discussion with teachers whose experience varies from 8 to 19 years. The methods of A. R. Lauriy "Memorization of 10 words".

Findings and their discussion. The Russian scientist L. Cheremoshkina points out that a junior schoolchild has a number of psychological properties, which are connected with memorization, reproduction of the information and the duration of formation of mathematical skills [2, p.26]. We see that nowadays not all pupils manage to use their memory and when they learn something, they are not able to check up themselves, to figure out what they have already learnt and what have not. For instance, the number of such children in the second form made up 14,8% (4 pupils from 27).

As we have noticed the development of children's memory slows down without purposeful teacher's work and a systematic organized repetition of educational materials and, of course, influences the speed of formation of mathematical skills. Pupils come across the considerable number of new concepts, memorization of new words, definitions, formulas, rules and analyses of different schemes. For example, the 3rd class pupils must understand and remember *"variable"*, *"alphabetic expressions"*, Latin letters names *a, b, c*, *"meaning of expression"* on the topic *"alphabetic expressions"* [3, p.52].

We recommend using the following exercises at the lesson of maths.

1) *"Find a pair":* a pupil finds a suitable word *(square – quadrate, numeral – number, plus – sum, division – …, number – …, quadrate – …, sum – …).*

2) *"Who is more":* a pupil says a word on the topic *"mathematics"*, the next one repeats the preceding word and gives his own; the pupil who gives more words wins.

3) *"Find a common letter":* pupils should find the common letter from a number of words in a line:

– *cub, rib, rhombus;*

– *side, height, addition, positive sign*

– *expression, center, unit, division.*

The most interesting fact is that the tasks of these types were regarded as the most interesting for the pupils of the 3rd class (85,7%).

4) Children have no less interest while doing the following task: a pupil is given *5 seconds* to look at the figures, remember their position, and draw them himself.
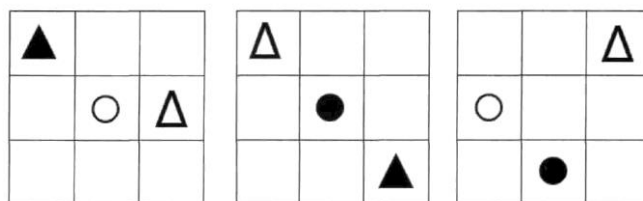
5) The next exercises will be suitable for children with linguistic mindset. There are 2 variants of the task. A teacher pronounces numbers: *1, 3, 5, 7;* quantity: *length, weight, time, volume.* Pupils should repeat the words beginning with the letter *V, T.*

It should be noted that various techniques can be used to improve memory. We referred to O. Naumenko, E. Shershitskaya's classification: the techniques of grouping educational materials, classifications, associations (which are popular among teachers – 80% interviewed), the techniques of searching the supporting point, the techniques of correspondence, schematization, building out, structuring the material.

The previous techniques are effective if they are regularly included in the structure of the lesson. In such way, 2nd class pupils worked with pleasure *"In a Roman room"*: memorized units of information are put down in established order in the class. The vast majority of pupils (81,5%) named the technique as a most useful, children's interest confirmed that.

2nd and 3rd years pupils extracted the technique *"Ask a wise question"* (70,8% – 34 interviewed), which is expedient at the stage of knowledge correction, conclusion, generalizing lessons. Pupils learn not only to form a question, but to use concepts, formulas and definitions. However, teachers should be conscious that the shown techniques will be effective if they are used regularly.

Conclusion. On the basis of our research we make a conclusion. To make good conditions for juniors' active mental work we should create a good atmosphere in class. To develop long-lasting memory and form mathematical skills we should include some tasks for improving different kinds of memory, use special techniques for teaching memorizing information and revise this information systematically.

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DEVELOPMENT OF VISIBLE FORMS OF THINKING PUPILS WITH INTELLECTUAL INSUFFICIENCY IN PLAYING ACTIVITIES

A. Sorokina
VSU named after P.M. Masherov, Vitebsk, Belarus

In ontogenesis, the game passes the definition of the stage of its development, each of which prepares the next one and contains the prerequisites of a new level of activity. The stages of the formation and development of the game of children with intellectual disabilities in the process of organized learning, in our opinion, should take into account the phases of its emergence during normal development. In this regard, the sequence of stages should take into account both the stadial development of the game in ontogenesis, and features of the development of preschool children with intellectual disabilities, their ability to learn and educate, the current level and zone of proximal development [1], [2]. The analysis of psychological and pedagogical literature on the research topic showed the possibility of using game activity as a means of developing visual forms of thinking of preschool children with intellectual disabilities.

The purpose of the article - the study of the characteristics of the formation of visual forms of thinking of preschool children with intellectual deficiency in the process of playing activity.

Material and methods. The formative experiment was conducted from October 2017 to May 2018 on the basis of the GUO "Special Kindergarten No. 1 of Vitebsk", the experimental group consisted of 10 preschool children with intellectual disabilities between the ages of 5 and 8 years. We have developed a training program for the game, the content of which was determined in three stages and took into account the different possibilities of children. The training program at the first stage was aimed at creating the prerequisites for the game and therefore, this stage, on the one hand, is the starting point for all children, on the other hand, it was focused on the capabilities of children, whose play is on the level of subject-game actions. Group classes were held in the play corner. Children were invited to classes every day in strictly the allotted time. Each

game story children studied for about a month. In the classroom, children were introduced to the functional purpose of toys, taught by subject and game action, formed the ability to perform a chain of game actions in a certain logical sequence, and finally formed - mapping game.

Findings and their discussion. All preschoolers with intellectual disabilities agreed to the offer to go play in a play corner. But only two girls at the sight of toys had a desire to take them in hand. Other children indifferently considered the environment. Of the specified number of subjects, only 35.6% of the game actions were performed. In addition, a small number of non-plot actions were performed. Two thirds of the children began their actions by loading the building material into the back of the car. But their possibilities to continue their actions in a given sequence and complete them were different. Only two children were able to continue them until the plot was completed. A third of the subjects began their actions immediately with the construction of a table and chairs for the doll. But their actions were limited to this. None of the children could not independently reproduce the entire sequence of actions of the plot from the beginning to the end. Only 13.3% of preschool children with intellectual impairment in the presence of stimulation from the adult and incomplete repetition of actions were able to reflect the logic of the plot. Most of the children reproduced the game plot fragmentary, which confirms the analysis of the results obtained. Not all preschoolers with intellectual impairment in the process of committing game actions enjoyed speech.

Only 40.0% of the subjects reported speech. Speech statements of a number of preschool children with intellectual inadequacy reflected the situation in which the subjects were located. Mainly used speech was of a stating character. The children called perfect actions and toys that they took in their hands. In two subjects, the speech was directly addressed to the doll. They showed their positive attitude towards her. Analysis of the dynamics of the formation of plot-game actions in the process of teaching preschoolers with intellectual deficiency to the second plot showed that it was easiest for children to navigate when performing actions of the first plot with which they were already familiar, the number of actions increased from 35.6% to 63.3% .

Of the 150 game actions of the second plot, children reproduced 65.3% of the actions. Most of the children had a tendency to preserve in their actions a given game sequence. Only one child independently reproduced the entire chain of play actions, while 13.3% of children needed verbal stimulation from the experimenter, leading them to complete the plot.

Thus, when comparing the results of learning game actions in two subjects, the dynamics of the formation of game actions were observed. The interest of children in plot actions gradually grew from indifferent viewing of unfamiliar toys in the situation of the first plot to the desire to act with them by the time of the subsequent learning of the second plot. The children demonstrated the confidence of the actions, which was due to the assimilation of the functional purpose of the toys provided for playing up.

Quantitative and qualitative analysis of the results allowed us to distinguish 3 groups of preschool children with intellectual disabilities following a formative experiment:

High level (50% of subjects) - children who completed the tasks at the visual-figurative level (by the method of visual correlation) were assigned to this level. Despite some differences between them, most of these children showed a special relationship to experimental problems, which can be described as readiness to solve cognitive tasks.

The average level (29% of subjects) - the performance of tasks at a visual-effective level (by trial and error); The subjects referred to this level from the very beginning of the experience did not show readiness to solve cognitive tasks. For some children, the tasks caused increased motor and speech activity of a playful character. The orientation stage was practically absent in children of this subgroup.

Low level (21%) - the inability to complete the task, a significant underdevelopment of even visually - effective thinking. Preschoolers of this group did not solve diagnostic problems even with the use of all the provided types of assistance, and sometimes refused to solve them at all. For these subjects, the characteristic was the lack of cognitive interest in the presented tasks, the gross underdevelopment of analytical-synthetic activity, the activity and dynamic side of thinking.

Conclusion. The results of the repeated stating experiment prove that specially organized play activity can be a means of developing visual forms of thinking of preschoolers with intellectual disabilities: the ability to perform non-verbal tasks at the visual-figurative level increased from 34% to 50%, at the visual-effective level - from 13% to 29%. Thus, the assumption that visual forms of thinking of preschool children with intellectual deficiency is characterized by a number of specific features that can be adjusted with the help of specially selected didactic games included in the educational work of a correctional preschool educational institution if the following conditions are met:

1. Creation of a specially selected system of exercise games with didactic content;

2. Purposeful development of visual thinking should be carried out throughout the preschool period;

3. Joint activities of a defectologist, educator, music worker, head of physical culture, parents should be directed to the development of visual-figurative thinking;

4. Games aimed at the formation of visual-figurative thinking should be diverse;

5. The game play system should be included in all types of children's activities.

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FEATURES OF FORMING ENVIRONMENTAL KNOWLEDGE IN YOUNGER SCHOOLBOYS OF AUXILIARY SCHOOLS

A. Timofeenko
VSU named after P.M. Masherov, Vitebsk, Belarus

Ecological education includes: - education of a humane attitude to nature (moral education); - development of aesthetic feelings (the ability to see and feel the beauty of nature, to admire it, the desire to preserve it); - the participation of children in the feasible for them of activities for the care of plants and animals, for the protection and conservation of nature.

