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VARIATIONS OF INDIVIDUAL VALUES OF THE PROTEIN METABOLISM IN SIMULATED EXPERIMENTAL HYPOTHYROIDISM, IN RELATION TO THE PHENOTYPE OF ACETYLATION

Ahmadzhonuv A.K.

Tashkent Pharmaceutical Institute, Tashkent, e-mail: altirar@rambler.ru

The demand for studies of various aspects, influencing the dynamics and severity of hypothyroidism is determined by prevalence of thyroid disease, as in the Central Asia as well as in other regions of the world [3]. According to the literature, the rate of metabolism of various substances in the body, including that of thyroid hormones can be affected by individual peculiarities of the processes of biotransformation and, in particular, the processes of acetylation, which depend on predominance of either of main types of N-acetyltransferase isoenzymes in organism: N-acetyltransferase 1 (NAT1) or N-acetyltransferase 2 (NAT2) [8, 10]. The processes of acetylation, that have high activity in liver and intestines, have the leading role in the processes of biotransformation of endogenous substrates possessing amino group [7]. As is known, it is precisely these organs, where metabolism of thyroid hormones predominantly occurs, in particular, the processes of their deiodination [4, 9].

Keywords: hypothyroidism, phenotype, metabolism

At the same time, the works of various researchers demonstrate the impact of hypothyroidism on the development of pathological processes and diseases other organs and systems [6]. Hence, because the changes in various biochemical parameters of blood may serve as markers of diseases, occurring in thyroid pathology, it becomes an important task to study those changes in connection with phenotype of acetylation [1, 2].

The aim of the work was to identify differences and patterns in the dynamics of protein metabolism, in accordance with acetylation phenotype in experimental hypothyroidism.

Materials and methods of research

The experiments were carried out on 60 rats with body mass of 180-220g, which were divided into two equal by the number of animals main groups, depending on the type of acetylation: α - slow and β -fast metabolizers (acetylators). An experimental hypothyroidism was simulated in both experimental groups by introducing mercazolil at a dose of 5 mg, given over 14 days [3]. Each group in turn was divided into 5 equal subgroups, depending on the periods of study. In this way, the group of α - "slow" metabolizers (acetylators) was divided into the following subgroups: I_{α} - intact, $II_{\alpha} - 4^{th}$ hour of study, $III_{\alpha} - 1^{st}$ week of study, $IV_{\alpha} - 2^{nd}$ week of study, $V_{\alpha} - 3^{rd}$ week of study. Accordingly, the group β – "fast" metabolizers (acetylators) consisted of: I_{β} – intact, II_{β} – 4th hour of study, III_{β} – 1st week of study, IV_{β} – 2nd week of study, V_{β} – 3rd week of study. The dynamics of values of thyroid hormones, reflecting the development of pathological process, were evaluated as within the given subgroups separately, considering the rate and type of acetylation, as well as in associate $I_{\alpha\beta}$, $II_{\alpha\beta}$, $III_{\alpha\beta}$, $IV_{\alpha\beta}$ and $IV_{\alpha\beta}$ groups regardless of acetylation phenotype. The results of this comparison are shown in Table 2. Likewise, the data of two analogous subgroups, with corresponding terms but different rate of acetylation, were combined and their statistically processed results were compared to those of other combined groups with different periods of study. The comparisons are presented in Table 1, which reflect the changes of the level of thyroid hormones in groups I $\alpha\beta$ I_{*a* β}, II_{*a* β}, III_{*a* β}, IV_{*a* β} and IV_{*a* β}.

Also, the changes in the concentration of total protein and albumin were examined in the above terms and the parameters were studied as in combined groups, consisting of α and β subgroups (with phenotype of "slow" and "fast" acetylation of metabolic system of body, respectively), as well as within given subgroups separately and the reliability of differences between them were examined.

Acetylation phenotype was identified by the conventional method [1]. Biochemical parameters of concentration of substances in serum were determined by semiautomatic biochemical analyzer "Mindray BA88" (China), with test system "Human" (Germany) [5].

Statistical data processing was performed using Student's criterion using Excel and Biostat. The criterion for statistical significance was the importance of P < 0.05.

Results of research and their discussion

Changes of the blood biochemical parameters, characterizing intensity of anabolic processes were observed at various stages of the modelled experimental hypothyroidism. In addition, there were changes in protein metabolism observed (Table 1). Thereby, the level of total protein in the 4th hour, the 1st, 2nd and 3rd weeks was significantly lower in respect to the index of animals from intact group by 28,1%, 40,4%, 33,5% and 54,1% respectively. Total protein concentration on the 1st and 3rd weeks of observation of experimental pathology, compared to the 4th hour, was higher with levels of 9,6% and 54,1%, respectively. Likewise, the levels of total protein had lower values on the 3rd week compared to those in the 1st and 2nd weeks, with 9,7% and 15,4% respectively.

Albumin concentration in the 4th hour and on the 3rd week of the experiment was lower relative to the values of this parameter in animals from intact group, by 17,8% and 10,4%. As compared with the 4th hour of observation, levels of albumin were significantly higher on the 1st and 2nd weeks by 16,2% and 16,8%. At the same time, with respect to the 1st and 2nd weeks of observation, albumin concentration on the third week was significantly lower by 9,0% and 9,5%. In general, the levels of albumin had lower values in modelled experimental hypothyroidism than the levels in the intact group.

As a result of the analysis of the results obtained in groups, separated according to the acetylation phenotype, statistically significant differences were found in the studied parameters (Table 2).

Table 1

Changes of individual biochemical parameters in blood of rats with modelled hypothyroidism $(M \pm m)$

Studied groups	Total protein (g/l)	Albumin (g/l)
$I_{\alpha\beta}$ groups of intact animals	$67,50 \pm 2,0$	$31,60 \pm 0,9$
$II_{\alpha\beta}$ groups (4 th hour)	$52,68 \pm 0,74*$	26,83 ± 0,60*
$III_{\alpha\beta}$ groups (1 st week)	$48,05 \pm 0,86^{*}$	31,17 ± 0,18^
$IV_{\alpha\beta}$ groups (2 nd week)	$50,53 \pm 0,78*$	$31,33 \pm 0,18^{\wedge}$
$V_{\alpha\beta}$ groups (3 rd week)	43,80 ± 0,47^#&	28,60 ± 0,48*^#&

N o t e s : * – significant difference (P < 0.05) when comparing results with those in the group of intact animals; ^ – same in comparing results with those in group 1; # – same in comparing results with those in group 2; & – same when comparing results with those in group 3; \$ – same in comparing results with data in the same group to a subgroup of slow acetylators.

Table 2

Changes in individual blood biochemical parameters rat modeling of the experimental hypothyroidism subgroup with α - and β -acetylating phenotype (M ± M)

Groups, (term of study)	Subgroups	Total protein (g/l)	Albumin (g/l)
$I_{\alpha\beta}$, (intact)	I	$68,4 \pm 2,1$	$32,3 \pm 1,0$
~p	Ι _β	$66,7 \pm 1,9$	$31,1 \pm 0,8$
$II_{\alpha\beta}$, (4 th hour)	Π_{α}	56,10 ± 0,35*	$25,33 \pm 0,75*$
	Π_{β}	49,27 ± 0,69*\$	28,33 ± 0,41*\$
$III_{\alpha\beta}, (1^{st} week)$	III _a	44,37 ± 0,21*^	31,00 ± 0,18^
wb	III _g	51,73 ± 0,95*\$	$31,33 \pm 0,21^{\circ}$
$IV_{\alpha\beta}$, (2 nd week)	IV	45,27 ± 0,09*^#	30,67 ± 0,21^
ap	IV _β	55,80 ± 0,23*^#\$	32,00 ± 0,01^#\$
$V_{\alpha\beta}, (3^{rd} week)$	V	45,27 ± 0,09*^#	30,67 ± 0,21^
άρ	V _β	42,33 ± 0,61*^#&\$	26,53 ± 0,24*^#&\$

N o t e s: *-significant difference (P < 0.05) when comparing results with those in the group of intact animals; ^ - same when comparing results with those in group 1; # - same when comparing results with those in group 2; & - same when comparing the results with those in group 3; \$ - same when comparing results with the data in the same group with α -subgroup of unstable metabolizers.

In the 4th hour, the 1st, 2nd and 3rd weeks the level of total serum protein was lower as compared with the values of animals in intact group in the subgroups of α -acetylation phenotype by 21,9%, 54,2% 51,1 and 51,1% respectively, and was lower by 35,4%, 28,9%, 19,5% and 57,6% respectively in animals with β - phenotype of metabolism. From obtained results it is clear that the differences in early terms (in the 4th hour) are more pronounced among subgroups with β -acetylation phenotype, but more pronounced differences at later terms, which invariably remain at around the same values in respect to intact animals, were observed among subgroups with α - slow phenotype of metabolism. At the same time, in the animals

with β - phenotype of metabolism the changes relatively to I_{β} subgroup are characterized by greater lability and the difference in values of the 1st and 2nd weeks is less significant, which becomes more obvious when compared with values of animals with α – "slow" type of metabolism, significantly increasing only at latest terms, reaching and even slightly exceeding the analogous difference in subgroups with α -acetylation phenotype. In comparison with II subgroup, lower values of total protein were observed in subgroups with α -acetylation phenotype on the 1st, 2nd, and 3rd weeks by 26,4%, 23,9% and 23,9%, respectively. Concerning II_{β} subgroup, in subgroups with the according type of metabolism, there were no significant

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changes observed in total protein level in the 1st week, an increase by 13,3% in the 2nd and reduction by 16,4% in 3rd week. Comparing III_a subgroup, in the subgroups with respective type of metabolism, lower by 2,0% levels of total protein were observed as on the 2nd as well as on the 3rd weeks of experiment, and as compared to subgroup III_β the levels were higher by 7,8% and lower by 22,2%, respectively. When comparing groups with α and β phenotypes of acetylation, statistically significant changes of the 2nd and 3rd weeks of study could be observed only in subgroup V_β, where the level of total protein was 31,8% lower than in IV_β subgroup.

When comparing subgroups of same terms but different rate of metabolism, in subgroups with β -acetylation phenotype relatively to α – "slow" metabolizers, there were a decrease of 13.9%, an increase of 16,6%, 23,3% and 6.9% reduction in total protein levels at 4 hour, 1st, 2nd and 3rd week terms, respectively. There were no significant differences found when comparing the total protein of intact animals with different types of metabolism.

The dynamics of the changes in the concentration of total protein had some similarity, in terms of the presence of statistically significant differences, the number of which grew with terms, but the most marked differences were seen in the ultimate terms of experiment. In line with this, significant differences in the total protein concentrations, respectively to the 4 hour study, in subgroups with β – "fast" type of metabolism appeared at later terms than in animals with α -phenotype, but more marked differences at the latest term were observed in the subgroup with β - acetylation phenotype.

Compared to the values of intact animals, the level of total protein in the subgroups with α - and β -acetylation phenotype was lower as in the early as well as in later terms. However, while at 4 hour period and 3 week period of experiment the value of this parameter was higher in the subgroup with α -acetylation phenotype than in animals with β -phenotype, the situation was quite different at the 1st and 2nd weeks.

Common ways of transformation of amino acids in the liver include deamination, transamination, decarboxylation and biosynthesis of amino acids. Changes in the concentration of total protein may indicate that one or more of the above ways of protein metabolism are impaired [4].

In the subgroups with α -acetylation phenotype, when compared with the values of intact animals, a statistically significant reduction in albumin level of 27,5% was observed at 4 hour period, however there were no significant changes observed on the 1st, 2nd and 3rd weeks. The concentration of albumin in

subgroups with β – "fast" acetylation phenotype was lower by 9,8% on the 4th hour of the experiment and by 17,2% on the 3rd week. When compared with the values of the 4th hour period in subgroups with α -acetylation phenotype, levels of albumin at the 1st, 2nd and 3rd weeks were higher by 22,4%, 21,1% and 21,1%, respectively, and were higher by 10,6%, 13,0% and lower by 6,8%, respectively in subgroups with β – "fast" acetylation phenotype, examined by analogy within same periods of the experiment. When compared with the 1st week of the study, the concentration of albumin in the subgroups of animals with α - phenotype of metabolism did not significantly change at 2nd and 3rd weeks and in the groups with β -acetylation phenotype, relatively to the same periods, were higher by 2,1% and lower by 18,1%, respectively. In relation to the 2nd week of the experiment, on the 3rd week of study in subgroups with β -acetylation phenotype there was a decrease by 20,6% while in subgroups with α -acetylation phenotype within same periods of study there were no significant changes.