All components of such an integrated approach to environmental education in the conditions of an educational institution do not exist in isolation, but are interconnected. Thus, a humane attitude to nature arises in the process of realizing that the world around us is unique, unique, needs our care, and is consolidated in the process of practical activities for the care of indoor plants, inhabitants of a living corner, etc.

Ecological education, sincere love for nature means not only a certain state of mind, the perception of its beauty, but also its understanding and cognition. The most important condition for the successful implementation of an integrated approach is the creation of an environment in which adults, by personal example, demonstrate to children the right attitude to nature and actively, to the best of their abilities, participate with children in environmental protection activities [1]. For the formation of environmental knowledge and perceptions in children with impaired development of a single-school education is not enough. Such education should take place also in the framework of extracurricular activities.

The purpose of our study: to identify the characteristics of the formation of ecological knowledge among younger students with intellectual deficiency.

Material and methods. The study was conducted in September 2017 - February 2018 on the basis of GUO "Auxiliary School No. 26 of the city of Vitebsk". In the experimental study was attended by 20 younger students of the 1st branch of the auxiliary school. Each subject was individually offered a diagnostic conversation consisting of 17 open and closed questions. The diagnostic conversation included the following sections:

1) knowledge and ideas about plants;
2) knowledge and ideas about animals;
3) knowledge and understanding of mushrooms;
4) knowledge and understanding of nature conservation.

Findings and their discussion. The qualitative analysis of the obtained results showed that in the section "Knowledge and ideas about plants" the greatest difficulty was raised by the question of recognizing plants by drawing. Not all plants, children were able to learn and remember their names (no student

fully coped with this task). When children respond, there are features of verdict. For example, Nastya B. cannot correctly name the proposed flower chamomile and voices it as "talk". Other children cannot recognize all the plants in the picture and name them, and if they do, they do not know the name of the plant and describe its external features. For example, as Vitaly L. describes a poisonous plant with a crow's eye: "poisonous chicken tree, berries grow poisonous from the earth, poisonous eyes, tulips ...". It is difficult for children to build a sentence and correctly name the proposed subject. It is easier for children to be given tasks of a closed type, when from the suggested answers you need to choose the right one. So with the task of identifying knowledge about "which plants eat leaves," the correct answer was chosen by the largest number of students, which accounted for 45% of the total number of respondents. And yet the difficulties caused the question of the knowledge of the trees that grow in Belarus. Immediately, five students approved that cacti and palm trees grow in our region. For example, Kirill S. explained that he grows cacti in his country house and at home (which one cannot but agree with), Sasha S. affirmed that palm trees grow in our country, since he saw her (although he did not specify where: in the botanical garden or on TV). Maxim A. clarified the situation a bit, saying that he saw cacti on the windowsill, and a palm tree on TV. Also, the questions in which you need to explain your choice are particularly difficult. For example, children know medicinal plants, but most find it difficult to explain why medicinal plants are called "medicinal" and why they should be protected.

The section "Knowledge and ideas about animals" was the most difficult. Only 4.2% of the students coped with the proposed tasks. Only 10% could recognize the animals shown in the picture, and only one child was able to correctly name the migratory birds. As it turned out, younger students with intellectual inadequacy have a poorly formed idea of what animals live in our country. So, for example, Elena K., Evgeny J. and Sasha S., together with representatives of animals of our country, also call an animal that does not live in our latitudes - a giraffe. Nastya B. also claims that an animal like an elephant can be found in Belarusian forests. This suggests that children, choosing the answer, call everything that they know and do not classify animals by habitat. Another challenge turned out to be the task, where it was proposed to determine what the hedgehog eats. Not a single student managed to fully cope with this building - 0%. Students with intellectual disabilities cannot separate the mode of action of fairy-tale characters and real animals, which indicates an insufficiently formed understanding of animal nutrition. Each student responded with an option - apples, mushrooms. Undoubtedly, the complexity of the students caused the task in which the enumeration of products needed to choose an animal from the list that feeds on all these products. Only 10% managed and were able to explain their choice. It is difficult for younger students with intellectual disabilities

to summarize all the possible options and on the basis of this to make a conclusion. It was noticed that children, choosing the right object, cannot establish the cause: they call external signs or what they know about this subject, they single out the correct word, but they cannot name a generalizing word. For example, in the task to find an extra animal and explain your choice by choosing the correct answer, Vitaly L., Sasha S. and Maxim T. do not indicate the reason for the fact that this is a bird, and the rest are animals, but the essential signs - migratory bird ",“ can fly away ”or in the case of Nastya B. - by size -“ small goose ”, Ilya K. indicates that“ the bear is wild and all the others are domestic ”. This section also traces the peculiarities of pupils' knowledge overestimation. When answering, use incomplete sentences, make them up with errors. For example, to the question "Whose is this menu (food)?" Elena K. replies: “Bull? I do not know such an animal anymore ”; and Nastya B. says: “Fish is a bear, squirrel is nuts. Bunny. " Also, children incorrectly call animals. For example, Nastya B. of the wild boar calls “rabid rabbit”, swan “duck”, and woodpecker “knock-knock and little hole!”

In the section “Knowledge and ideas about hornbeam” the task for the subjects turned out to be the most difficult to determine in which places in the forest there are mushrooms, and to choose the right one from the suggested options. Only 15% of students managed to cope with this task. Identification of poisonous mushrooms also caused difficulty. In most cases, children recognize a poisonous mushroom among edible ones, but they cannot remember what it is called, confuse the name, or describe its outward signs. For example, Nastya B. describes the toadstool, "little white ..."; Alexander P. showing russula, said that it is a pale grebe. The difficulty is the explanation why poisonous mushrooms are so called. For example, Vitaly L. explains that “there are round such ones on the toadstool ... they are poisonous,” Ksenia L. says that “the stomach gets sick”. As you can see, the children use simple, incomplete sentences within the meaning of answers and cannot build the correct logical chain. For example, to the question: “If you have found an unknown mushroom in the forest, what will you do?” Elena K. replies - “I will take it and will not take it, or I will take a book and learn what you can take, what not. Because when he is poisonous, he is of that poisonous color. ”

In the section “Knowledge and Concepts of Nature Protection”, the knowledge of children is formed to a greater degree. 46.25% students with intellectual disabilities managed to cope with the proposed tasks. The greatest difficulty was caused by the task “How can you help adults in order to preserve nature?”, Which only 15% of students coped with. Most misunderstood the meaning of the assignment and began to tell how they help parents at home, and not what they personally could have done in the forest, in nature, near the house for trees, animals and birds. The difficulty was also related to the explanations why it is necessary to help adults take care of nature. The subjects formed ideas about the rules of behavior in the forest for a walk. Most replied that it was

impossible "to shout, run hard, make fires, where you can't do that, litter" (Elena K., Alexander P., Ilya K., Vitaly L., Maxim M., Misha M., Sasha S., Kirill T.). Also, children are well aware of the topic of how he will act if he sees an outstanding cigarette. But it is important to note the many errors in the speech of children. For example, Nastya B. referring to the word "stump" describes him as "a little bit - a big hole," and speaking of a bear's den, describes it as "a big hole and a bear gee-gee", Alexander P. says that it is impossible " sing fires and scatter anything in the forest. " The children's answers are based on the situations in which they were. For example, Vitaly V., answering the question: "How should you behave in the forest?" Says that you need "not to shout, or else the wolf will eat, not to indulge ... you cannot knock at home, you cannot burn the car, then put it in the corner ", Anton A. to the same question says that" you can get into the pit and it will be painful. " The life perceptions of children about work and life are fairly well formed. For example, Vitaly L. notes that adults can be helped to dig up the ground, plant flowers, water, plant potatoes, and Ilya K. is ready to help mom water the trees, bring out the dog, help at home. Kirill T. is ready to water the flowers on the window and listen to her parents, and Ksenia L. knows how to wash dishes.

Conclusion. Thus, although this environmental knowledge was formed in children on the basis of local history and in accordance with the program, but as it turned out, this is not enough. The knowledge and ideas of younger schoolchildren with intellectual inadequacy about nature conservation (46.25%) are most developed, and less developed under the section "Knowledge and ideas about animals" (4.2%). According to the sections "Knowledge and ideas about plants" and "Knowledge and ideas about mushrooms" the knowledge of children is approximately at the same level (25% and 28.3%, respectively). Therefore, it is required to organize additional extracurricular activities on the formation of this knowledge.

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THEORETICAL AND APPLIED ASPECTS
OF PHYSICAL CULTURE, SPORT AND TOURISM

RELATION OF SUSTAINABLE AND LABILE INDICATORS OF BODY COMPOSITION SPORTSMEN HIGH QUALIFICATIONS CYCLIC SPECIES SPORT

M. Altani
VSU named after P.M. Masherov, Vitebsk, Belarus

Morphological features of athletes are manifested as in stable (total) signs, among which is the length and body weight, and in changeable (labile), for example, the girths of various parts of the body, due to the ratio fat free mass (FFM) and fat mass (FM) [1]. It has been established that labile indicators can serve as markers in monitoring the adaptation response of the organism to high physical activity, requiring changes in the management of enzymatic processes of energy and plastic metabolism [1]. Previously, the authors found that in the group of male athletes candidates for the master of sports of cyclic and speed-power sports, the correlation coefficient (0.42) between BMI and LM was not statistically significant [2]. It is of interest to determine how the total and labile indicators of body composition in this group correlate with each other.

The aim of the study: the establishment of the ratio of stable and labile indicators of the body composition of athletes of the Vitebsk region, depending on gender and level of athletic qualifications.

Material and methods. Athletes were examined on the basis of the Vitebsk regional sports clinic. The body composition of the examined individuals was determined by the results of bioelectric impedance analysis, conducted using the apparatus BODY Analyzer 2040 (Italy). Athletes were divided into groups by gender and sports qualifications: candidates for master of sports (CMS) and master of sports (MS). Cyclic species sports are represented, for the most part, by athletes in athletics, swimming, rowing and speed skating. When analyzing body composition, a two-component model was chosen, according to which the whole body mass is represented as fat mass and fat free mass. The difference in the results was determined by the option "Ttest" Excel. Results were considered statistically significant with a probability of $p < 0.05$.

Findings and their discussion. The group of height-weight indicators (Table 1), except for height and weight, includes indicators obtained in impedancemetry: ideal weight and BMI, calculated by the ideal mass - BMI (ideal-weight). It turned out that men MS are significantly higher in height of athletes of the CMS, do not differ in real weight, but differ in the ideal. This can

be explained by different age, but it is noteworthy that the real and ideal BMI in these groups is no different, This means that these indicators are sustainable.

Table 1- height-weight indicators athletes of the studied groups

	Age (years)	Height (cm)	Weight (kg)	BMI (kg / m2)	Ideal-weight (kg)	BMI (ideal-weight) (kg / m2)
Men CMS (n=22)	16 ±0,4	179±2,1	69,7±2,31	21,7±0,50	71,0±1,64	22,2±0,17
Men MS (n=22)	20 ±0,7	185±2,1	75,7±3,38	22,0±0,78	75,5±1,35	22,1±0,17
Test CMS– MS	0,0001	0,050	0,155	0,734	0,040	0,844
Women CMS (n=20)	17±0,4	166±1,4	57,4±1,38	20,9±0,38	54,7±0,75	19,9±0,15
Women MS (n=15)	20±0,9	167±2,5	58,1±2,03	20,9±0,61	55,9±1,13	20,1±0,29
Ttest : CMS MS	0,04	0,70	0,79	0,99	0,37	0,60
Test : Men.–Women. CMS	0,04	0,00001	0,0001	0,20	0,000000	0,000000
Test : Men.–Women. MS	0,88	0,00001	0,0001	0,26	0,000000	0,00001

Women of the two groups do not differ among themselves in all indicators, except for BMI. In the CMS group, women have a significant excess of the real body mass index over the ideal, despite statistically insignificant indicators of real and ideal mass. Thus, an ideal mass BMI may be more informative. Women CMS and MS are lower in height, lighter in terms of real and ideal mass than men.

The percentages of (FM) and (FFM) turned out to be independent of age and sports qualification, both in men and women (Table 2). In women, the percentage of fat is greater than in men , this is especially noticeable on a relative indicator: FFM / FM. This indicator is significantly higher in men by 2 times than in women in the CMS group and 2.8 times higher in the MS group. When comparing the percentage of fat with the masters of sports of Russia in these sports, it turned out that it is 1.5 times higher in men in the Vitebsk region (for sportsmen of Russia 9.8 ± 0.44), for women - 2 times (for sportsmen of Russia 13 ± 0.56) [1, p. 91].

From table 3 it follows that most male athletes to achieve an ideal mass, you must remove the percentage of fat, about the same as a percentage of fat free mass which should be added.

Table 2 – Labile components of body weight of athletes of the studied groups

	Free-fat-mass(%)	Fat-mass (%)	Free-fat-mass /Fat-mass
Men CMS (n=22)	84,2±0,93	15,8±0,93	5,81±0,434
Men MS (n=22)	85,95±1,341	14,03±1,341	7,8±1,21
Ttest : CMS MS	0,29	0,28	0,13
Women CMS (n=20)	73,9±0,87	26,1±0,87	2,83±0,124
Women MS (n=15)	73,9±1,1	26,1±1,1	2,83±0,177
Ttest : CMS MS	0,98	0,97	0,90
Test : Men.–Women. CMS	0,000000	0,000000	0,000001
Test : Men.–Women. MS	0,00000	0,00000	0,00064

In women, it is recommended to remove a higher percentage of fat than add the percentage of lean mass.

Table 3 – Recommended Changes to Achieve an Ideal Mass of Athletes of the Groups under Study

	Free-fat-mass-add	Free-fat-mass-dec	Fat-mass-add	Fat-mass-dec
Men CMS	6,62±0,908	8,63±6,184	–	6,38±1,732
n	20	3	1	21
Men MS	6,76±0,459	6,1±1,71	3,03±1,602	5,29±1,707
n	18	4	3	18
Ttest : CMS MS	0,89	0,73	–	0,66
Women CMS	2,65±0,240	–	–	5,09±0,80
n	19	1	1	19
Women MS	3,42±0,71	1,45±0,35	2,0±1,5	5,3±1,08
n	13	2	2	13
Ttest : CMS MS	0,32	–	–	0,89
Test : Men.–Women. CMS	0,0004	–	–	0,506
Test : Men.–Women. MS	0,0007	0,070	0,672	0,996

Conclusion. In addition to the real BMI indicator, the ideal BMI proved to be informative for women gender informative indicator - "FFM / FM". There is a great potential in regulating the training load of athletes of the Vitebsk region in cyclic sports using markers such as percentages of fat and fat free mass.

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MODERN APPROACHES TO THE DEVELOPMENT OF TACTICAL THINKING IN YOUNG BASKETBALL PLAYERS

D. Borsch
VSU named after P.M. Masherov, Vitebsk, Belarus

In modern sports, in order to win, it is not enough to have only a set of developed physical qualities, but you also need the ability to apply them in time, foresee the opponent's ideas, correctly design the course of your own actions, find the right solution, outwit the opponent, etc. responsible tactical training. The importance of tactical training is characteristic of all game sports, in basketball it is the same in a special place.

Any great athlete or team gains basic knowledge from junior sports, going through many competitions, tempered by huge loads, trained by various methods, as a result they become ordinary athletes from an ordinary child. Every year the level of fitness of athletes is increasingly increasing, even in adolescence in order to compete or be first, you need to use new approaches, methods and means for training. Especially in team sports, the team should work as a well-coordinated mechanism, be combinationally diverse, understand each other from half-words, when one attack can flow into another, where the speed and manner of play constantly change. All this, children need to train a coach, which is not so simple.

Many authors were looking for ways to improve, speed up and facilitate the training of tactical combinations, speed up the development of tactical thinking of the player and the team as a whole. Such scientists as Annenkov V.N., Barbashov S.V., Giryatovich E.G., Kolotilshchikova S.V., Rodionov A.V. Sivitsky V.G. and etc..

All these authors are united not only by the fact that they worked on new methods of developing tactical thinking in athletes, but also by the fact that they used new teaching directions in pedagogy - programmed training that combines cybernetics, psychology, logic and other areas of science. For example, S.V Malinovsky., on the basis of programmed training, created the simplest chain of action algorithms for football players, in which athletes were asked to complete a tactical combination in several moves [1]. This method has shown high efficiency in teaching tactical combinations and the development of tactical thinking in athletes.

Programmed training - is a system of sequential actions and operations, the implementation of which leads to a pre-planned result.

A significant contribution to programmed learning was made by B.F. Skiner, his theory is based on the fact that any action directly affects the outcome of a subsequent action. And because of this, it is possible, through the selection of certain actions, to control the behavior in the right direction.

In the late 60s - early 70s. L.N. Landa, working on programmed learning, proposed to algorithmize the learning process. He singled out such types of programmed learning, as - algorithmization.

The algorithm - is a strict indication of how to perform certain actions, cognitive tasks and operations.

Algorithmization of training involves the construction of models of correct thinking, consistent mental actions that lead to solving educational tasks in a shorter way. Which can be used in the training process.

Material and methods. As a result of studying theoretical material and practical experience, a workbook for tactical training was created on the basis of programmed training. The notebook contains tasks of various difficulty levels from first to third, where the first difficulty level is considered simple in the attack tactic (2-3 players are involved, the combination consists of 2-4 actions, the solution consists of 1-2 "steps" (moves)). The tasks of the second level of complexity involve 3-4 people, the combination may consist of 3-6 actions, the solution is 2-3 "steps" (of a move). The third level of complexity includes actions of 3-5 players, a combination can consist of 5-8 actions, a solution in 3-4 "steps" (turn) (see Figure 1) [2].
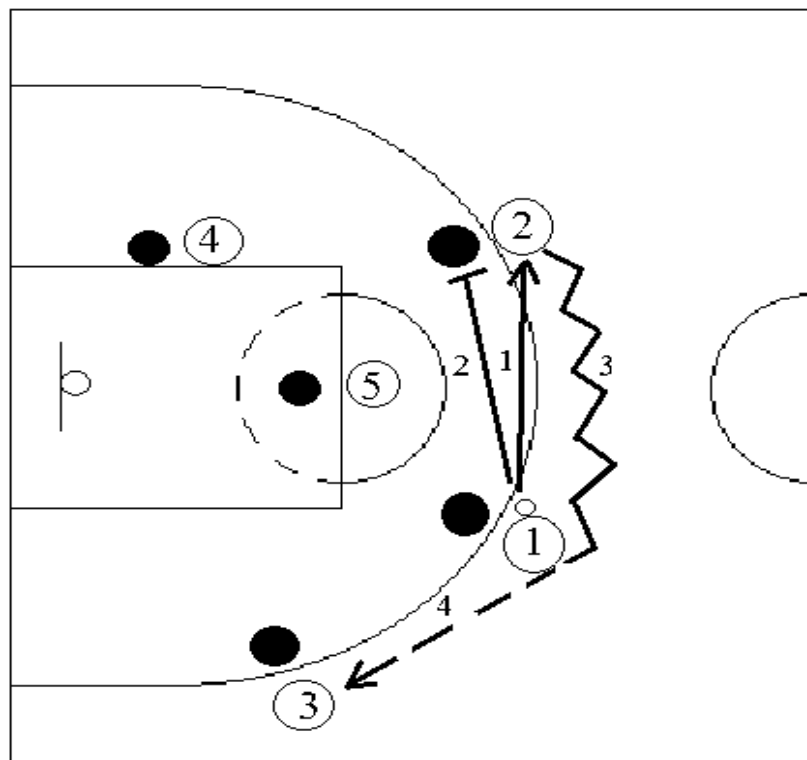
Figure 1 - Example of the task of the third level of complexity