Statistically significant differences of albumin concentration were observed when comparing the subgroups with different acetylation phenotype within same term. Thereby, in subgroups with β – "fast" acetylation phenotype with respect to subgroups with α – "slow" type of metabolism the albumin concentration was higher by 11,8% and 4,3% at 4 hour and 2 week periods and lower by 15,6% on the 3rd week. There were no significant changes observed between subgroups of intact animals and of the 1 week of the experiment.

A considerable similarity of differences between the various terms can be noticed in studying the dynamics of changes of albumin concentration at 4 hour and 1 week of study, which occur in subgroups with different acetylation phenotype. Only the 2nd and 3rd weeks of the experiment reveal a high evidence of the changes and a number of statistically significant differences in the subgroups with β -acetylation phenotype, which become more obvious through making comparison with earlier periods. In general, the values of albumin were lower at all stages of study, in relation to those of intact animals, reaching the lowest values at early terms (4 hour term) of experimental hypothyroidism in the subgroup with α – "slow" type of metabolism, and at latest terms (3week) in the subgroup with β – "fast" subtype of acetylation.

As is generally known, albumin is not only an important component of protein metabolism, but is also interconnected with metabolism of lipids, in particular, the transport of fatty acids, which once again shows the importance of studying this indicator [4, 9]. Thus, when studying individual parameters that characterize the protein-synthetic function of the liver, it can be concluded that there are statistically significant differences in the dynamics of changes of studied parameters between the subgroups with α - and β -acetylation phenotypes, with more marked changes occurring in the subgroups with β – "fast" phenotype of metabolism. It should also be noted that significant differences of studied parameters, at comparing different terms of study, as well as making comparison among subgroups of same term, occur in the later stages of the modelled experimental hypothyroidism.

Conclusion

1. Indicators, representing intensity of the protein-synthetic function of liver and activity of anabolic processes of body in experimental hypothyroidism, are characterized in general by a decrease of parameters, compared to values of intact animals.

2. It is characteristic for the animals with β -acetylation phenotype to have more marked changes in the total protein and albumin than in subgroups with α - phenotype of metabolism at late terms of experimental hypothyroidism.

3. In groups with α -acetylation phenotype in the early stages of experiment, there is a considerable number of statistically significant changes in the concentration of total protein and albumin observed than in subgroups with β -acetylation phenotype. However, subsequent dynamics of these changes is characterized by greater stability.

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VARIATIONS OF VALUES OF LIVER DETOXIFICATION IN EXPERIMENTAL HYPOTHYROIDISM, DEPENDING ON ACETYLATION PHENOTYPE

Ahmadzhonuv A.K.

Tashkent Pharmaceutical Institute, Tashkent, e-mail: altirar@rambler.ru

Owing to advances in diagnosis of thyroid disease and accumulation of new information about various aspects of its diagnosis, clinical course and management, the question of interconnection between thyroid and non-thyroid pathologies does not lose its relevance. [8] A wide prevalence of thyroid disease only increases the value of research carried out in this direction. In particular, in hypothyroidism, which is one of the most commonly diagnosed thyroid diseases, biochemical parameters characterizing functional activity of liver may serve as valuable diagnostic parameters [6]. As is well known, according to various studies, liver and intestines, which are the central organs of biotransformation of overwhelming majority of substances that enter the body, are directly involved in the metabolism of thyroid hormones [4, 5, 7]. Moreover, studies dedicated to the dependence of rate and completeness of metabolism of substances on the phenotype of acetylation, without which it is impossible to carry out a full-fledged modern study of thyroid pathology, are gaining popularity [1, 2].

Keywords: liver, hypothyroidism, phenotype

The purpose of current work was to identify differences and patterns in dynamics of blood biochemical parameters, characterizing the activity of the detoxifying function of liver and the intensity of catabolism in experimental hypothyroidism, in accordance with the phenotype of acetylation.

Materials and methods of research

The experiments were carried out on 60 rats with body mass of 180-220g, which were divided into two equal by the number of animals main groups, depending on the type of acetylation: α - slow and β -fast metabolizers (acetylators). An experimental hypothyroidism was simulated in both experimental groups by introducing mercazolil at a dose of 5 mg, given over 14 days [3]. Each group in turn was divided into 5 equal subgroups, depending on the periods of study. In this way, the group of a- "slow" metabolizers (acetylators) was divided into the following subgroups: I_a – intact, $II_a - 4^{th}$ hour of study, $III_a - 1^{st}$ week of study, $IV_a - 2^{nd}$ week of study, $V_a - 3^{rd}$ week of study. Accordingly, the group β – "fast" metabolizers (acetylators) consisted of: I_{β} – intact, II_{β} – 4th hour of study, III_{β} – 1st week of study, IV_{β} – 2nd week of study, $V_{\beta} - 3^{rd}$ week of study. The dynamics of values of thyroid hormones, reflecting the development of pathological process, were evaluated as within the given subgroups separately, considering the rate and type of acetylation, as well as in associate $I_{\alpha\beta}$, $II_{\alpha\beta}$, $III_{\alpha\beta}$, $IV_{\alpha\beta}$ and $IV_{\alpha\beta}$ groups regardless of acetylation phenotype. The results of this comparison are shown in Table 2. Likewise, the data of two analogous subgroups, with corresponding terms but different rate of acetylation, were combined and their statistically processed results were compared to those of other combined groups with different periods of study. The comparisons are presented in Table 1, which reflect the changes of the level of thyroid hormones in groups $\begin{array}{c} I\alpha\beta \ I_{\alpha\beta}, II_{\alpha\beta}, III_{\alpha\beta}, IV_{\alpha\beta} \ \text{and} \ IV_{\alpha\beta}. \\ The changes in the concentration of urea, creatinine, \end{array}$

The changes in the concentration of urea, creatinine, total protein and albumin were examined in the above terms and the parameters were studied as in combined groups, consisting of α and β subgroups (with phenotype of "slow" and "fast" acetylation of metabolic system of body, respectively), as well as within given subgroups separately and the reliability of differences between them were examined.

Acetylation phenotype was identified by the conventional method [1]. Biochemical parameters of concentration of substances in serum were determined by semiautomatic biochemical analyzer "Mindray BA88" (China), with test system "Human" (Germany) [5].

Statistical data processing was performed using Student's criterion using Excel and Biostat. The criterion for statistical significance was the importance of P < 0.05.

Results of research and their discussion

Changes of the blood biochemical indicators, such as urea and creatinine, which characterize intensity of catabolic processes, were observed at various stages of the modelled experimental hypothyroidism.

In this way, the level of urea in the 1st week of study was significantly higher than that indicator of animals from intact group, which was higher by 48,2%, and with respect to the in the 4 hour experimental group of modelled thyroid pathology by 43,4% (Table 1). The level of this indicator in the 2nd week with respect to indicators of animals from intact group and animals from 4 hour group was higher by 48,7% and 43,9%, respectively; the analogous difference in the 3rd week was 64,1% and 58,8%.

Significantly high levels of creatinine were observed only in the 3rd week of experimental hypothyroidism, relative to the indices of animals of intact group, 4th hour, 1st and 2nd weeks, were respectively, 23,6%, 33,9%, 22,1 and 23,8%. It is clear from the provided data that there is a more pronounced difference in the 3rd week of experiment, with respect to the parameters of 4th hour, 1st, 2nd weeks of study, indicating lower serum creatinine values at an early period of experimental hypothyroidism.

As a result of the analysis of the results obtained in groups, separated according to the acetylation phenotype, statistically significant differences were found in the studied parameters (Table 2). In this way, the level of urea in animals who were β – fast metabolizers (acetylators) at 4 hour of the study was higher by 47,4% relative to the parameters of intact animals with a similar phenotype, and on the 1st, 2nd and 3rd weeks, this difference was 52,3%, 48,9%

and 76,0%. In the subgroup with α – "slow" metabolism phenotype (acetylation), a statistically significant increase in the concentration of urea compared with intact animals was observed only on the 3rd week of the study and was 40,0%.

Table 1

Changes in individual blood biochemical	parameters of rats in modelled hypothyroidism (M	$\pm m$)

Studied groups	Urea (mmol/L)	Creatinine (mcmol/L)
$I_{\alpha\beta}$ groups of intact animals	$3,90 \pm 0,75$	$57,20 \pm 2,6$
$II_{\alpha\beta}$ groups (4 th hour)	$4,03 \pm 0,87$	$52,78 \pm 2,5$
$III_{\alpha\beta}$ groups (1 st week)	$5,78 \pm 0,19*^{10}$	$57,90 \pm 1,08$
$IV_{\alpha\beta}$ groups (2 nd week)	5,80 ± 0,12*^	$57,08 \pm 0,90$
$V_{q\beta}$ groups (3 rd week)	6,40 ± 0,30*^	70,68 ± 1,80*^#&

N o t e s : *-significant difference (P < 0.05) when comparing results with those in the group of intact animals; ^- same in comparing results with those in group 1; #- same in comparing results with those in group 2; & - same when comparing results with those in group 3; \$ - same in comparing results with data in the same group to a subgroup of slow acetylators.

Table 2

Changes in individual blood biochemical parameters rat modeling of the experimental hypothyroidism subgroup with α - and β -acetylating phenotype (M ± m)

Groups, (term of study)	Subgroups	Urea (mmol/L)	Creatinine (mcmol/L)
$I_{\alpha\beta}$, (intact)	Ι _α	3,8 ± 0,8	56,4 ± 1,8
	I_{β}	$4,05 \pm 0,65$	58,1 ± 2,1
$II_{\alpha\beta}$, (4 th hour)	Π_{α}	$2,10 \pm 0,07$	35,07 ± 2,47*
	II _β	5,97 ± 0,05*\$	70,50 ± 0,09*\$
$III_{\alpha\beta}$, (1 st week)	ΠII _α	5,40 ± 0,12^	50,97 ± 0,14*^
	III _β	6,17 ± 0,09*\$	64,83 ± 0,94*^\$
$IV_{\alpha\beta}$, (2 nd week)	IV _α	5,57 ± 0,02^	51,33 ± 0,16*^
	IV _β	6,03 ± 0,10*\$	62,83 ± 0,70^\$
$V_{\alpha\beta}$, (3 rd week)	V _a	5,67 ± 0,05*^	56,33 ± 1,04^#&
	V _β	7,13 ± 0,06*^#&\$	85,03 ± 0,48*^#&\$

N o t e s : * – significant difference (P < 0,05) when comparing results with those in the group of intact animals; ^ – same when comparing results with those in group 1; # – same when comparing results with those in group 2; & – same when comparing the results with those in group 3; \$ – same when comparing results with the data in the same group with α -subgroup of unstable metabolizers.

Compared to the 4th hour studies, in subgroups with β – "fast" phenotype of (acetylation) metabolism, a statistically significant increase in the level of urea was observed in the 3rd week of experiment and comprised 19,4%. In III_a, IV_a, V_a subgroups, relatively to II_a subgroup, the urea concentration was higher by 2,6, 2,7 and 2,7 times, respectively. In the subgroup with β -acetylation phenotype, higher rates were observed at ultimate terms (3rd week) of experiment compared to the 1st and 2nd weeks, which were 15.6% and 18.2% higher.

Statistically significant differences in the levels of urea among subgroups with different

phenotypes of acetylation, except intact animals, were observed in almost all terms – on the 4th hour, 1st, 2nd and 3rd weeks of study and their values were higher by 184,3%, 14,3%, 8,3% and 25,7% respectively, in subgroups with phenotype of β -acetylation compared to phenotype of α -acetylation. Surveying the results of the study, it should be noted that there were insignificant of differences between subgroups with different rates of metabolism in the development of thyroid pathology and only a slight increase in these differences at ultimate term.

The obtained results demonstrate that the concentration of urea at 4th hour term of study

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decreased insignificantly in subgroups with α -acetylation phenotype, whereas a statistically significant increase in this parameter was present in subgroups of animals with β -phenotype.

In all subsequent terms of studies, there were higher levels of urea relatively to the 4th hour with subgroups of α -phenotype. At the same time, there were higher levels of urea relatively to intact animals in subgroup with β - phenotype, compared to the concentration of it in α -subgroups. However, the indicator was not noted to change in dynamics, except for the ultimate term, where differences relatively to earlier terms were more pronounced compared to the differences in the values of urea in subgroups with α -acetylation phenotype. In general, dynamics of the urea level may suggest about more active changes of this indicator in the subgroup of β - "fast" metabolizers, compared to metabolizers with α - "slow" phenotype.