In this task, player number 1, possessing the ball, gives the transfer to player number 2 and puts him a barrier. Player 2 is maintained by shifting along a three-point line in the direction of player 3 and gives that pass. At this time,

one of the players puts a barrier to his partner, and he, freed from custody, passing under the ring, receives the transfer and performs a throw. Need to draw a combination.

In tasks of defense tactics, the complexity of the task is ensured by the number of attackers involved and the interaction between them.

Findings and their discussion. To confirm the developed methodology, a pedagogical experiment was conducted on the basis of the "Youth School TSMOKI-MINSK" on two groups, the control and experimental, each group consisted of 10 people. One group of basketball players was engaged in the standard method of training, the second using the developed workbook for the development of tactical thinking. The whole experiment took 9 months. Initially, the experiment in both groups was tested to determine the initial level of tactical thinking, in which the control group scored 9.2 points for solving tactical problems, and the solution time was 3.8 minutes, the experimental group scored 10.1 points, for which it spent an average of 3, 9 minutes. This suggests a low level of tactical thinking in both groups [3].

At the end of the experiment, control testing was conducted in both groups of basketball players to change the level of tactical thinking, in which the experimental group scored an average of 22.7 points, while the time for solving tactical tasks did not change and was 3.8 minutes. As a result, it can be concluded that, at the same time, the experimental group learned to find much more options for the correct answers to tactical tasks. The control group at the end of the experiment scored an average of 9.8 points, while the time spent on solving tactical tasks also remained practically unchanged and amounted to 4.1 minutes.

Conclusion. As a result of the study, a high efficiency of using the concept of programmed training in the training process and the workbook developed on this basis for tactical training was revealed. This allows the coach to save considerable time on explaining new tactical schemes and to be able to individually control the changes in the level of tactical thinking for each player.

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INFLUENCE OF FITNESS JUMPING ON THE FUNCTIONAL CONDITION OF THE ORGANISM OF MIDDLE AGED WOMEN

A. Kanyhina
Vitebsk State Order of Peoples' Friendship Medical University, Belarus

One of the relatively new types of recreational physical culture that is gaining popularity among various age categories of the population is fitness jumping [1, 2]. Practical activities carried out by us in this direction show a positive attitude and interest in jumping of middle-aged women, a positive impact on the emotional state and mental performance of the students [3].

The active expansion in the fitness practice of jumping requires the strengthening of scientific research aimed at substantiating the training programs used with the population, studying the effectiveness of these classes to identify their health and pedagogical effectiveness.

The purpose of the study is to investigate the impact of physical fitness classes on fitness jumping on the level of physical development of middle-aged women.

Material and methods. At the first stage, the scientific and methodological literature on the problem of the health status of middle-aged women, the influence of fitness jumping on the development of physical qualities, physical development, and the functional state of the body are analyzed.

At the second stage, a pedagogical experiment was been conducted. The study involved 18 women, aged 35 to 54 years, engaged in the health group of EI "VSMU" and who are employees of this institution. The pedagogical experiment lasted 16 weeks from February to May 2018, the women were engaged in fitness and fitness classes twice a week in the fitness room «Fortios» «VSMU». The characteristic of the functional state of the body and physical fitness of a group of women is given.

We used the following research methods: analysis of scientific and methodological literature, anthropometry, the method of indices and functional tests, methods of mathematical statistics «Statistika 10.0».

Findings and their discussion. At the beginning of the pedagogical experiment, and then at the end of the women, anthropometric measurements were made, indexes were calculated, and functional tests were carried out. As a result, it was found that after a fitness jump class, changes were observed in the BMI, where, at the beginning of the study, the average rate among those involved was according to the WHO standards, «overweight people (pre-fat)» category – 25,02 ± 2,55 c.u. At the end of the experiment, the average value of BMI moved to the «norm» category – 23,03±2,63 c.u. (p <0.05). The SI study allowed us to determine the increase in the indicator from 43,99±4,56 kg to 48,68±5,52 kg (p <0,05), but the level remained unchanged within the «below

average» range. Continuing to investigate the level of physical development of women (according to the table of L.G. Apanasenko), it was determined that the state of the cardiorespiratory system, as well as the recovery processes in the organism after exercise, by Martin test, also changed, so the average fell from 80,67±17,24 to 75,67±18,47 s – level «above average».

The Robinson index, used to assess the level of functional status of the cardiovascular system (indirectly reflecting oxygen consumption), in the women studied varied from 93,87±9,73 to 93,31±10,28 points, which indicates a level "below average". To assess the functional state of the respiratory system in the pedagogical research, the test of Stange and Genche was used. It was found that the average breath-holding time after inhalation (the Stange test) changed from 36,33±9,83 to 40,89±9,71 s (p<0,05), and the average of the breath-holding characteristics after exhalation (Genche test) increased from 19,56±4,51 to 23,83±5,90 s (p<0,05), the obtained data stated that the subjects belong to practically healthy people. The functional state of the nervous system and the neuromuscular apparatus was been assessed using Romberg's test, or rather its modification according to E.Ya. Bondarevsky, as a result of which the average time of the static position of the participants at the beginning of the experiment was obtained 9,33±3,88 s, at the end time increase up to 11,11±3,46 s (table 1).

Table 1 – The level of physical development of women of the experimental group, the average age is 44,28±6,45 years

Periods	The beginning of the experiment (n=18)			P	End of experiment (n=18)		
Indicators	$\bar{X}\pm\sigma$	min	max		$\bar{X}\pm\sigma$	min	max
Weight, kg	70,83±7,83	65	95	**p<0,05**	65,17±7,64	54	87
DMH, kg	31,06±3,80	25	40	p>0,05	31,56±3,85	25	40
HR, уд./min	77,67±7,40	66	90	p>0,05	77,22±8,03	60	90
SBP, (m.o.m)	121,00±7,42	105	130	p>0,05	120,42±5,35	105	130
BMI, c.u	25,02±2,55	22,22	31,38	**p<0,05**	23,03±2,63	18,47	28,74
SI, kg	43,99±4,56	37,5	52,31	**p<0,05**	48,68±5,52	39,39	57,63
Martin test, s	80,67±17,24	59	119	p>0,05	75,67±18,47	59	119
Robinson Index, points	93,87±9,73	75,9	112,5	p>0,05	93,31±10,28	75,9	112,5
Romberg test, s	9,33±3,88	5	20	p>0,05	11,11±3,46	7	21
Shtange test, s	36,33±9,83	20	54	**p<0,05**	40,89±9,71	25	59
Genche test, s	19,56±4,51	15	31	**p<0,05**	23,83±5,90	17	35

Conclusion. The conducted pedagogical experiment stated that the analysis of anthropometric measurements, functional tests, and their derivatives in women revealed changes. It is also necessary to cancel the fact that in the experimental group after passing a course of fitness jumping, such statistically significant indicators as weight, BMI, SI, LI, as well as indicators of the functional state of the respiratory system, according to Stange and Genche, have changed. Thus, the use

of fitness jumping confirms the high health-developing potential for the body involved.

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DEVELOPMENT OF BALANCE IN YOUNG PEOPLE WITH INTELLECTUAL DISABILITY

A. Kazlou
VSU named after P.M. Masherov, Vitebsk, Belarus

In the life of people with intellectual disabilities, coordination abilities play an important role, since they ensure the quality of the entire motor activity. One of the most important coordination abilities is balance. In ontogenesis of a normally developing organism, a person's equilibrium is constantly being improved, reaching a level at a young age that ensures the high-quality performance of all basic vital activities (walking, running, overcoming obstacles, jumping, etc.). The peculiarities of the development of equilibrium in persons with intellectual deficiency are still relatively little studied. The scientific and practical significance of this knowledge lies in their use by specialists in the development of methods and programs aimed at the development and correction of coordination abilities (in particular, equilibrium) of the contingent under consideration.

Purpose of thei study is to explore the level of development of equilibrium in people of young age, with moderate and severe degree of intellectual deficiency.

Material and methods. The level of development of equilibrium with the help of "Romberg's Test" was studied in people who are in the Department of

day care of disabled people of the territorial center of social services of the population with a moderate and severe degree of intellectual insufficiency [1]. In testing was attended by 11 people. We evaluated the ability to maintain static balance: more than 15 seconds exhibited a good rating, less than 15 seconds – ability was assessed as unsatisfactory.