As is known, the basic way of neutralization of highly-toxic ammonia in the liver, which results from degradation of amino acids, is the formation of urea that is excreted with urine as a final product of protein metabolism in the body. The observed changes in the urea level may imply the extent of influence of experimental hypothyroidism, as on the intensity of catabolic processes as well as on the efficiency of the detoxifying ability of liver, associated with phenotype of acetylation.

As concerning the level of creatinine, subgroup with α -acetylation phenotype had lower by 60,8% values at 4 hour term, and in the subgroup with β - "fast" phenotype of metabolism was by 21,3% higher, compared to indicators of intact animals. In comparison with indicators of intact animals in subgroups with α - and β -phenotype creatinine concentration at the 1st week of study was by 10,7% lower and 11,6% higher, respectively. On the 2nd week of experiment, with respect to indicators of intact animals, statistically significant differences occurred in the subgroup with α -phenotype, where serum creatinine was 9,9% lower and at 3^{rd} week in animals with β -phenotype where this parameter was greater by 46,4%. Compar-ing indicators within both "fast" and "slow" subgroups the results of creatinine concentration at 4-hour period were 45,3% higher and 8,7% lower, while in the 2nd and 3rd weeks of experimental pathology, relative to the same period of comparison, 46,4% higher and 12,2% lower, respectively, and by 60,6% and 82,3% higher. Compared with the 1st week results, there were no significant changes observed in IV_{α} and IV_{β} subgroups, and in V_{α} and V_{β} subgroups creatinine level was higher by 10,5% and 31,2%, respectively. On the 3rd week, the levels of creatinine relatively to those in the 2nd week of experiment were by 9,7% higher in

the subgroups with α -acetylation phenotype, and by 35,3% higher in the subgroup with β -"fast" metabolism.

Analizing concentration of creatinine in subgroups with β -phenotype with respect to indicators of α - "slow" metabolizers, significant changes were observed at 4 hour term, where their concentration was twofold higher. On the 1st, 2nd and 3rd weeks this difference comprised 27,2%, 22,4% and 50,9%. As can be noted from the above given results, the biggest difference between the two groups with different metabolic rates was observed in the early and late terms of experimental hypothyroidism.

In the study of changes of creatinine concentration at the earliest term of experiment (4 hour), in comparing the level of these parameters with intact animals, it should be noted decrease of their values was observed in the subgroups with α - "slow" phenotype, and, this trend preserved almost at all study periods, except for the ultimate, where statistically significant differences were not detected. By contrast, creatinine concentration in groups with β - acetylation phenotype increased at all stages of experimental hypothyroidism. The results of changing concentrations of creatinine indicate that phenotype of acetylation has a significant impact on its level in the blood serum in experimental hypothyroidism.

As is known, a significant portion of nitrogen, produced by the process of degradation of amino acids and formed from creatine and creatine phosphate, is excreted from body in the form of creatinine. Thus, creatinine, along with urea, is an important indicator of protein degradation. [9] Significant changes in the direction of creatinine concentration between subgroups with different acetylation phenotype suggest about differences in the mechanisms of utilization of products of protein degradation, which animals have depending on the type and rate of their metabolism in conditions of experimental hypothyroidism. It is known that normally, from total amount of nitrogen excreted with urine fraction of that in urea accounts for about 85%, in creatinine – about 5%, the remaining percentage is distributed among ammonium salts, uric acid and other compounds [4]. The obtained results suggest not only changes in the concentrations of urea and creatinine in general, but also their relationship to each other.

In support of what was said, ratios of urea to creatinine in subgroups with α -acetylation phenotype in intact animals, at 4-hour, 1-week, 2-week and 3-week terms of experimental hypothyroidism were 67,4, 58,9, 105,9, 108,5 and 100,7%, respectively. An analogous correlation between urea and creatinine levels in the groups with β -acetylation phenotype at the same terms of study gave following ratios: 69,7, 84,7, 95,2, 96,0 and 100,7%, respectively. As seen from the above values, if in α -subgroups this ratio drops sharply at early terms, then by the 1st week it sharply increases, growing to 2nd week and slightly decreasing at ultimate term. In groups with β -phenotype, by contrast, even through all stages increase of values of urea to creatinine was noted. In general, comparable in intact with different phenotype animals values of the ratio of urea to creatinine become significantly different at 4 hour term, which with the development of experimental hypothyroidism slightly level out, disappearing toward the ultimate term of experiment.

The results obtained in studying individual parameters, which characterize the activity of the processes of protein degradation and liver detoxification in experimental hypothyroidism, demonstrate a statistically significant difference in the dynamics of changes in the values of these parameters between the subgroups with α - and β -acetylation phenotypes. The most pronounced differences of values among subgroups are shown to be in the group with β - "fast" phenotype of metabolism, unlike those found in a group with α -phenotype of metabolic activity. It should also be noted that the most significant differences of the studied parameters as comparing various periods of study, as well as between subgroups of same terms, appear in the later stages of the simulated experimental hypothyroidism.

Conclusion

1. Experimental hypothyroidism in dynamics, in general characterized by increased concentrations of parameters, which characterize the intensity of protein degradation and detoxification function of liver.

2. From the studied in experimental hypothyroidism parameters the most pronounced differences observed among subgroups with α - and β -acetylation phenotypes were in the levels of creatinine.

3. It is characteristic for animals with β -acetylation phenotype to have more marked changes in the values of creatinine and urea at ultimate terms of studied experimental hypothyroidism, than for animals with α -acetylation phenotype.

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Materials of Conferences

QUANTITATIVE ASSESSMENT OF NUCLEAR ABNORMALITIES IN BUCCAL CELLS OF ROSTOV-ON-DON RESIDENTS

Abakumova L.V., Roginskaya A.A. Southern Federal University, Rostov-on-don, e-mail: alara2008@mail.ru

Micronuclear test is one of the most short-term and practical methods in cytogenetics. The correlation detected between the results of the micronuclear test and chromosomal aberrations analysis allows us to consider the relative amount of nuclear violations as the objective bioindicator of environmental influences. Thanks to the micronuclear test the mutagenic activity test of a large number of chemical, physical and biological agents was conducted (Kozhura and others, 2005; Butorina, 2007; Pavlov and others, 2007; Sycheva, 2012; Zemlyanova, Shcherbina, 2013; Byahova and others., 2014; Khakhulina, Kurchatova, 2014;), and in recent years micronuclear test is used as a noninvasive rapid method of human genome stability assessment (Kalaev and others, 2008, 2010, 2012; Korsakov and others, 2012; Meyer and others, 2014;). The purpose of this study was to determine the background values of the cytogenetic homeostasis indices of large modern city residents with the help of the micronuclear test. We examined different age groups of residents of Rostov-on-don: 80 school children of 11-12 years (group 1), 35 students of 18 to 23 years (group 2) and 52 adults 30-55 years (group 3). All surveyed had nuclear abnormalities in exfoliating cells of the buccal epithelium. Among nuclear defects the most frequent was the intussusception, ambiguous nucleus, microkernel, not so frequent were nucleus strangulation and caudate nucleus. The relative amount of nuclear abnormalities (%) varied in the first group from 2 to 18, on average $6,86 \pm 0.44$, in the second group it varied from 3 to 26, on average $8,17 \pm 0,86$. In the third group – from 2 to 28, on average 8.26 ± 0.91 . Significant differences in the values of the specified index, depending on age and gender were not found. The comparison of the obtained results with other authors data (Zhuleva and others, 1996; Butorin and others, 2000; Korsakov and others, 2012) showed that the background values of the cytogenetic indices of large industrial cities residents are close enough. The fact is that among the modern inhabitants of large industrial centre the number of genetically defective cells is significantly greater than that one among the residents of Vietnam villages as relatively clean ones (1,98%) and processed by phytotoxic pollutants in the 60-ies of the 20th century (3,79%) (Zhuleva and others, 1996). In our opinion, this can once again indicate the extremely unfavorable ecological situation in large cities, which not only threaten the current health of the population, but also violates the genetic homeostasis.

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THE ASSESSMENT OF FUNCTIONAL CAPABILITIES OF YOUNG SWIMMERS AND GYMNASTS

Khrenkova V.V., Abakumova L.V., Roginskaya A.A., Nedopekina A.S., Zhuravleva M.V.

Southern Federal University, Rostov-on-Don, e-mail: alara2008@mail.ru

An important aspect of sports promotion is the activation of physical education of children of preschool and school institutions with the obligatory assessment of their functional capabilities. The aim of this work was to evaluate the effectiveness of young athletes' trainings according to the indicators of the functional status of their body systems and the development of their physical qualities. 123 girls of different ages took part in the study. One group did either gymnastics from 1 to 3 years or swimming for 2 years in addition to their basic physical trainings in preschool or school. Another group of girls had their physical trainings in preschool or school only. The assessment of the impact of physical culture and additional sports activities was carried out by the indices of height and weight, cardiointervals and physical qualities.

The analysis has revealed:

• the harmonious physical development of almost all the girls (of preschool and school) who were involved in gymnastics trainings. The disharmonious development of girls who were and were not involved in sports, can be probably explained by the peculiarities of the training process, which does not correspond the age capabilities of the organism, or by the metabolic syndrome (in case of body weight excess), or by the level of activities which is below the threshold quantity (in the group of therapeutic gymnastics – 1 time per week for 60 minutes);

• the best physical state according to the physical qualities indicators in the groups of gymnastics trainings. In the "swimmers" group the weak point was the forming of strength qualities;

• the tachycardia of a significant number of all girls (the best results had the group of girls training in rhythmic gymnastics, the worst ones had the first-year schoolgirls). This can be probably explained by the school factors – adaptation to a new lifestyle, studying activities, and the gap between the physical activities and the functional capabilities of the child's body.

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THE FATAL DELUSIONS IN UNDERSTANDING OF GENERAL EDUCATION CHALLENGES IN THE FIELD OF PHYSICAL CULTURE

Lukyanenko V.P.

The North – Caucasus Federal University, Stavropol, e-mail: info@ncfu.ru

Ten major delusions in understanding challenges of teaching the "Physical Culture" general education school subject in the system of the general secondary education in Russia have already been presented. Widely their dissimilated, as among both practitioners, well as researchers, scientists and scholars, having concerned with the school physical culture challenges, has a very negative impact on the performance by this school subject of their educational functions and its effectiveness. These are the delusions on the issues: the inclusion of the main motive of the "Physical Culture" school subject in the number of the basic general education disciplines and its main purpose in the general system of the general education; on the values of volume and the intensity of physical activity in the classroom; on the place and the role of physical culture school subject at the lesson in the general system of the forms of the schoolchildren physical education in schools; on the role and the methods of teaching the theoretical section of the program; on the priority directions of the content of the training sessions in schools; on the essence comprehension of the educational orientation of the physical culture lessens; on the place and the role of the special knowledge of sports in its content and the methodological foundations of their teaching, the ratio of the motive and cognitive components in its content; on the major reason of the low efficiency of the schoolchildren physical education; on the role of the independent and self - studies of the physical exercises; on the main factor, having conditioned the leading role of the physical culture lesson in the system of the physical education forms; on the strategy and tactics of the challenges solving recreational and health - improving nature. The presented above delusions are completely discredited the existing system of the general education in the field of the physical culture. Moreover, they are led to the conclusion, that the full of value general education on this school subject, as in Russia, well as in the most other countries of Europe and the World is virtually absent.

Keywords: delusions, general education, "physical culture" school subject, method of teaching, content of education, self - study

The delusion, which is shared by majority, does not cease to be a mistake.

L.N. Tolstoy

The unsatisfactory state of the general education in the physical culture, in my opinion, is conditioned by the presence of a number of widespread and unusually well – established delusions in the understanding of its essence. Most of them are closely interrelated, mutually dependent on each other, and they are the quite serious impediment in its further development.

So, one of the most actual and urgent challenges in the present time is all the possible measures taking for the hidden and obvious delusions removal, concerning the essence of the "Physical Culture" general education school subject, which is necessary for more efficient use of its real and potential possibilities.

Thus, the delusion on the issue of the main motif is included the "Physical Culture" school subject in the number of the basic general and educational disciplines.

This is the most significant delusion, which is a kind of the "fundamental" basis and for many the others. The gist of it is as follows.

The fact is the well – known one, that in Russia the "Physical Culture" school subject was given the status of the <u>basic general education</u> discipline many years ago.

Moreover, in accordance with the curriculum and the content of education in the upper senior stage of the secondary school, this school subject has already been included in the list of the most significant educational and academic disciplines of the federal component, which should be taken their place in the curriculum of any of the profiles, regardless of their specificity.

The federal basic curriculum (BC) is practically suggested such their minimum set: "Russian language", "Literature", "Foreign language", "Mathematics", "History", "Social Science", "Natural History", and "Physical Culture". So, the rest school subjects are being studied by their choice.

At first glance, it would be seemed, what could be better still to desired, in regard to this school subject. But the euphoria by this reason, it is very impending the realization of the fact, that in the whole history of the general education system existing, exactly, this is its function - the general education one, this school subject actually has never been performed! It does not perform it and at the present time. If we start from the positions of the principle, the common approach to the assessment of the significance of the most important general education school subjects, then it is surprising, that this is the very important circumstance has not been the obstacle for the inclusion of the "Physical Culture" school subject in their list.

In my opinion, the whole thing here "the double standards", in relation to the "Physical Culture" school subject and the deep delusion on its content essence and the nature of the main mission, having laid in the motive basis of its inclusion in the invariant component of BC.

The essence of the delusion is due to, on the one side, the believe in the general education inferiorities of this school subject, which ostensibly is connected to its particular nature essence.

One the other side, it is as if they "forgive" it this disadvantage against the background of the solid demonstration of the confidence in the fact, that it could be more than compensated by other significant function fulfillment – its indispensible role in the further promoting <u>health and</u> <u>the motor preparedness</u> of the schoolchildren, through the direct trains and health effects, having achieved, as the result of the physical activity at the physical training lessons.

Having presented in our researches, the materials are allowed you to be seen the very different and, in many ways, the directly opposite picture pattern [V.P. Lukyanenko, 2007, 2008, 2009, 2012, 2014].

They are suggested, that such ideas and presentations on the possibilities and functions of the "Physical Culture" school subject are in the direct relation to its general educational potential of **the deeply flawed**, and in relation to the role of the further promoting health and motor preparedness increase are very, very **ex**aggerated.

Never the less, the "Physical Culture" school subject inclusion into the invariant part of BC – is <u>absolutely the right decision</u>. Only the grounds and reasons for this should be quite different.

So, the inclusion into the number of the basic disciplines BC must be due primarily awareness of the availability of this school subject matter is **unique** by its nature and **the essence of the most powerful on the content** of the general educational potential, which are the envy of any of so called, the "real" general education school subjects and disciplines.

The most significant, unique peculiarity and unprecedented specific feature of the "Physical Culture" school subject is not consisted in the motor coaching procedures (for which it is "appreciated", above all), and in the present state of his potentials for the formation of the **special competences**, **expertizes**, **practical and methodological skills, ways of knowing your own organism, and expedient effect on its functions.** So, all this can only be realized in the process of its teaching, as the <u>full-fledge</u> comprehensive general and education discipline.

At the same time, the originality and uniqueness of this school subject content is expressed in the fact, that it is directed not so much to the mastering of ways to convert the surrounding world, how many – on the student's own(!), on the cognition and mastering of ways of purposeful influence on the processes of further improving his own physical nature, and that is provided the basis for his own transformation and, moreover, the most significant condition of **the successful adaptation to any kind of useful socially activity.**

Exactly, all these unique features and unprecedented possibilities of the "Physical Culture" school subject, having consisted in its **general educational potential**, and not the illusions about the miraculous direct effect of the physical activity in the process of the lesson on the health and physical activity, and they should be considered, as the main motive of its inclusion in the invariant part of BC. In this regard, it is significant to pay attention to the fact, that only with such understanding its functions and the purpose of the "Physical Culture" school subject can be saved from the inferiority syndrome and the role of the "black sheep" in the invariant disciplines system.

The Delusion on the Issue of Volume and Physical Activity Intensity Role in the Classroom.

The above – presented delusion has been saved, as the basis for a number of the others. In the first place, to the number of those should be included unusually deep and well – established in the general education system and in the public mind and consciousness the already mentioned, but it is being required a more thorough examination, the idea and its presentation, that the main content of the "Physical Culture" general educational school subject must be large the physical activity in volume and its intensity.

Its reflection in the practical activity, this delusion is found in the very popular slogans among the practitioners: "The lessons of the Physical Culture are existed, in order for children to move, and are not engaged in the conversations"; "The effectiveness of the gym class is determined by the amount of sweat, having spilled in the process of its carrying out" and etc., which are clearly indicated, that the hypertrophy representations about the direct coaching and health effects, that, supposedly, are achieved through the motor activity in the classroom for the physical culture in schools.

At the same time, it is expressed, in my opinion, unwarranted and largely bearing the demagogic, populist, the claim, that the study of theory, even further exacerbating the physical activity shortage challenge, may be adversely effected the health indicators outcomes of the schoolchildren, who already disappointing.

Unfortunately, all these ides and representations are not often only without adequate methodological – theoretically, methodological and practical reasons, but also, often, contrary to the elementary logic, common sense, and also the laws of Nature.

So, it is high time, finally, to understand and with all the certainty to declare, that the objective existence of these laws is conditioned and led to the absolute futility of the attempts to the direct exposure with the trainee or further improving health orientation, having organized in terms of the school physical education class [V.P. Lukyanenko, 2005. – The Sections 1.6.1 and 1.6.2].

In this regard, let me, with the full responsibility for my words, to express the "subversive" thought. In my opinion, there are very good reasons to argue, that even the complete removal of the physical education lessons in their form, in which they are carried out at the moment, practically does not affect the health state of the schoolchildren.

The perspective of the successful further development system of the general education in the field of the physical culture entirely is depended on, how soon in the specialists' and experts' minds, and then in the public mind will be able to overcome the above mentioned unusually well – established socio-psychological stereotype, in understanding the nature and main purpose of the physical culture lessons.

The Delusion on Issue of Place and Role of the Physical Education Class in the General System of Schoolchildren Physical Education Forms.

Among the significant section of the professionals, the opinion has already been formed and is becoming more widespread one, that a lesson in itself, as the special form is "...the master node of the contradictions between the modern theoretical and methodological attitudes and realities of the school physical culture" [V.K. Balsevich, M.P. Shestakov 1997. – P. 232–237]. For all this, the doubts are expressed, on whether, on the whole, the modern school is needed the "old" physical education class.

It is interesting, that one of the main arguments, having justified the legitimacy of such doubts, is the fact, that "...the academic lesson possibilities, as so necessary for the schoolchildren physical education, mastering by them the intellectual component of the physical culture, practically, are not used in our schools" [Ibid.]. Really, such argumentation is looked, at least, strange and very similar to the one, that is proved the necessity of the cutting of the head, for the sake of getting rid of the headache. And, indeed, it is clearly, that all these possibilities are absolutely necessary, it is more logical to look for the ways of their further realization, but not to be eliminated completely from the challenge solution.

Thus, there are quite good reasons to consider the above – presented opinions and judgments, not only, as unjust, but <u>deeply flawed</u> <u>and mistaken</u>. The justifications that have already been presented in the above – mentioned monograph. [V.P. Lukyanenko, 2005, – The Section 4.2]. Here, only it should be emphasized, that the poor efficient performance of the academic work on the physical training and culture at school not the lesson is "guilty", and its further filling it with the content, to which it does not perfectly fit, and the denial of it, exactly is that the content, for which it exists.

Many people underestimate the role of the lesson and the "Physical Culture" school subject, in comparison with the lessons for the other school subjects of the school curriculum. For all this, the will, the desire, the legal grounds for the raising this lesson on the school subject at the fitting level alongside with the other general education disciplines are now more, than enough.

The whole essence of the challenge is its filling quite uncharacteristic for it the content (e.g. RPT, PST, training sessions, and etc.). Exactly, for all these reasons, the physical education class has already been broken away from the academic life of the school, in fact, it has been ceased to be the school subject of the general education, and, consequently, the main form of the physical training, and it has already become, by the apt remark of the famous in Russia expert and specialist in the field of the school physical culture G.N. Satirov in the appendage, the pedagogical value of whom it is quite difficult to grasp and pupils, and subject – teachers, and parents [G.N. Satirov, 1975, P. 9-11]. Therein, the true reasons are lied for the underestimation of this school subject, and, sometimes, openly the contemptuous attitude to it.

So, the challenge solution is to fill it with such content, that no one will doubt, that this is, really, the lesson in the secondary general education discipline. The corresponding informative potential of the "Physical Culture" school subject, is definitely there, but it has never adequately used in the practical pedagogical teaching.

If, in the future, the radical change will not be happened in attitude, towards the use of the unique comprehensive general education features and possibilities of the "Physical Culture" school subject, then no regulations and orders, having emanated from the administrative authorities of the arbitrarily high level, to change the existing attitude will be quite unable to it.

The Delusion on Issue of Role and Methods of Teaching of the Program Theoretical Section.

The most significant damage to the formation and further development of the genuine education in the sphere of the Physical Culture has been had and is being continued to have the delusion, in the form of the construction, as to the rank of the immutable postulate, methodological principle, according to which the teaching of the theoretical material must be carried out only in the process of the practical training, at the <u>unconditional</u> preservation of the high level, while continuing their motor density.

The strict adherence to this principle for many decades throughout has already been led to the factual evisceration of the very actual educational essence of the "Physical Culture" school subject, and it has been the main factor – barrier, having constrained the further development of the efficient educational technologies, having allowed to be provided the necessary level of the physical culture of literacy at the graduates of the general and educational Institutions, as the main condition for increasing the level of the physical culture of the country's total population.

It is very significant to realize, as the intellectual and motor spheres of the sports education are supposed the use in the pedagogical process of <u>completely different</u> means, methods and forms of the training sessions' organization, having involved the various orientation of the influence, required the voltage of different psychophysiological systems, and etc.

There is no doubt the fact, that the impact on the physical nature of the man (e.g. the physical nature) should be carried out, in accordance with the laws of the physical training of the body, the regulations of the further development of the adaptation processes to the physical stress.

Not less certain is the fact, that the formation of the special system of the sports knowledge (e.g. the intellectual component of the physical culture) is connected with the impact on the psychic set up, intellect, and it shall be carried out, in accordance, primarily, with the psychological and pedagogical laws of the knowledge mastering.

The attempts of the simultaneous following one and the other laws are not able to be led to the quite positive results, due to their practical incompatibility, as the mastering any serious information can hardly be possible "on the run", "at full tilt", and "skipping".

At the same time, it must be noted, that all these very obvious facts are completely ignored in the current approaches to the educational process organization of the physical culture in the schools, what is, in my opinion, lies one of the main reasons of its low efficiency, in general.

Thus, the correct way out of this situation is to be organized the classes of three types: the theoretical, practical and methodological, and practical ones.[V.P. Lukyanenko, 2007. – P. 55–59].

The Delusion on Issue of Priority Direction of the Content of the Training Sessions.

One of the most common now is the notion, that the idea on the education priority or one of

the other types of the training sessions orientation (e.g. the educational, training, recreational ones) already in themselves are quite mistaken, as in this case, "There is making too narrow the objective of the physical education and reducing it to only one of the main objectives of the physical education" [V.E. Lyakh, 1993, – P. 3–10]. The supporters of this approach, the challenge solution is to be seen by them in the common goal formulation – **to provide the formation of the comprehensive and harmonious development of the personality in the process of the physical perfection.** In their view, such goal can be accommodated all the possible approaches and, thus, the challenge is, as it were removed from the day's agenda.

In my opinion, such position is the example of the incorrect understanding and presentation on the goals challenge in the school physical education, one of the private consequences of which were the intentional or not the concepts substitution and the mixing essentially two different, though very similar challenges.

Indeed, with respect to the integrity process of the physical education of this challenge does not exist. Here, the main principle is consisted in comprehensive approach to the further implementation of all the kinds of the orientation, where each of them is significant and should be, to the necessary extent, implemented. So in this case, the postulate is just fair on the necessity of the comprehensive of all the challenges solution: educational, educative, health – improving, developing.

However, when the speech is come to the further implementation of some forms of the physical education and, first of all, the physical culture lesson, the challenge is not only the primary focus of the case, but it is also taken the key character. Here, already for the main principle – the absolute priority one of the orientation types, when the realization of other is presented itself the positive consequence of the successful, pedagogically competent implementation of the leading orientation.

It is quiet obvious from the foregoing, that in relation to the implementation of some separate forms of the physical training, the above – stated postulate (e.g. on the equal importance of all the kinds of the orientation) is not applicable. If they, all and always, in the same degree of the significance, then the specifics determining challenge of the physical education forms is quite unsolvable. It is appeared, they all alike.