Findings and their discussion. The test results are shown in figures 1, 2.
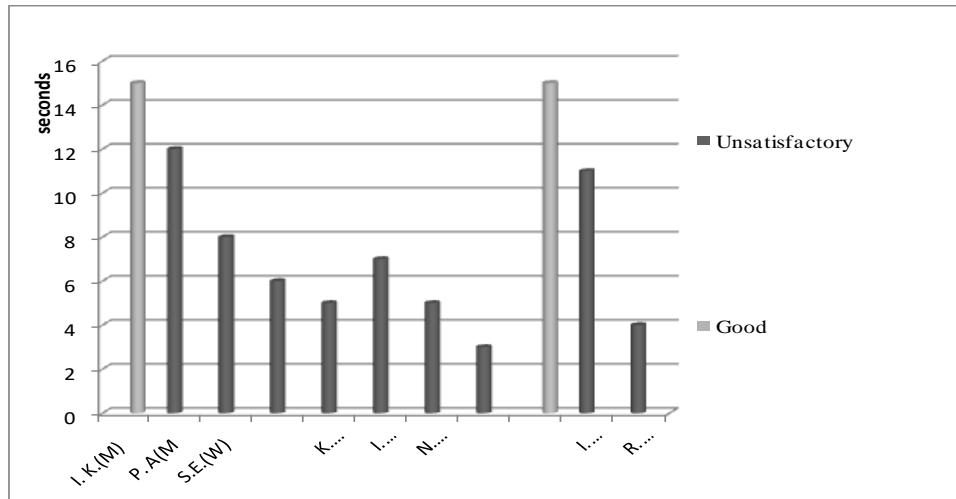
Figure 1 – indicators of the development of static equilibrium in people with moderate and severe intellectual disability.

Analysis of individual test results (Fig.1) showed that 82% of the surveyed indicator of the development of equilibrium was at an unsatisfactory level. A good level of development the coordination abilities was recorded only in 18 % of the surveyed young people. Based on the results of testing in which indicators have been defined for the development of static balance in people with moderate and severe intellectual disabilities, it can be concluded that the surveyed located in the Department of day stay of disabled persons the development of such qualities as balance to be very low and there is a need for scientific research and methodological developments aimed at effective learning in this area.
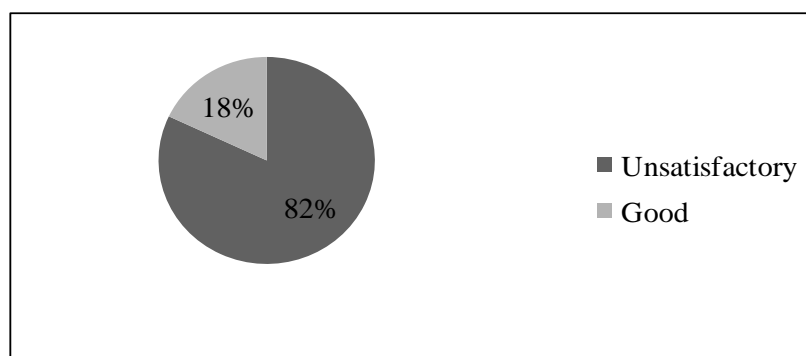
Figure 2 – the ratio of persons with intellectual disability of unsatisfactory and good level of development of balance, in %

Conclusion. Despite the age of those examined, the results of the study indicate that in young people with intellectual disabilities the indicator of the development of equilibrium is at a very low (unsatisfactory) level. This greatly hinders the ability of people to self-service, maintain an independent lifestyle, reduces the quality of life in general.These findings actualize the need to develop methodologies and developmental programs for correcting the state of ability to balance in young people with intellectual deficiency.

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ASSESSMENT OF PHYSICAL CULTURE KNOWLEDGE ON «ADAPTIVE PHYSICAL CULTURE» IN CHILDREN WITH MODERATE AND SEVERE MENTAL RETARDATION

M. Khrapovitskaya
VSU named after P.M. Masherov, Vitebsk, Belarus

Currently, the problem of teaching children with mental retardation is becoming increasingly important. The number of children with intellectual disabilities reaches about 1% (with some predominance of males), as indicated by the World Health Organization, but these are average numbers, they cannot reflect the true number of such children and young people in different countries. Unfortunately, these statistics tend to grow. Further improvement of the education of mentally retarded children, the preparation of students for practical labor activities at the present stage of special education remains the most important both practical and scientific task.

Correction of cognitive activity is of particular importance in the development and training of this contingent, preparing children for life. Formation of knowledge in children with mental retardation, especially with severe is the leading difficulty in organizing their successful learning. This problem also affects the pedagogical process of physical education in the auxiliary school, where such children study.

The lack of appropriate physical education in children about the name of exercises, equipment and equipment, ideas about motor actions that must be performed on the instructions of the teacher leads to the impossibility of solving educational and other tasks in the classroom, lack of working environment and almost complete interaction in the classroom with students.

The list of physical education knowledge, which determines the curriculum for Adaptive Physical Culture in auxiliary school, is relatively small (no more than 2-3 topics in each class). At the same time, even this small amount of

knowledge is poorly absorbed by most children with moderate and severe mental retardation during the entire period of schooling (from grades 1 to 9). Hence, scientific research and practical solutions to this problem are of great importance for the effectiveness of the physical education of this contingent.

The purpose of the research is to study the features of the formation of physical education knowledge in children with moderate and severe mental retardation, who study in an auxiliary school, to further develop methodological material on their development and improvement.

Material and methods. The study involved children with moderate and severe mental retardation, studying at the State Educational Institution "Auxiliary School No. 26 of the city of Vitebsk". A total of 20 children were examined, 17 of them with moderate and 3 with severe mental retardation. Age of participants 9-16 years.

In order to identify the level of physical culture knowledge in children with moderate and severe mental retardation, a survey was conducted using pre-prepared and developed visual material. It was a set of pictures reflecting the most famous objects and elementary actions that help to reveal the knowledge of children about body parts, actions, knowledge of equipment and equipment, knowledge of starting positions, and others.

Findings and their discussion. A visit to the auxiliary school, communication with students of grades 1–9 with moderate and severe mental retardation showed that to obtain the most objective information, an individual approach is needed in the survey methodology according to the drawings we offer. At first, some people refused to do anything at all, and only after a few of my visits, having become accustomed to me, began to take part in the survey. Others from my first acquaintance with them became interested in this event and passed the survey without any problems. Thus, almost all children with moderate mental retardation were able to name the pictures shown to them, with only a few exceptions. Children with severe mental retardation were extremely limited both in contact with the researcher and in answers to questions suggesting the student to show this or that object, action, etc. in the picture. This required first to call and show him in the picture what is connected with the question , and only after that they could already find the object in the pictures. To reveal the knowledge of the initial positions, it was necessary to explain to the student 1-3 times what the picture means, and only after that they could point to this drawing again.

According to the results of the survey, it was revealed that students in grades 1-5 of primary education were poorly formed knowledge of actions and starting positions, knowledge of equipment and equipment - better, almost everyone knows parts of the human body. Pupils in classes covering basic education (grades 6-8) showed the best survey results. The study showed that out of 20 children with moderate and severe mental retardation, only 1 girl showed a picture knowledge close to 100%. In primary school children,

knowledge of equipment and equipment averages 47% (of recognizable objects of the total number (100%) of the drawings offered in the test), actions and initial positions - 33%. In grades 6-8, rates were approaching a higher level. The amount of equipment and equipment recognized in the drawings in children of these classes increased to 69%, the number of motor actions and initial positions - 47%. Only 1 6th grade student showed absolute ignorance of parts of the human body.
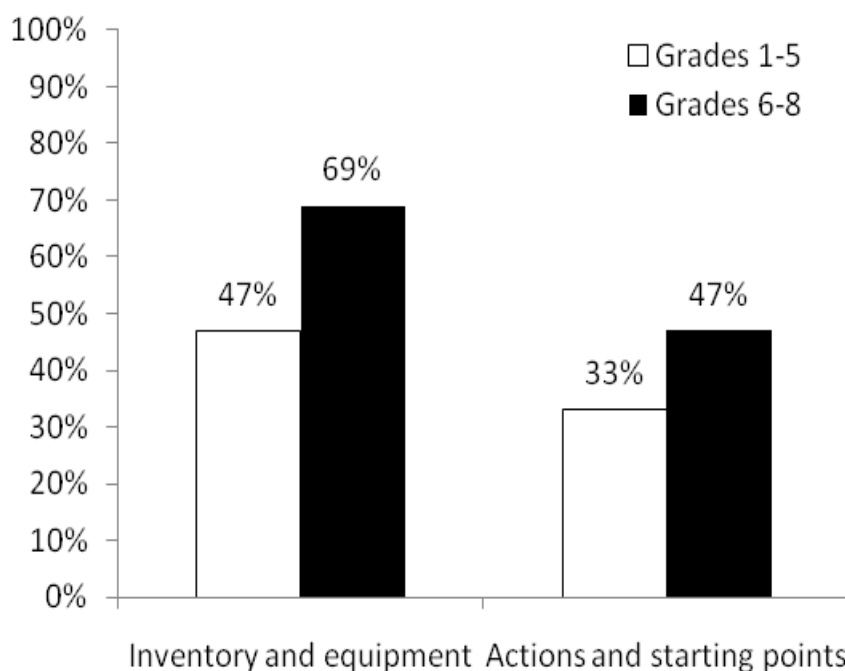
Picture 1 – Indicators of the percentage of physical education knowledge in children with moderate and severe mental retardation of different classes

Conclusion. The study showed that in children with moderate and severe mental retardation, the level of formation of physical culture knowledge, regardless of age criterion, does not exceed 69%. Knowledge of the inventory and equipment turned out to be the most mastered in children, and less developed - on motor actions and initial positions. From class to class as they matured, the amount of physical education gained was increasing. However, remaining extremely low in terms of actions and starting positions. Even in high school, students could only show about half of the actions and starting points suggested in the figures. The overall picture of the development of physical culture knowledge in children with moderate and severe mental retardation of the studied age groups showed, on the whole, the level of recognition of the pictures proposed in the test slightly below the average (49.6%). In order to increase the efficiency of the formation of physical culture knowledge among students of the second branch of the auxiliary school, a further search for new forms and means of education is necessary.