At the same time, the whole sense of existence of the separate forms of the plurality (e.g. the total number more, than two decades) is conditioned by the fact, that each of them is deferred only in its inherent characteristics. Otherwise, the existence of any of them does not make sense, And, if it is so, then each of the forms is solved their specific challenges, which are inevitable implied the priority one or another (e.g. "own") primary focus.

From this above – mentioned, it does not follow, that do not need to pay attention to other types of the orientation at the lessons: education, health – improving, and developing. But it is also true, that the decision, having related the challenges with them, should not be the main thing, the immediate content of the lessons.

The main content of the lesson should always be remained <u>educational</u>. However, with the proper organization of the educational process, in one way or another, the challenges of recreational and health – improving, educational, developing orientation are always solved, which is the inevitable consequence of the efficient, methodologically competent organization of the educational process.

We solve <u>the recreational and health – improving</u> challenges, having reported the information on the impact on the body of the physical exercises in the process of the theoretical lessons, or properly having dosed the load during the development of the movement and the development of the physical qualities. To do both – this or that, we must so, that it has the positive educational impact.

This is implied, that further doubts on the lesson educational orientation priority is looked, like the nonsense, because, as too similar to the doubts, – whether there should be oil like oily.

The Delusion on the Issue of Essence Understanding of Educational Orientation for Physical Culture Lessons.

In a number of the directive documents of the Ministry of Education of Russia it is referred to the need to be implemented the educational orientation of the training classes in the physical culture in the school. On this basis, there is the perception, that the supporters of this kind of the educational orientation: the educational work in the physical culture "are bursting through the open door".

The essence of the delusion is consisted in the domination of the extremely simplified understanding of the concept essence "the educational orientation", when, in the best case, it is meant the motor learning priority, in relation to the development process of the physical qualities. Along with this, there are the statements, having literally emasculated of all this concept, which would at least to some extent to indicate the presence of this education itself. As the example, we can reduce the statement, that "in the realities of two lessons per week" the educational orientation can be treated to "a more narrowly", and that, "as the fulfillment of a large number of the movements". [V.Sergeev, 1995. – P. 6–7.]. Even more impressive is the statement, that at such treatment of the educational orientation and for the training movements should not be paying attention, as "in the framework of two lessons, – it is useless". [Ibid.].

Against the background of such ideas and representations on the educational orientation, the attempts to be introduced the truly educational means, forms, and methods of the educational process organization, not only are supported, but they are **stopped and recessed.**

For all this, the main argument is reduced to the already above – noted assertion, that the studies of the theory in the physical training classes may exacerbate the schoolchildren health challenge and that "…in the physical training classes the children have to be moved, and not to be engaged in the conversations".

Thus, the assertion, that the education orientation supporters "bursting through the open door" does not correspond to the reality. The facts are testified and the evidence is suggested, that there is no reason to be attributed this challenge to the category of the solved ones. The process of its implementation, and if there is, it is not everywhere, and now, it is only in its very early (e.g. "embryonic") level of the development.

The Delusion on Issue of Main Reason of Low Efficiency of Schoolchildren Physical Education.

In the social consciousness, there is the belief, that one of the main reasons for the low efficiency of the school physical education system is the imperfection of the technology, – the double – entry (e.g. or three times) school training sessions.

One of the most serious delusions is associated with such presentations and attitudes, which, in particular, is reflected in the rather often – sounding calls for the developers to deal with the concepts not to engaged in fabulousness on the introduction of the theoretical lessons, technology development of the 4–5-th single lessons per week, attempts weapons knowledge and corresponding skills, which could be become the fundamental base for traditions emergence of the self – study exercises throughout the people individual life.

According to the authors' opinions, such appeals "In the concept should be included only what, is really led to the result in the context of two lessons per week". [V. Sergeev, 2000. - P. 2-5]. For all this, it is questioned the need for the mandatory implementation of the program's section, having assumed the teaching of the theoretical material. "In any case, at the expense of studying the theory of the physical education, one cannot", and, mainly, because in order to "Do not waste

time on the projects, that do not promise the final success". [Ibid.].

Thus, the theory is appeared, as something foreign, in relation to the physical education. Actually, it is almost completely ignored the fact, that the knowledge, information – that's the main thing, that should be the content of the "Physical Culture" general education school subject, as we have already named it such status.

The detailed analysis of such views has already been implemented by us for quite some time, even in the paper "On the Edge of the Challenge of the School Physical Education", where they are presented, as deeply erroneous [V.P. Lukyanov, 2001. – P. 39–44]. This should say with full certainty, because without recognizing this fact, the correct definition of the future prospects of further improving the educational process on the physical training at the school is appeared to be quite impossible.

The whole depth of the delusions, on this reason, convincingly is demonstrated by the realities of the practical life, having testified on the fundamental and principal impossibility of the complete solution to all of the main objectives of the physical education within the curriculum only training work in the schools (e.g. especially, within the framework of only 2 lessons per week). There are reasons to believe, that their efficient solution is quite impossible, even under the conditions of the six(!) lessons per week. For this purpose, it is enough to remember the old and well – known experts and specialists in the research results, having testified, that to meet the needs of the physical activity for the children of the school age, it should be about 12–14 hours a week of the active, organized training by the physical exercises.

Against this background, it should be aware a very long time ago, that the efficient method of the double – entry trainings is still has not been developed, not because of the negligence reason or the lack of the talented people, who could be coped with this challenge, but because its solution does not exist in the Nature.

Against this background, it has become quite obvious, that the dreamers are not those, who "think out" before the introduction of the theoretical lessons, before the proposition of the five – entry trainings structures, but just the opposite. These dreams are being based on, at least, the common sense, and, at least, some prospects in the future. The level of the authors' fabulousness, having offered the five – time technology trainings is being paled, against the background of the attempts to find the challenge solution in the framework of the double – entry classes per week.

Against this background, it has become clear and that awkwardness the appeals are looked to the scientists and scholars not to be engaged in "theorization", "look around", "down the earth", etc.

Not the scientists' and scholars' "pulling down" from the "godly" heights into the bos-om of the "sinful" reality, and the attempts to use them to be raised above it, and together, having helped each other, to find the most productive ways to resolve the system character challenges, should be the main content of the joint activities of the scientists, scholars, and specialists - practitioners. Without such a mutually beneficial, coordinated, having based on the decent assessment and mutual respect, efforts combining, we will not able to resolve the challenge of process designing of the young students' physical training to the new qualitative level, but also just to get them out of that state of despair and hopelessness, in which they are now almost everywhere.

Thus, the self – respecting scientists and scholars should not accept the offers to be participated in the concepts development and the double entry – classes of the high efficiency justification, because the further participation in this matter is the specific professional incompetence and irresponsibility manifestation. To do so, then slow down the challenge solution, to promote the further stagnation of the school physical education, virtually useless expenditures of the public funds.

The Delusion on the Issue of Self – Study Role by Physical Exercises.

Another deeply delusion is found its expression in the rather skeptical attitude towards to the <u>independence</u> idea and presentation. "... it should be borne in the mind, that there are no any real ways to go to the mass productive and efficient self – study exercises by the physical exercises. If they were, everyone knew about them for a long time". [V. Sergeev, 2000].

In my opinion, it is high time with the whole certainty to declare, that no matter how the skepticism was deep about the self – study exercises, but the other challenge solutions to be further improved the physical education efficiency of the population, it is <u>no existing in the Nature</u>. And, since, we are talking much yet about the education, then how we can not recall even proclaimed by G. Hegel, the most significant principle, which is characterized by this process, as becoming, self – propulsion, the special independent "sculpting" of the personality.

After all, "...the learning, as the pedagogical process – is the controlled self – development by the person". [L. Klinberg, 1984]. In order to be achieved this quality, it should be concluded the main effect of the educational activities in the field of the physical culture.

From this, it is followed, that the real way to be solved this really complex and strategically significant challenge is being existed(!), and, moreover, it has long been known – it is the schoolchildren's and students' arming by the necessary knowledge, methods and ways of their rational and efficient using in the process of the further physical self – perfection and self – improvement. This is the formation of the relevant convictions, needs, value – motivationally orientations on the special information base, that is, the very personality traits, that are made up the intellectual component, the fundamental basis of the true and genuine physical culture of the personality.

This approach is fully consistent not only with the education challenges in the field of the physical culture and physical education of the studying youth, but also the entire system of the general education, throughout upbringing – educationally society's system.

One can only wonder, what these truths are yet remained to be left "the closely guarded secret" for the majority of the specialists – practitioners in the field of the physical education, as well as the paradoxical fact, that against the background, having given the seemingly genuine concern for the school physical education, the proponents and supporters of the purely pragmatic approach to its challenges solving, allow themselves to completely forget about the existence of these basic methodological positions and regulations, or openly and deliberately to be ignored them.

The Delusion on the Issue of the Main Factor, Having Caused the Leading Role of the Physical Culture Lesson in System of the Physical Education Forms.

Many people believe, that such a factor is the potential possibilities presence for the successfully solving of all the major challenges of this process (e.g. learning the movements, the development of the physical qualities, health promotion, and the others), which is totally <u>unrealistic</u>.

In my opinion, the whole essence of the physical culture lesson, having exalted it to the rank of the major and nothing irresponsible form of the physical education, has been conditioned by its strongly pronounced didactic orientation, having assumed the educational challenge priority solving priority in the broad sense of the word. Without this feature, the lesson is no longer a proper lesson, and it is being turned from the primary one into the quite ordinary form. The lessons, having endowed by this trait, will never get lost in the general mass of the physical culture arrangements, but on the contrary, they are usually fulfilled rather the function, as a kind of the rod, integrator, which does not give the separate and individual links of the holistic physical education system, neither "to fall apart", or "stringy" in the chaotic and inefficient phenomenon.

For a variety of other characteristics and parameters (e.g. volume, intensity, total time of the classes, etc.), and, hence, the possibilities of the efficient impact on the physiological, adaptation mechanisms, the lesson is, clearly, inferior, to many other forms. Therefore, the emasculation its educational content is, inevitably, led to the lesson, being relegated to the level of the ordinary, mediocre, and very inefficient form of effects on the schoolchildren's and pupils' organism, and this is led to the doubts about its leadership and need for its presence in the curriculum of the school.

The Delusion on the Issue of Health – Improving Orientation Challenges Solving.

The insufficient awareness of the difference between the care on the main concern for the value of the human life, which should always be the priority, and the specific objectives of the "Physical Culture" general education school subject is laid in the basis of this delusion.

The detailed analysis of the factors, having contributed the futility and hopelessness of attempting to be solved the children's health challenge, due to the motor activity at the physical training lessons, should be the subject of the specific serious debate. Here, it should be recalled, that, despite the existence of the completely fair aphorism: "Movement - this is life", the children's health is depended not only on the level of the physical activity. In particular, the negative influence are exerted on it: the violation of hygienic regime of the day, the learning process, diet, its insufficient calorie content, the training program complexity, the adverse environmental factors, health deficiencies, unfavorable and aggravated heredity, bad habits, and much more.

The complex effect, impact and influence of all these factors, which is, unfortunately, one of the characteristic features of the modern life, is able to be completely erased any whatever positive effects from the physical training facilities use, even under condition of the ideal setting process of the physical education in the school, not to be mentioned on that situation, when schoolchildren and pupils have nothing, except two – three lessons.

Therefore, those, who suggest there is the direct and defining relationship of the children's health status, having depended on the motor activity at these lessons, or cunning, or do not present and realize themselves the whole depth and large scale of this challenge. Apparently, exactly, it has been the lack of understanding the whole depth and complexity of this challenge, which is of the strategic significance, largely it determined the state's security, is the main reason often sounding (by the way, frequently, from the teachers themselves) very strange statements, that the wages should be the teacher of physical culture put directly dependent on the level and dynamics of the schoolchildren's and students' health of this or that school. Moreover, what is the challenge understanding put the teacher in the role of "the scapegoat", responsible for the fact, that he, clearly, cannot afford, but also he "covers" the inactivity a number of the state and public structures, from which, in fact, the successful solution of this significant state challenge is depended on.

Having returned to that aspect of the challenge, which is really in the direct competence of the physical education teacher, it is the <u>principal</u> significantly the crucial awareness of the fact, that the effective help address to the health – improving challenges in the course of the academic work on the physical training at the school, the basic condition for the positive outcome achieving is not to take the lessons by the recreational activities, but the successful solution of the **educational** challenges and tasks, having provided knowledge of the practical and reasonable use of the physical culture methods, in order to maintain and further promote the human health.

The role <u>understanding</u> of the physical culture and training means in the health – improving promotion, <u>the knowledge</u> of how to use them correctly for this purpose, <u>the ability</u> to be implemented the acquired knowledge into practice in the process of the self – perfection and self – improvement – in the achievement, exactly, of these final results, is the main function of the sports education, in relation to the challenge of the tasks solving of the health – improving orientation tasks and challenges.

In the context of the physical culture lessons, there is no more efficient way of solving them. The education, here, is acting in he role, as the significant incentive to trigger the start the physical self – perfection and self – improving, as the significant and essential condition of the health preservation and further promotion. In this position, all the strategy and tactics of the further improving challenge solving orientation in the process of the <u>academic</u> work on the physical culture in the school must be based on.

This circumstance is not enough yet aware, by both, as the specialists, well as in the society, in general. At the same time, it is just and is the major factor, having contributed to the very special, the <u>continued and permanent</u> significance of the "Physical Culture" school subject for any of the general secondary school graduates, making it necessary to give it the status of one of the most significant general education disciplines and subjects of the general education system.

Conclusions

The above – presented delusions are completely discredited the existing system of the general education in the field of the physical culture. Moreover, they are led to the conclusions, that the full education on this school subject is practically absent.

For all this, it is crucial to the realization of the fact, that in the nature there is no simple and straightforward solutions to such large – scale, strategically significant and complex challenges, as: the formation of the physical culture of the individual and personality and society; the health – improving of the nation; the further level increase of the physical development and motor fitness of the people, and as well as the permanent and enduring role in their decision to the genuine physical and sports education.

The ignoring or misunderstanding, that is, inevitably, led to the stubborn, but no sound and completely futile attempts to find the simple recipe for solving these challenges, having designed for the fix – term effect. And, here, it should be emphasized, that this, in no small measure, are contributed to the results of the numerous studies (e.g. up to the doctoral theses), in which the materials and information are presented, having testified, supposedly, on the real possibility of its achieving.

For all this, extremely, it is confused by only one circumstance – practically the almost complete absence of any noticeable <u>significant – so-</u> <u>cially</u> effect for the already past many decades.

During this period of time, thousands and thousands of the attempts were not able to help, including in the form of the hundred of dissertation researches, having dedicated to all sorts of the justifications for the various ways and approaches to solving challenges of the health promotion, further physical development, motor fitness in the framework of the training classes on the physical culture in the school.

Having paid the attention to this, I want to be understood correctly. All these carried out investigations, have, undoubtedly, been brought some benefit. Many efficient approaches have been substantiated with them, having addressed many of the issues, privately. However, practically, almost of them are presented themselves are nothing more than a forced "tug" inferior and the thin blanket (e.g. which is acted, as the conditions of the academic work implementation on the physical training in the school) to be addressed some issues on the others. In the overwhelming majority, it appeared, the getting positive experimental results has been only possible, due to increase attention to any one of the challenge's aspects and the partial or complete neglect of others equally significant.

Thus, all these attempts throughout its mass are, precisely, irrefutable experimental justification and basis of the <u>fundamental and</u> <u>principal</u> impossibility of the successful challenge solution of the health – promotion, the levels increase of the physical development and motor fitness by organizing some particularly efficient (e.g. miraculous) physical activity at the physical training lessons.

Along with this, it must be remembered, that whether we like it, or not, but the development processes in the purposeful – contently relationships are not always subjected to the direct pedagogical influence. Exactly, that is why, many complex social challenges are not be able to be solved only at the pedagogical level (e.g. drug addiction, criminality, health – promotion, the proper level of the physical development and the others), even though, to the teachers, in the first place, the society raises the claims, about the quality of the human imperfection. [E.A. Kolesnikova, 2001; V.A. Ponomarchuk, 1994].

In this context, perhaps, it is appropriately to be cited the opinion of the Professor at the University of Michigan (USA) R. Malina, who in his report at the World Summit on the Physical Education [Berlin. 1999] has noted, that "... the growing body is being adapted to the physical activity, but the response is not enough, in order to be changed the growth and development processes of the organism, having embodied in the genotype". [V.P. Mochenov, V.P., E.V. Ugolkova, 2000, - P. 56-63]. According to his opinion, "the physical activity does not have the single clear effect on the growth and further development of the body, as it has been described in the most of the researches and studies". [Ibid.].

Thus, there are rather good grounds and bases, having allowed with all certainty to declare, that the widespread presentations and understanding on the possibility to rapidly obtain the positive effect in the attempts implementation to be solved these complex challenges, by such the simple way, as the increase in the motor activity at the physical training lessons in the school, are deeply <u>erroneous and totally</u> groundless.

The misunderstanding, or blatant disregard for the above – presented of the quite obvious facts, voluntarily or involuntarily, is indicated the unwillingness to consider with the actual reality, the laws of Nature, as well as completely unfounded and undeserved is presented the teacher of physical culture in the role, as "the scapegoat", responsible for all the failures in these challenges solving, and, thereby, it is removed the responsibility from a variety of the social Institutions, which, in reality, should be responsible for it. [V.P. Lukyanenko, 2005. – Section 1.6.]. Unfortunately, this situation is not yet found the proper understanding not only in the ordinary consciousness, but also among the experts – practitioners, the teachers of physical education, heads of the education bodies, as well as many scientists, and scholars, having dealt with the challenges of the school physical culture.

Perhaps, only this, it can be explained the proceedings under their way for already past many decades, and especially active recently, absolutely fruitless "frontal attacks" on these challenges, having based on trying to be implemented the purely pragmatic approaches, designed to receive the direct, momentary effect.

This fact is precisely the bright evidence of the clear indication absence in the society should understand, that the rising challenge up to the level of the <u>socially meaningful</u> indicators of the physical fitness and people health cannot be resolved without the significant increase in the level of the physical culture of the people, which, in its turn, is quite impossible the challenge solving of the radical transformation of the general education system in this sphere, is able to provide the proper level of the sports scholarship for majority of the country population.

In this connection, it is high time to, finally pay attention to the truly egregious evidence, having testified, that, despite the very significant (e.g. in terms of the total volume) amount of time, having spent on the teaching of the "Physical Culture" school subject, constituting over 11 years (e.g. 132 months) (even, under the conditions of only 2 single lessons per week) more 700 (!) lessons (e.g. much more, than in many others school subjects), the overwhelming majority graduates of the general secondary schools are left <u>completely illiterate(!)</u> in the field of the physical culture. Is this possible by any other school subject?

In this respect, that fact is very significant, that even many of the journalists in the regional, provincial, and republican Olympiads – competitions on the "Physical Culture" school subject exhibit the dense ignorance, not knowing how to formulate at least two – three articulated suggestions in response to the questions about the role of the physical culture in the modern society life or about the nature of the concept of "the physical culture of the person".

It is my deep conviction, that it is in these and other similar facts, and he main causes are lied unacceptably low level of the physical culture of the people, inevitable and one of the most severe consequences of which is the low level of the health and motor fitness of the young and learning youth and the entire population of the country, in general.

The promote elimination of the presented delusions and shortcomings is one of the most

significant goals, that is aimed to be promoted the concept, having developed by the author of these lines. [V.P. Lukyanenko, 2007. - p. 95].

A lot of and many other delusions have already been in the theory and practice of the physical education of the schoolchildren. However, overwhelming majority of them is more specific and entirely due to the existence of the above – considered delusions of the methodological nature, the removal of which will be inevitably led to the disappearance and many others.

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Materials of Conferences

TRAINING OF SPECIALISTS FOR WORK IN THE INFORMATION SOCIETY

Rakitina L.A., Pendyukhova G.K. Branch of "Moscow Psychologic-Social University", Sterlitamak, e-mail: sterlitamak@mpsu.ru

Continuous changes in the area of industry, industrial relations are taking place in modern world, technologies are improving, and information and communication technologies are playing a greater part in the world economy. In order to realize oneself in the informational society, a specialist must have an idea of possible ways to improve organization of data, be able to search data throughout various sources, organize storage of information, have skills to use the received information in solving their professional problems, master and use new means of informational technologies.

The subject "Computer study and information technologies" contains the following divisions:

1. Informational culture. Familiarization with technologies of collecting, storing, processing, and transferring information, informational resources, principles of computer functioning. Mastering basic informational technologies of processing text, graphic, and digital information, work with databases and digital tables. Familiarization with basic principles of telecommunications. Training in the area of informational culture is majorly carried out within the computer study course of secondary school.

2. Training specialists to implement informational technologies in their professional activity takes place in a university. Program applications, required in professional activity of this specialist, are mastered. For example, students of construction specialties study systems of automatized projection (SAPR), economists – programs of forming accounting and tax reports, modeling social-economic processes, managers – applications of organizing digital exchange of document. New specialized applications are being introduced annually, and none educational institutions can keep up with them, therefore, students should not be trained to use a specific application, but prepared to master such applications on their own. Only in this case we can speak of training specialist who are able to compete with their rivals at modern labour market.

3. Studying methodics of using program and technical means of informational and communicative technologies includes facilitation of the global computer network not only in order to search for and transfer information, but also for real-time video communication and efficient usage of local networks. It is necessary to familiarize students with work of interactive blackboard of projector to organize reports and conferences, programs that create slide-shows. Future specialists should know principles of drawing a presentation and preparation for reports.

University education should not be directed towards a detailed mastering of separate applications, but should train future specialists to master new programs that they will refer to in their professional activity.

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SHAPING TO EMOTIONAL STABILITY FUTURE TEACHERS OF THE PROFESSIONAL EDUCATION

Abdullaeva S.H.

Namanganskiy government state university, Namangan, e-mail: marina-20053@yandex.ru

Given article is dedicated to problem to emotional stability due to, which person capable to save capacity to work and successfully realize its professional activity, expecting skill to control their own emotional conditions. Efficient decision by process of the shaping to emotional stability of the future teacher of the professional education in high the educational university is a realization to concepts larval developing formation, in the course of which teacher aims the student at camonoshahue, active using the diagnostic methods for study of its personalities, their analysis and interpretation; creates happy circumstances for larval difficulties, increasing of the self-verification, emotional stability of the

Keywords: emotional stability, professional activity, diagnostic methods, stability, ability

Its path changes in condition postindustrial society high professional-pedagogical formation due to introduction new pedagogical technology. Preparing the future bachelor of the professional education in modern the educational institutions reflects the actual trends to modernizations of the formation and targeted competency on shaping as the main result of the mastering the educational programs. Competent approach in training of the teacher is oriented on provision of success of the graduate in situations modern society and dynamic market of the labor.

One of the most important professional significant quality of the bachelor of the professional education, which promotes to adaptation and success in professions, conservation of psychological health and stabilities of the emotional condition at realization professional-pedagogical activity, allowing prevent the development of the syndrome of the emotional burning-out and deformation to personalities emerges emotional stability.

The Problem to emotional stability is one of the most complex and actual in modern science. The Analysis psycho-pedagogical literature on given problem shows that opinions of the researchers in determination of the notion to emotional stability carry the conflicting nature.

The Row of the researchers, studying governed problem, interface emotional stability with manifestation volitional quality to personalities, ability consciously to control the appearing emotion (V.L. Marischuk, K.K. Platonov, E.A. Mileryan and others.). So, for instance, YU.N. Kulyutkin, G.S. Suhobskaya consider that EU reveals itself in that, insofar patient and insistent is a teacher at realization their own замыслов, insofar typical of it endurance and self-confident-control in disadvantage, stressful situation, insofar he will die to keep itself in hand in condition negative emotional influence on the part of the other people [4].

The Second direction in determination of essence to emotional stability is realized in

functioning L.M. Abolina, P.B. Zilibermana and row other scientist. The Researchers suppose that characteristic of the nervous system influence upon manifestation of emotional stability, but completely do not predestine her. Emotional stability, upon their opinion, by quality to per-sonalities, determined by combination of the psychological particularities to personalities, which provide success to activity in tense emotional situation [1;3]. Emotional stability, on the one hand,- result of the holistic functional system emotional tense and simultaneously productive activity, with other – a system quality to personalities, gained by individual and revealing beside it in unity emotional, knowledge-based, volitional and the other relations, in which he is involved in condition of tense activity.

Emotional stability analyses L.M. Mitina, and characterize her as ability, which helps to withstand life and professional difficulty without loss of the psychological balance, revealing in complacency by life and professional activity, in absence of the aptitudes to long sufferings negative emotion. The Combination to emotional stability and emotional expression forms such integral feature of the teacher, as emotional flexibility [8].

In the opinion of V.E. CHudnovskogo, any studies to stability in significant measure are connected with psychological stability of the personalities. The Researcher in comprehension of stability to personalities selects two interconnected aspects.