THE ANALYSIS OF PHYSICAL FITNESS OF 1ST-YEAR STUDENTS OF FACULTY OF SOCIAL PEDAGOGY AND PSYCHOLOGY OF MASHEROV VITEBSK STATE UNIVERSITY

E. Mikhalenok
VSU named after P.M. Masherov, Vitebsk, Belarus

Physical education plays an essential role in the students' professional activity as their work is mostly connected with considerable concentration, intensive intellectual activity and sedentary lifestyle. Physical education lessons reduce the exhaustion of the nerve system and the whole body, increase productivity and conduce health promotion.

The aim of this study is the analysis of 1st-year students' physical fitness with the standards of the tests of the State Sports and Fitness Complex of Republic of Belarus.

Material and methods. Students of the Faculty of Social Pedagogy and Psychology of Masherov Vitebsk State University participated in the research. The methods involved are the analysis of research and methodological literature, pedagogical observation held to reveal students' fitness, pedagogical experiment conducted in the form of fit testing, mathematical and statistical processing of the results of the State Sports and Fitness Complex of Republic of Belarus (SSFC of RB).

Findings and their discussion. The results of the testing held mid-semester of the 2016/2017 academic year include following exercises: abdominal crunches with hands on the nape during 30 seconds – the number of times, push-ups – the number of times, standing long jumps – cm, two leg squats with hands on the nape – the number of times, angle body, sitting on the floor and with feet apart at a distance 50 cm (flexibility) – cm.

Table 1 – The Results of Testing the level of fitness of the 1st-year students

Checkup Tests	Gender	(X±o)	V%
1. Abdominal crunches with hands on the nape per 30 sec. – the number of times	Male	28,61±4,7	16,4
	Fem.	26,2±4,3	16,4
2. Push-ups- the number of times	Male	29,08±9,5	32,6
	Fem.	9,7±1	18,5
3. Standing long jumps – cm.	Male	221,9±19	8,5
	Fem.	171,8±19,4	11,2
4. Two leg squats (with hands on the nape) – the number of times	Male	40,78±2,3	5,6
	Fem.	36,6±4,4	12
5. Angle body – cm. (flexibility)	Male	15,3±7,8	50,9
	Fem.	26,7±11,3	42,3

From the variety of the tests of SSFC of RB, the number of types of trials(tests) that must be accomplished for getting a mark of distinction 6,7,8 for the low, mid and high levels of development in accordance, we have selected 5 tests similar to our testing.

Table 2 – The standards of the SSFC of RB for 19-22-year-olds

Sl.No.	Types of trials	Men			Women		
		low	mid	high	low	mid	high
1.	Standing long jump with double take-off (cm)	215	230	240	170	180	195
2.	Pull-up from suspension on a high bar (the number of times)	9	10	13	-	-	-
	Pull-up from suspension lying on a low bar (the number of times)	-	-	-	10	15	20
3.	Bending with knees straight on a gymnastics bench (the number of times)	6	7	13	8	11	16
4.	Floor push-up (the number of times)	-	-	-	10	12	14
5.	Abdominal crunches (the number of times per minute)	-	-	-	34	40	47

Analyzing the results of testing the level of fitness of 1st –year students, the data according to the standards of the test of SSFC of RB, the following can be noted among young males: as far as exercise on abdominal crunches with hands on the nape per 30 sec. is concerned, the number of times accomplished exceed the standard of the midterm assessment (table 3). As for the standing long jump, the students' results are below-standard of the test of SSFC of RB, correspond to 4 points according to the results of the midterm assessment. The number of two leg squats corresponds to 5 points according to the results of midterm assessment, there is no standard in the test of SSFC of RB. The results of angle body (flexibility) exceed the standard of the midterm assessment.

Table 3 – Standards of the midterm assessment for 1st –year students

Checkup Tests	Men			Women		
	5	4	3	5	4	3
1. Abdominal crunches with hands on the nape per 30 sec. – the number of times	26	23	20	24	21	18
2. Push-ups- the number of times	26	20	15	10	7	5
3. Standing long jumps – cm.	235	215	195	185	175	165
4. Two leg squats (with hands on the nape) – the number of times	40	35	30	35	30	25
5. Angle body (flexibility) – cm.	12	8	4	18	14	10

As for young females: in the exercise of abdominal crunches per 30 sec. the number of times accomplished exceeds the point 5 of the midterm assessment, it can be noted that female students exceed the standard of this exercise per minute in the test of SSFC of RB. As far as test in standing long jumps is concerned, the results of female students are below-standard and correspond to 3 points according to the midterm assessment. It can be also noted that the female students' results in push up exercise are as well as they showed during the midterm assessment, also their results considerably below the standard of SSFC of RB. The results of the test on flexibility considerably exceed the point of 5. As for two leg squats, the results correspond to 5 points according to the results of midterm assessment, and there is no such standard in SSFC of RB (2).

Conclusion. In general, good level of fitness among 1st -year students of Faculty of Social Pedagogy and Psychology of Masherov Vitebsk State University can be observed, however, at the same time special attention should be paid to the development of speed-power characteristics in further organization of studying classes of physical education in higher education establishments.

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A ROLE OF PHYSICAL CULTURE IS IN EDUCATIONAL AND UNEDUCATIONAL ACTIVITY OF SCHOOLCHILDREN

A. Mironov
VSU named after P.M. Masherov, Vitebsk, Belarus

According to the survey within the framework of the program of development of the UNO and administrative support of Department of Education of the Republic of Belarus, 75,2% of schoolchildren "surfe in the Internet", 47,1% - " go out with friends", 33,4% - do sports, 57% - "play computer games", 14,6% - "read books", 6% - "play the game machines", 5,9% - "go to discos and evening-parties" [4]. Similar issues are of great concerned in the nearby states, particularly in Russia [1,2,3]

Based on our own practical work experience and experience of communicating with schoolchildren, the result of the survey attracted. . However, this research was conducted on the basis of metropolitan schools, eur attention and the results obtained may differ radically from other regions.

Therefore, we decided do study of this problem in Vitebsk.

The purpose of the research was to study the attitude of schoolchildren to the lessons of physical culture and health, as well as their interests outside the school.

Material and methods. The study was conducted with secondary and high school students in the city of Vitebsk from September 1 to October 30, 2018.

In total, 540 students of secondary and high schools of various schools of Vitebsk took part in this work.

The main research methods were questioning, survey, and interview.

Findings and their discussion. The results of the interview, survey, and questionnaire revealed some points that either interfere with the classes of physical culture and health, or make it difficult to assimilate new information and thus reduce the productivity of the lesson.

The main obstacle for students is a large number of people who are simultaneously present in the gym - 61.88%, a high noise level during classes - 53.17%, classmates- 18.82%. A large number of students in the gym is the main obstacle for learning information and the desire to be involved in a lesson. It is also difficult for the teacher to give new information to students when there are three classes in the gym or even four classes at a time. The noise of the whistle does not stop, and instead of explaining the new material, or practicing the already learned exercises, the teacher have to spend a lot of time on regiment children, which leads to a decrease of interest in the subject and decreases the learning of useful information.

It also turned out that students do not like the warm-up at the beginning of the lesson - 46.4%, the atmosphere of rivalry - 39.3%.

Students would like to see new sports activities in class - 56.9% of respondents. Often these activities are not included in the curriculum. For example, students show great interest in weight-lifting, arm-wrestling, street workout, calisthenics (working with their own weight), fitness, and aerobics.

I would like to notice that children are often well-informed in a particular sport, and if they like this kind, of sport they independently look for information about it and can tell a lot. But on the other hand, students are often poorly physically developed and their knowledge can not be transferred to practice.

According to a survey among children involved in sports sections, 22.8%, but they are divided into students who systematically practice in sections with coaches, and children who, for example, visit the pool once a month and work without a coach.

In addition, schoolchildren prefer "going out with friends" in their free time - 41.8%, "surfing the Internet" - 9.8%, "taking a break from studying" - 15.7%.

Conclusion. Thus, an analysis of literary sources, a survey and interviews with schoolchildren indicate that approximately the same number of students living in large cities and regional centers are interested in sports. Overcrowding in gymnasiums due to the simultaneous presence of several classes leads to a negative attitude of students towards physical education. However, students are attracted to modern areas of exercise, and if certain conditions are created, they would be happy to attend sections on these sports.

Vitebsk schoolchildren, according to the survey, spend much less time surfing on the Internet than their peers from other regions. The results of our research differ significantly from those of other authors who express the idea that modern teenagers are "captured by the Internet" and therefore do not play sports [1,4]. In our case, schoolchildren, in their spare time, are mostly left by themselves and not involved in any activities, apartyirom th use of low alcohol beverages and smoking.

Therefore, at present, it is an urgent task for schools to involve schoolchildren in organized physical exercise, providing all the necessary conditions for it.

Leisure time should be considered as a sphere of activity, and its organization as a means of improving the personality.