1. Stability to personalities as ability of the person to conservation their own individual position and opposition influence, discordant his larval installation. In this case stability to personalities is conditioned by degree degradability her leading motive and installation – a defensive moment in terminology V.E. CHudnovskogo.

2. Stability to personalities as ability of the person to personify in reality to their own larval positions, converting circumstance and own behavior – an offensive moment [12].

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In allowance G.S. Nikiforova is shown influence to psychological stability to personalities on her(its) labor activity, on reliability of the workman and, back, influence to successful professional activity on sufferings self-realization, complacency by life and stability to personalities [9].

In spite of ambiguity approach to under discussion notion the general in all considered determinations is that emotional stability is presented as quality to personalities, due to which person capable to save capacity to work and successfully, stable to realize activity in condition dynamic situation and different influence [10]. The Collation and analysis different standpoint on cause of the determination given notions allow to draw a conclusion about that that emotional stability is by quality to personalities, which is characterized by optimum combination psychophysiological, emotional, volitional and other psychological particularities, in complex preventing origin to emotional tension, professional activity.

Emotional stability of the teacher is a complex system formation, which possible consider as syntheses characteristic and quality to personalities, which allows in complex emotional condition certain and by itself execute its professional activity, expecting skill to control their own emotional conditions, adding him constructive, rather than destructive nature[11]. Emotional stability is realized as emotional maturity and even temper, ability of the person to withstand the miscellaneous of the sort life difficulty without loss of the psychological adaptation.

Emotional stability of the bachelor of the professional education we interpreted as quality to personalities, characterized ability of the teacher to identical and flexible reaction on essential change internal and external factor, of the skills stability, stability in professionalpedagogical activity.

The Efficient decision of the problem of the shaping to emotional stability of the future bachelor of the professional education in top the educational institutions introduces us realizable in riverbed of the concepts larval developing formation, under development E.F. Zeerom[2], leading value which are proclaimed universal larval to abilities: selectivity but semantic directivity is concluded in development and subject of the formation in process of their interaction and cooperation. Accordingly, are transformed target landmarks, profound and operating components process professional-pedagogical education, in the course of which teacher aims the student at self, active using the diagnostic methods for study of its personalities, their analysis and interpretation; creates the happy circumstances emotional and larval difficulties, increasing of the self-verification, emotional stability and as a whole abilities to emotional.

Thereby, possible speak that emotional stability is a professional important quality of the bachelor of the professional education since she allows the graduate successfully to realize professional activity as teacher.

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Materials of Conferences

THE SOURCES AND MECHANISMS OF CREATIVE ACTIVITY FORMATION OF THE FUTURE TEACHER-MUSICIAN

Mitina N.A.

Zhetysu State University named after I. Zhansugurov, Taldykorgan, e-mail: mitina111@gmail.com

The leading challenge of undergraduate and postgraduate education development in Kazakhstan is further implementation of the Bologna Declaration principles in the context of European education trends. The task for the higher musical-pedagogical education, determined by the modern society, actualizes the problem of future music teacher's creative activity and creative potential formation in general, because the level of formation of future specialist's creative activity defines the overall level of training.

The ways and means of forming a creative activity of the future teacher – musician are currently conceptualized by the theory and practice of higher education. However, there are different points of view on its sources and mechanisms.

It is known that the main source of human activity is a necessity. This assertion is based on the work of B.G. Ananeva, A.N. Leontiev, K.K. Platonov, S.L. Rubinstein and others. The identification of needs as a source of person's creative activity allows us to determine the driving reasons for the development of an individual and his surrounding community. Distinctive quality of the creative personality's needs is their amplification and original, innovative, creative satisfaction. Law of amplification of the people' needs indicate the transition from consumer needs to creative, constructive.

D. Sternberg and E.L. Grigorenko in their work consider six sources of creativity: intellectual abilities; adequate knowledge of the field of activity; motivation; thinking styles, as well as specific personality traits (the willingness to overcome obstacles, etc.); the availability of environment that supports creative goals [1, p. 189–210].

A.I. Kovalev states that "the inherent needs of creativity and professional communication are major sources of formation of the creative activity of the future teacher-musician" [2, p. 7]. We support this point of view, at the same time understanding the need for creativity in two ways: as the need for spiritual enrichment and the need for creative self-realization. The need for communication performs cognitive (information exchange), communicative (organization of interactions) and regulatory (optimization of co-creation) functions. Thus, it is the link between the acts of individual creativity and co-creation. The foregoing leads us to conclude that

the creative performance and communication are the most important areas of formation of creative activity. The sources and the driving force behind the creative development of the personality are the needs of creativity, but if the person's needs are in contradiction with his abilities, it leads to a drop of creative activity.

According to many researchers (O.G. Sushchenko, E.S. Chugunova E.K. Seth, A. Kovalev, N.A. Goncharova etc.) an important mechanism in the formation of creative activity is a motivation of the future specialist. The motivation encourages development of creative abilities, defines passiveness and activeness in professional performance. Defining the basic functions of motives, A.N. Leontiev distinguishes motivation and meaning formation. "The formation of the meaning motives provide creativity with personal meaning, others accompanying him motifs serve as incentive factors" [3, p. 202].

Constant aspiration of the creative individual to act creates the basis for the development of genetically inherent qualities, their improvements, and the formation of the new ones, acquired in the process of creative transformations.

N.A. Goncharova states, that the creative activity of the future music teacher's personality is a complex, dynamic and individual formation of a new, manifested in the focus on creativity and implemented in a creative activity [4, p. 202]. To become a basis for the formation of creative activity, the performance of the teacher-musician must be dynamic, independent and creative. Thus, the creative activity of the future teacher-musician is developed in creativity and musical performance, standing at the level of creativity. This activity, in turn, is the main mechanism for the formation of the phenomenon, which is of interest to us.

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Materials of Conferences

PRODUCTION TECHNOLOGY OF SELF-ROOTED VINE SEEDLINGS

¹Kurapina N.V., ²Bolkunov A.I.

¹Volgograd State Agrarian University, Volgograd branch of All-Russian Scientific Research Institute of Viticulture and Winemaking by Y.I Potapenko, Volgograd, e-mail: volgop@yandex.ru; ²Scientific Industrial Company "Russkoye polje", Volgograd, e-mail: ruspole2009@yandex.ru

Here we show some aspects of production technology of self-rooted vine seedlings as well as the results of field experiments for the study of irrigating regimes, total and average daily evapotranspiration of grapes nursery in the open ground, and nutrition schemes. The studies have been performed on brown soils of the southern slope of the Volga upland Volgograd region, Russia. By results of research the most effective was a differentiated regime of drip irrigation in the period of establishment and active growth of cuttings at the level of 85...90% of the lowest water holding capacity of the soil (LWHC), and after the beginning of ripening of seedlings at the level of 70...75% LWHC. This irrigation regime ensured the output of the standard seedlings at the level of 70%.

The cultivation of high-quality planting material of grapes is the act of a pressing issue in all grape-growing regions of Russia. Updating old plantings and expanding new production places high demands on the seedlings, which, in turn, dictates the need to improve the efficiency of the used production technologies of vine seedlings and increase their yield. Thus, specialists of all-Russian scientific research Institute of viticulture and winemaking indicate that in Russia it is necessary to plant 9-10 thousand ha of new plantations annually. This requires about 22 million seedlings, including at least 17 million inoculated and 5 million self-rooted [5]. The annual demand for seedlings in the Volgograd region is estimated at 300 thousand pieces and the actual production of standard seedlings does not exceed 150 thousand, i.e. half of the required number [2].

According to research data of both scientists and growers, cultivation of vine seedlings is possible only in conditions of irrigation regardless of growing region because of the root development of cuttings requires high soil moisture and surface air layer [2, 4, 5, 6, 8, 9]. In the area of brown soils of the Volga upland in dry steppes, rainfall is less than 300 mm per year. When growing a vine nursery in the outdoors, irrigation is necessary.

Previous research shows that scientists developed the technology of cultivation of the vine nursery using mulch film to preserve moisture and heat [9]. Drip irrigation technology of vine nursery on the black soils was studied in the works of A.V. Dutova and others [4]. The aim of our study was to obtain the highest possible output of the standard self-rooted vine seedlings based on the substantiation of the water regime of the soil and ensure its irrigation regimes in combination with fertilizer application, preplant preparation of cuttings and foliar top dressing of nursery.

Materials and methods of research. The experimental plot located in LLC "Dubovsky vinograd" of Volgograd area in 2007-2010. Soils of the experimental plot are brown sandy loam. The humus content was 1.73 %, the availability of mineral nitrogen and movable phosphorus was low (1,9 and 0.79 mg/100 g of the soil accordingly), exchangeable potassium was medium (21,0 mg/100 g of the soil). The LWHC of 18.3% of the mass of absolutely dry soil. The moisture conditions of the vegetative period during years of research was: 2007 - dry(Hydro-termic ratio HTR = 0,6), 2008 - mediumhumid (HTR = 0,8), 2009 - medium (HTR = 0,7), 2010 - very dry (HTR = 0,5).

The scheme of experiment included two factors that were irrigating regime (A) and nutrition scheme (B): A1 – drip irrigation of the soil layer of 0.0-0.6 m at the moisture level of 70...75 % LWHC; A2 – drip irrigation of the same layer of the soil at the level of 85...90% LWHC; A3 - drip irrigation in the phase of root establishment at the level of 85...90% LWHC at the same soil layer and at the phase of wood ripening of the seedlings - at the level of 70...75% LWHC at the soil layer of 0.0-0.6 m both. B1 – $P_{40}K_{60}$ implemented together with fall soil tillage, fertigations with $N_{12}P_5$ were implemented 10 times during the period of vegetation (base experimental variation). B2 - base variation nutrition scheme + 12 hour presoak of bottom ends of the cuttings with "Radifarm". B3 - nutrition scheme under variation B2 + foliar feedings with "Master" (18:18:18 + 3), dosage 5 kg per ha every two weeks; after wood maturing starts "Master" (3:11:38+4) same dosage and intervals. Control variation was A2B1.

The experimental variations were arranged by randomization method [3]. Count area amounted to 8,4 m2, or 12 linear meters of two-line series. This area allocated 240 cuttings. In our experiments, we used cuttings of the vine variety Riesling Rhenish. Soil moisture monitored using tensiometers. Calculation of irrigation norms [7], evapotranspiration [10], the output of the first grade seedlings [1].

Results of research and their discussion. Preliminary examination and experimental testing of various planting schemes of the cuttings into the nursery, allowed us to choose, in our opinion, the optimal planting conditions for the Low Volga region. So, for the industrial production of vine seedlings under drip irrigation in brown soils of the southern slope of the Volga upland, we recommend to use a planting scheme: two-line series on the Water supply of the vine nursery during the growing season determined by the weather conditions and irrigation regimes. On average in the first variation 16 irrigations by 200 m³/ha were performed, in the second – 28 irrigations by 125 m³/ha and in the third – 19 irrigations by 125 and 3 by 200 m³/ha (Table 1). Restrictions on irrigation in the third variant was determined by the phase of the beginning of the ripening vines, which occurred averagely, on August 14.

Evapotranspiration analysis showed that it varied depending on water regime of the soil. In average, the highest water consumption of 4708 m³/ ha observed in the second research variation. In the structure of evapotranspiration, irrigation water dominated, its share calculated at least 70% of the total moisture amount used by the vine nursery (Table 2). The highest average daily evapotranspiration up to 40 m³/ha was in the variation of the water regime 85...90 % LWHC (Fig. 2).

The main goal of vine nursery production is to ensure a high survival rate of the cuttings. From the point of view of the quality of the planting material, durability of future plantings and economic benefits, it is necessary to achieve the highest yield of first grade seedlings among survived cuttings. In our experiments, the highest output of the first grade seedlings, amounting to 70%, was in the variant with maintaining soil humidity no less than 85...90% LWHC with a reduction to 70...75% LWHC and the principal application of foliar sprays with Master (Table 3). On average for the water regime factor, in the first variation, the output of the first grade seedlings was 44.9% (varying by schemes of fertilizer application from 31,4 to 57.6%), in the second 52,7% (varying from 38,4 to 67,3%), and in the third of 56.7% (varying from 44.3 to 70%).