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SPORTS KNOWLEDGE IN THE SYSTEM OF PHYSICAL CULTURE FORMATION OF PUPILS' IDENTITY IN DAY-CARE CENTERS

A. Misyura
Francisk Skorina Gomel State University, Gomel, Belarus

The formation of health culture and healthy, physically active, pupils' lifestyle is carried out at the first step of the general secondary education. The subject "Physical Culture and Health" provides studying not only the above-named question, but also the formation of physical culture of pupils' identity and their improvement taking into account age features during school hours [4, p.3].

The development of physical culture knowledge, acquaintance with the motive mode, the idea of physical development, readiness and its indicators and others are referred to the educational problems of this subject.

Day-care center, being the form of pupils' organization after hours, besides the subject "Physical Culture and Health", also has considerable opportunities for the solution of educational tasks.

The main tasks of activity in day-care center in institutions of education are the following: preservation and maintenance of pupils' health in nonlearning time, their all-round physical development and, therefore, assimilation of bases of sports knowledge and knowledge of a healthy lifestyle that in turn, makes a certain impact on physical culture formation of the child's identity [1, p.21].

To ensure pupils' rest after lessons in an operating mode of group certain time should be given to the organizations of sports and improving activity. It consists of holding such actions as sports hour indoors and in the open air, sports minutes on occupations, walks, indoor games [3, p.34].

The level of pupils' knowledge in the questions of a healthy lifestyle and the condition of their physical development depends on the efficiency of doing sports and improving activity.

The purpose of the research is the assessment of knowledge in physical culture and a healthy lifestyle of the pupils visiting day-care centers at high school No. 59 in Gomel for improvement of sports and health promotion work.

Material and methods. Seventy-nine school students, visiting day-care centers, took part in the questioning. The questionnaire consisted of 10 questions and defined the knowledge of physical exercises, their influence on an organism, the ways of formation of a correct posture, types of sports equipment, the choice of sport and a ball, exercises for formation of power abilities, a concept of pulling up in hanging and other questions.

The tasks were made in an illustrated form with the choice of one or several necessary possible answers. The maximum quantity of the correct answers equaled 15. The fragment of the questionnaire is presented in figure 1.

Figure 1 – The questionnaire on sports knowledge

Findings and their discussion. The assessment of pupils' knowledge was distributed on levels according to an integrated 10-mark scale of assessment of pupils' educational achievements.

Six pupils got high level of answers (more than 90%). Level above an average was reached by 36 pupils (45, 6%), the average level of knowledge - 31 students (39, 2%), below average (satisfactory) – 6 pupils (7, 6%). The general level of knowledge was 68, 6%.

Most school students have perfectly coped with the question about sports choice (soccer, volleyball, handball, basketball) and the ball corresponding to this kind of sport. They have also correctly specified the daytime, during which it is better to do exercises, and have noted an excess subject from sports accessories. A number of mistakes were made in the question about the choice of the subject relating to shuttle run, understanding of exercise – pulling up in

hanging. Not all pupils unmistakably gave the preference to the occupations, promoting formation of a correct posture.

The children attending the additional sports sections, developing classes or groups on interests (drawing, a vocal, rhythmic, choreography) were revealed from 79 questioned pupils. The results of their answers were compared with the pupils who do not attend any classes and are presented in table 1.

Table 1 – Level of pupils' knowledge in physical culture

Level of knowledge	Level of pupils' knowledge who aren't visiting the sports sections	Level of pupils' knowledge visiting sports sections	Level of pupils' knowledge visiting developing sections
High	2 (6,45%)	4 (12,1%)	0
Above average	12 (38,7%)	16 (48,5%)	10 (52,6%)
Average	16 (51,6%)	10 (30,3%)	7 (36,8%)
Below average	1(3,23%)	3 (9,0%)	2 (10,5%)

It is visible from the table that the high level and the level above average was reached by twice more pupils visiting sports sections.

Conclusion. It is appropriate to draw a conclusion that visiting sports sections assumes the increase of knowledge level in physical culture and promotes the maintenance of pupils' physical shape.

The children's awareness in the knowledge of physical culture is a question of constant attention. The time of stay in day-care centers can be used for having classes to increase the level of knowledge of this sort.

It is expedient to diversify forms of holding sports and improving occupations, to increase the level of physical culture knowledge and pupils' motivation to maintaining a healthy lifestyle and also to create such system of knowledge, by means of which pupils will be truly able to make the day regimen, the motive mode, to follow hygienic rules and be regularly engaged in physical exercises [2, p.32].

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THE EVALUATION OF TURNING TECHNIQUES IN SPORTS SWIMMING CONSIDERING PHYSIOLOGICAL CHARACTERISTICS OF THE STUDENTS

S. Peredrienko
VSU name after P.M. Masherov, Vitebsk, Belarus

Due to the high sports, applied, health and general developing value swimming is one of the main sections of social programs of health and physical education of different age groups. The contemporary stage of training of young specialists in the field of physical culture and sports is characterized not only by a multi-level system of training, but also allows to use new approaches in the educational process and to develop the latest technologies in teaching different kinds of sports swimming. However, there are not so many authors who are searching for the ways of individualization in training and develop a methodology taking into account the specifics of sports [1]. Studying in higher educational institutions, students of physical culture departments should receive professional pedagogical knowledge not only in their specialization, but also master knowledge and skills in basic sports among which is swimming. Swimming is also a vital skill that is why the generalization of experience using a differentiated approach, taking into account individual characteristics, for students of different specializations is relevant.

This research was conducted to determine the impact of physiological characteristics of students on the development of turning techniques in sports swimming. Performing turns in swimming is an integral part in covering different distances, the ability to perform turns properly allows you to overcome long distances without breathlessness, and to swim at a sufficiently high speed, i.e., to master sports methods technique at a high level.

Material and methods. The research has been conducted during two years (among the students who entered the University in 2015 and 2016), on the basis of the educational institution Vitebsk state University named after P.M. Masherov. The research involved 71 boy and 27 girls, second - year students. The following methods were used: the pedagogical experiment, testing, pedagogical observation, the methods of statistic processing of research results.

Findings and their discussion. An expert commission of three people was set up to evaluate the techniques. The technique of performing plane rotation related to the "open group" of turns by the "turn" method by the crawl on the back was evaluated. The grade was given for each of the three phases: up-swimming and touching the swimming-pool nosing, grouping and repulsion, sliding and exit after the turn. The obtained data were summarized and the

average grade was set. Such factor as buoyancy of the body in static posture lying on the water was determined. The assessment of the technique was carried out at the sixteenth lesson, during this time, two ways of swimming - the crawl on the chest and the crawl on the back, the technique of starts, and the technique of turns were studied. As a result of the research and statistic processing of the results, we obtained the following data: among the girls 21 people - (77.8%), with good buoyancy and high lying on the water, received a high average score-8.7; Six girls (22.2%), with average buoyancy, received As a result of the research and statistical processing of the results, we obtained the following data: among girls 21 people - (77.8%), with good buoyancy and high lying on the water received a high average score-8.7; Six girls (22.2%), with average buoyancy received as high average score as 8.2 for the technique. There can be noted that among the girls there was no one who had negative or low buoyancy or received a low grade for the technique of performing this turn. Out of 71 boys only 11 students (15%) have good buoyancy and got a high average score - 8.8. 49 people have average buoyancy (69 %), only 5 students of them (7%) received a high grade: average score -8.1, the remaining 42 people (59%) received a satisfactory grade -5.4 points. 11 boys with low buoyancy (15,2 %) received a satisfactory assessment, the average score - 5,1, only one student (1,4 %) could not master the technique of performing a turn and get a satisfactory grade during this period of time, he is likely to need additional classes.

Conclusion. Summing up and taking into account the results of statistic processing of the data obtained, we can surely say that both girls and boys have good buoyancy that allows them to master the technique of plane turns in back crawl, there was revealed a reliable interconnection ($p < 0.05$) during a small number of classes at a high level, The results of pedagogical testing confirmed the need to take into account not only the individual, but also the physiological characteristics of students in teaching sports swimming. [2]

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ANALYSIS OF THE USE OF INFO-COMMUNICATIONAL TECHNOLOGIES IN PHYSICAL EDUCATION OF UNIVERSITIES STUDENTS

M. Porokhovskaya
VSU named after P.M. Masherova, Vitebsk, Belarus

The analysis of scientific publications allows to speak about perspectivity of ideas of application of computer technics in educational process. Well-known studies demonstrating the effectiveness of the use of modern information technologies in the educational process (VA Izvozchikov, GK Petrov, TL Shaposhnikova, and others) may serve as a proof. Studying of innovative pedagogical experience and the analysis of scientific and methodological literature have shown, that implementation of modern information technologies is the major reserve of perfection of modern system of higher education [1,2].

There is a number of programs developed for optimization of educational process in physical education in higher education institutions of non-physical culture, allowing to teach the subject 'Physical Education' (S.N. Bogdanov, M.M. Chubarov, Yu.T.Zhukovsky, 1990) to plan and control physical fitness (N.G.Skachkov et al., 1991; O.V.Zhbankov, E.V.Soloviev, 1995), general motor activity (M.A.Godik, V.N.Timoshin, 1990), and also psychophysical state students (O.V.Zhbankov, E.V.Tolstoy, 1997) [3,4].

The purpose of the study - to explore the use of info-communicational technologies in the physical education of students in universities.

Material and methods. Standard curriculum in physical culture for higher educational institutions, curriculum for the discipline 'Physical culture' has been used as a materials of the study.

Research methods:
• Analysis of scientific and methodological literature
• Methods of comparison, analysis, synthesis and generalization;
• Survey and questioning;
• Methods of mathematical statistics (statistical processing of the results was carried out using the software package Statistica 6.1 for Windows).

Findings and its discussion. Studying the degree of use of information technologies in the process of physical education of students in universities, we conducted a survey and questioning of teachers of physical culture, working in higher educational institutions of Vitebsk.

Analyzing the data, it is clear that all respondents are using some types of information technologies in their work: electronic textbooks (70.0%), computer training programs (53.3%), computer systems for monitoring athlete's results (46.7%) , electronic guides (56.7%), Internet (56.7%).

Having considered the question of where exactly teachers are using info-communicational technologies in their work, we obtained the following data:

83.3% for self-education, 76.7% for preparing for an educational-training lesson, 36.7% for competitions and 26.7% at the lessons it self.

The majority of respondents (46.7%) are using information technologies in their work once a week, 36.7% - daily, and 3.3% 1-2 times per month.

The most part of the teachers believe that the use of information technologies in the educational process of physical education in the university will help to diversify the training sessions and facilitate preparation for them (86.7%), as well as improve the quality of training it self (80.0%).

Besides that, some problems were identified that hinder the introduction of information technologies in the educational process of physical education in universities. The main problems that respondents noted were a shortage of computers in the department and problems with access to the Internet at the department (43.3%), a shortage of teacher's knowledge, skills in working with ICT (36.7%) and a number of other problems.

Conclusion. The analysis of the scientific literature and the results of the survey and questioning gives as an opportunity to talk about the perspectivity of idea, such as use of information technologies in the process of student's physical education in the university.

The system of physical education in high education is constantly being improved on the basis of scientific and methodological work. The wide use of modern computer technologies in educational process of students will expand the arsenal of teaching methods, stimulate the cognitive activity of students, especially in their independent work. Creation and introduction of computer programs with elements of graphics, sound, video, etc. into the educational process in the physical culture, will contribute to the effectiveness of pedagogical work and the learning process it self.

But at the same time, it should be noted that the problem of applying information technologies on this field of education its self is insufficiently developed. Some studies conducted by P.K. Petrov, I.V. Robert, V.M. Izovchikov, A.I. Tsyboy, L.V. Mitenkova [2-4], as well as a number of existing problems that hinder the introduction of information technology in the process of student's physical education, can serve as a confirmation of these words.

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TYPES OF MEDICAL AND PEDAGOGICAL CONTROL
IN GERONTOLOGICAL PHYSICAL CULTURE CLASSES

E. Safronova
BSUFC, Minsk, Belarus

The process of women'organismaging gradually leads to decrease in its functional activity. There appear some changes in systems, organs and functional preparedness of women. All these things need to be considered during medical and pedagogical control and the admission of women to gerontological physical culture classes.

One of the most important issues of medical and pedagogical control is the issue concerning the classification of its main types.

The research aim is to study the types of medical and pedagogical control used by instructors-methodologists duringgerontological physical culture classes with women, and also the way they keepself-control diaries.

Material and methods. During theresearch the following methods were used: the analysis and synthesis of theoretical literature, a survey, a poll, the method of comparison, statistical analysis.

In the course of carrying out thesurvey the following issues were studied and analyzed:the types of medical and pedagogical control used by instructors-methodologists, thewaythe instructors-methodologists and the women who attend gerontological physical culture classes keep their self-control diaries.

54 instructors-methodologists and 70 people who attend various fitness clubs, studios of dance and fitness, sports centers of Vitebsk have been questioned. Instructors-methodologists of different age and different experience have taken part in the survey.

Among the participated in thesurvey instructors-methodologists 85,3% are women and 14,7 % – men.

Findings and its discussion. During the survey the instructors-methodologists named the following directions they work in: pilates (17,6 %), water aerobics (11,8 %), yoga (11,8 %), zumba (2,9 %), Latina (2,9 %), stretching (26,5 %), bodyflex (8,8 %), oriental dances (5,9 %), exercises in the gym (32,4 %), aerobics (41,2 %), others (47,1 %).

The answers to the question on the use of pedagogical control in gerontological physical culture classesare the following: 64,7 % of the instructors-methodologists have answered that they use medical and pedagogical control duringgerontological physical culture classes, 26,5 % of them sometimes use it, 8,8 % of them do not use it at all.

The types of medical and pedagogical control used by instructors-methodologists during the classes were distributed in the following way (picture1).
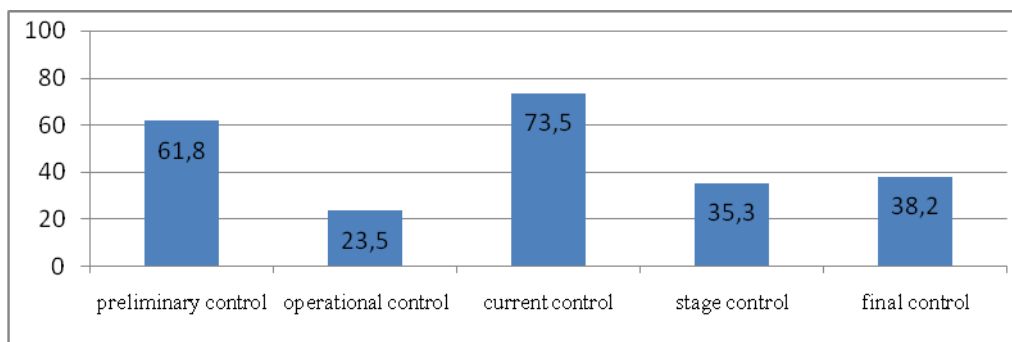
Picture1 – Types of medical and pedagogical control (in %)

Analyzing the instructors-methodologists'answers we can make a conclusion that current control (73,5 %) and preliminary control (61,8 %) are given great importance when carrying out medical and pedagogical control.

At the same time in the answer to a question: "What methods of pedagogical control you use?" answers were distributed as follows (picture 2).
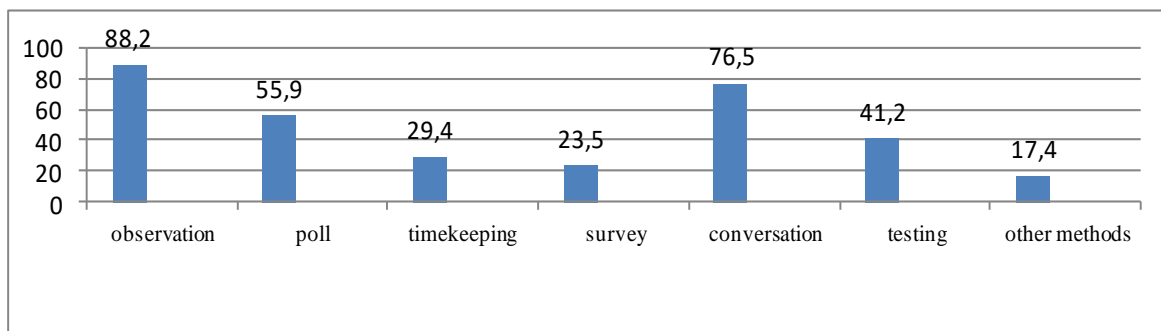
Picture 2 – Testingmethods of the level of physical fitness (in %)

According to the results of the poll on the use of self-controldiaries 55,9 % of the instructors-methodologists answered that their students don't keep self-control diaries, 23,5 % – keep self-control diaries, 20,6 % – couldn't answer this question.

74,3 % of the interviewed women answered that they want to keep self-control diaries, 14,3 % − don't want to keep them, 11,4 % − find it difficult to answer the question.

At the same time 55,9 % of the interviewed instructors-methodologists would like their students to keepself-control diaries, 23,5 % – find it difficult to answer the question, 20,6 % – don't want to useself-control diaries.

Conclusion. Thus, we can make a conclusion that ingerontological physical culture classes with women instructors-methodologists use a wide range of types of medical and pedagogical control of functional condition of their students. Keepingself-control diaries by women who attendgerontological physical culture classes shows the interest of instructors-methodologists in medical and pedagogical control.

BODY MASS INDEX OF EMPLOYEES UNIVERSITY NAMED AFTER P.M. MASHEROVA

M. Yastremskaya, V. Polovkina
VSU named after P.M. Masherov, Vitebsk, Belarus

It is known that hypodynamia is common among the population of Belarus. The profession of teacher belongs to group I of hygienic standards for daily energy consumption [1, p.98]. Hypodynamia affects body mass and causes obesity. Obesity can be the cause of hypertension, atherosclerosis, and joint damage. Body mass index is a simple, accessible and informative indicator of changes in body weight.

The purpose of this article is to study body mass index in the staff of the University named after PM. Masherov.

Material and methods. Surveyed 26 women, university staff. Their age was 40-56 years. The body mass index was calculated using the formula BMI = body mass (kg) / squared body length (m^2).

According to the WHO classification (1997) in adults, there are 4 BMI ranges: less than 18.5 kg / m^2 - insufficient body weight; 18.5-24.9 kg / m^2 - normal body weight; 25-29.9 kg / m^2 - overweight; 30 kg / m^2 and more - obesity [2, p.34].

Findings and their discussion. The average value of body mass index in the group was 28.6 kg / m^2, that is, it is characterized as excessive.

Obesity was observed in 6 employees, which is 23.1%. Among all employees, 4 had insufficient body weight, which was 15.4%. 7 women had normal body weight, which is 26.9%. 9 employees were found to be overweight, which is 34.6%.

Conclusion. The data obtained confirm that individuals with low physical activity, have a high body mass index and are prone to joint damage, hypertension, atherosclerosis.

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C O N T E N T S

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