Fig. 1. Vine nursery with drip irrigation lines

Table 1

The number and distribution of irrigations of vine nursery on average years of re	searc	h
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Variations for	Number		Monthly/irrigating rate, m ³ /ha					
the pre-irriga-	of irriga-	May	June	July	August	September	October	irrigation,
tion moisture,%	tions					1		m³/ha
LWHC								
7075	16	1/100	4/200	4/200	3/200	up to 1/200	1/150	3000
		3/200				-		
8590	28	1/100	7/125	8/125	6/125	1/125	1/150	3469
		5/125						
8590/	24	1/100	7/125	7/125	3/200	up to 1/200	1/150	3325
7075		5/125				-		

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				-			
Variations for the pre-irrigation mois- ture, % LWHC	The use of soil moi	The use of initial soil moisture Precipitation		Total irrigation		Evapo-transpiration	
	m³/ha	%	m³/ha	%	m³/ha	%	m³/ha
7075	144	3,4	1095	25,8	3000	70,8	4239
8590	144	3,2	1095	24,1	3469	72,7	4708
8590/7075	144	3,3	1095	25,0	3325	71,7	4564

Evapotranspiration structure of vine nursery in average for the research years





Table 3

Table 2

Output of the first grade seedlings on average for the experiment

Variation of the experiment	Well-Rooted cuttings,%	Out of well-rooted cuttings		
		First grade seedlings,%	Seedlings of the other	
			grades	
A ₁ B ₁	64,4	31,4	33,0	
A_2B_1 (control)	68,1	38,4	29,7	
A ₃ B ₁	69,4	44,3	25,1	
A ₁ B ₂	74,7	45,7	29,0	
A ₂ B ₂	84,7	52,3	32,4	
A ₃ B ₂	85,3	55,7	29,6	
A ₁ B ₃	75,7	57,6	18,1	
A ₂ B ₃	84,0	67,3	16,7	
A ₃ B ₃	85,7	70,0	15,7	
On average for A ₁	71,6	44,9	26,7	
On average for A_2	78,9	52,7	26,3	
On average for A_3	80,1	56,7	23,5	
On average for B	67,7	39,2	28,5	
On average for B_2	81,95	52,2	29,8	
On average for B_3	82,3	65,4	16,9	

N o t e s : The Least significant difference (LSD $_{05}$ 2007 – 0,7; 2008 – 2,0; 2009 – 3,7; 2010 – 4,5.

Conclusion

As a result of the conducted research, it is established that it is necessary to maintain soil moisture in the layer of 0.6 m is not less than 85...90% to phase maturation of the vines and 70...75% LWHC in the subsequent by conducting 3 drip irrigations with the norm of 200 m3/ha and 19 irrigations with the rate of 125 m3/ha with distribution by month from May to September: 5:7:7:3:1. In addition to the vegetation should be preparatory and pre-harvest irrigation

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with norm of 100 and 150 m³/ha. The recommended water regime of the soil must be combined with the following scheme of fertilizers: application with fall tillage P_{40} K₆₀. Since the phase of 2...3 leaves, and then every 10...14 days until wood maturing phase to fertigate with nitrogen and phosphate fertilizers of carbamide and orthophosphoric acid at a dose of N₁₂P₅ (10 dressings). Before planting the bottom ends of the cuttings must be soaked for 12 hours in "Radifarm". Together with mentioned, since the phase of three leaves and then every 10 to 12 days further foliar sprays with Master (NPK in the ratio 18:18:18 + 3) in the dose of 5 kg/ha; and in the period of maturing of seedlings of the same preparation at a ratio of NPK 3:11:38 + 4 the same dose.

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Materials of Conferences

ASCORBATE LEVEL IN REPRODUCTIVE ORGANS OF MALE RATS IN ACUTE DELTAMETHRIN INTOXICATION

¹Chigrinski E.A., ²Conway V.D., ¹Metrinskiy Y.Y.

¹Omsk State Medical Academy, Omsk; ²Omsk State Agrarian University named after P.A. Stolypin, Omsk, e-mail: chigrinski@list.ru, chigrinski@dr.com

It has been determined by the studies carried out by M.F. Ismail and H.M. Mohamed [4] that deltamethrin (DM) ($C_{22}H_{19}Br_2NO_3$) negatively exposes on the reproductive system of the mammals. Disturbances in the reproductive organs are probably associated with the oxidative stress after DM exposure [5]. Ascorbic acid is a part of the non-enzymatic antioxidant system and prevents the enhancement of the lipid peroxidation of the cell membranes observed while the oxidative stress. In this regard, relevant is to study ascorbate level and other nonenzymatic antioxidants in the reproductive organs of the experimental animals in DM intoxication.

The aim of our study was to determine the effect of DM acute intoxication on the ascorbic acid level in the reproductive organs of male rats.

The study has been carried out on 24 male rats of Wistar weighing 240 ± 10 g rats divided into two groups: Group 1 (n = 12) – the control rats; Group 2 (n = 12) – animals exposed to acute intoxication DM. Rats of Group 2 were orally administered once at a dose of DM 43,5 mg/kg body weight (½ LD 50) using a metallic probe and the animals of the 1st group in the same manner were administered an equivalent volume of saline. The experiment used a formulation of DM under the brand name "Butox 50" of the firm "Intervet International BV" (Netherlands).

Testes, epididymis and prostate gland were extracted 24 hours after DM administration followed by homogenization. Total protein was measured in the supernatant applying the biuret reagent and ascorbic acid by the H. Varley method [6]. The experiment was conducted in accordance with the European Convention for the Protection of Vertebrate Animals used for Experimental and other Scientific Purposes (Council of Europe No 123, Strasbourg, 1985).

Statistic data processing was performed using non-parametric U–Mann–Whitney test.

The study results indicate that ascorbate deficiency is developing in the reproductive organs of the experimental animals within one day after DM administration. DM concentration in the testes of rats in group 2 was reduced by 32% compared with the control group. In the epididymis and prostate gland of rats in group 2 the ascorbic acid ratio was reduced by 27 and 23%, respectively, compared to the 1st group.

Ascorbate reduction was occurred due to its intensive involvement into the inactivation process of reactive oxygen species including the reactions transforming tocopheryl quinone into tocopherol. Reinforced lipid peroxidation of the cell membranes under the free radicals effect stimulates tocopheryl quinone accumulation. One of the major sources of reactive oxygen species in the cells of the reproductive organs in DM intoxication can be an acute disorder of purine metabolism described previously in various pathological conditions [1; 2; 7]. The acute disorder of purine metabolism is characterized by nucleic acids damage, impaired energy metabolism with subsequent AMP accumulation triggering a profound catabolism of purine mononucleotides up to uric acid. Our hypotheses are matched with the studies conducted by M.M. Hossain and J.R. Richardson [3] on the cell cultures found that DM causes damage and fragmentation of DNA.

Thus, the results revealed that the decrease of ascorbic acid in the testes, epididymis and prostate gland of rats is observed in a day after a single administration of deltamethrin in a dose of 43,5 mg/kg body wt.

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EXPERIMENTAL SUBSTANTIATION OF THE ROLE OF FREE RADICAL MECHANISM OF NEUROTOXICITY IN REDUCING THE QUANTITY OF STURGEON POPULATION

Loshenko V.I., Sakharov A.V., Prosenko A.E. Novosibirsk State Pedagogical University, Novosibirsk, e-mail: vitalina loshenk@mail.ru

Influence of fluctuations the hydrothermal regime in the system "reservoir – hydroelectric

complex – tailwater pool of the river" on the state of lipoperoxidation and the activity of antioxidant defense system in brain tissues of the Siberian sturgeon was investigated in aquarium conditions. Experimental modeling of the flush of "warm" water from the reservoir into the tailwater pool of the river showed the important role of free radical mechanisms in the realization of ecotoxicological effects in the water of the dam site of hydroelectric power station.

Streamlining of river drains by dams of hydroelectric power plants causes the profound transformations in environment and promotes emergence of environmental problems [1] that leads to a decrease in number of commercial fish population [2, 4]. In accordance to classical concepts of Environmental Toxicology, the decreasing of number of living organisms, as well as rising of their quantity is a sign of the ecotoxicity [3]. It is considered that fluctuations of hydrothermal regime in the system "reservoir - hydroelectric complex - tailwater pool of the river" is a factor of ecotoxicity in water areas of many rivers [4]. Mechanisms of implementation the ecotoxic effect in such systems are still poorly explored. In this case, the development and use of experimental models which reproduce fluctuations of the hydrothermal regime and allow observing a condition of fish is a prospective approach. It studies the ecotoxicological problems of the construction and operation of dams at hydroelectric power plants.

The purpose of this research was to study the influence of fluctuations the hydrothermal regime on a state of lipoperoxidation and the activity of antioxidant protection system in brain tissues of the Siberian sturgeon.

Material and methods of research. The research was carried out in the Laboratory of Reproduction of Aquatic Biological Resources on the young fish of Siberian sturgeon during Autumn-Winter period of 2009–2013.

20 Sturgeons of control group were in aquarium filled with water of constant temperature $17,2 \pm 0.57$ °C. 20 fishes of experimental group were in aquarium with temperature fluctuations every 24-hours as it takes place in natural environment. Fluctuation of the hydrothermal regime of water was carried out by sequentially increasing and decreasing the temperature on $5 \pm 0,57$ °C relatively to 17,2 °C. Experimental modeling of the flush of warm water took place during two hours at three times per 24-hours for one month. Fishes of all groups were removed from experiment through 30 days of observation.

The important role of free radical processes in brain tissues evaluates by the methods of biochemical analysis. Structural characteristics of brain tissues tested by methods of morphological analysis using the light optical (microscope CARL ZEISS Axio Imager M2, Germany) and the ultrastructural levels (electronic microscope JEM-1400 "Jeol" Japan).

Results of research and their discussion. Difficulties of metabolic processes in brain tissues of the Siberian sturgeon were found during modeling of the impact of fluctuations of hydrothermal regime on the organism of fish. This is evidence by changes the biochemical indexes of lipoperoxidation and activity of antioxidant protective system. Sturgeons of experimental group had increase diene conjugates and catalase activity than in control samples. At the same time a quantity of malondialdehyde and activity of superoxide dismutase had decrease. This was the reason to suppose that the brain cells of experimental group' fishes during the process of adaptation to temperature fluctuations continue to provide the inactivation of toxic hydroperoxides. During testing the samples of front part of brain of Sturgeons from experimental group in laboratory by the light microscope were found signs of water-ion homeostasis in ependimoglia and neuropil. Results of morphological testing show that these Sturgeons had a structural disruption, including ependimoglia functions.

Using the electronic microscope we found that neuron structure of front part of brain of the experimental group is different from the control samples. A wide lucidity in the cistern of endoplasmatic reticulum and Golgy apparatus are in cytoplasm of neuron. Compared with the control of neuron in cytoplasm of experimental group fishes the quantity of lysosomes and phagosomes are increased. Regularity in all studied samples of brain of the fish showed violating the structure of myelin of different levels in neurons.

The set of identified morphological changes proved that the long-term temperature fluctuations lead to structural changes in grey and white stuff in brain of the Siberian sturgeon. Results showed that the temperature fluctuations accompanied with changing the level of synthetic processes which provide the antiradical protection of brain cells. The revealed free radical mechanism can testify to its key role in decreasing the number of sturgeon in streamlined river drains of dams of hydroelectric power plants.

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EFFECT OF ACTIVE OXYGEN METABOLITES ON THE STRUCTURE AND ELEMENT COMPOSITION OF RAT KIDNEY TISSUE

Lukanina S.N., Sakharov A.V., Prosenko A.E. Morphological Laboratory, Novosibirsk State Pedagogical University, Novosibirsk, e-mail: lukanina@ngs.ru

The methods of biochemical analysis revealed, that one of the complications prolonged use of glucocorticoids is the development of oxidative stress on the tissue level. Experiments on the rats proved, that the kidney together with other organs are the most sensitive to active oxygen metabolites. In case of study samples rat kidney with glucocorticoid-induced oxidative stress in transmitted light allows to discover the violation structure components of glomerular basal membrane, walls of capillaries vascular glomeruli, epithelium of distal convoluted tubule. Using atomic-emission analysis of kidney tissue homogenates indicates a violation of Na / K homeostasis, filtration and reabsorbtion functions of this organ. Addition to these elements, which are of decisive importance in the regulation of watersalt homeostasis, found change in the content of Cu and Fe, included in the active sites of key antioxidant enzymes.

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ETHNO-CULTURAL EDUCATION IS THE IMPORTANT COMPONENT OF ETHNO-CULTURAL COMPETENCE OF TEACHERS IN STAVROPOL REGION

Dzhaubaeva M.I., Filimonuk L.A.

North-Caucasian Federal University, Stavropol; Nevinnomyssk State Humanities and Tachnical Institute, Nevinnomyssk, e-mail: filimonuk.l@rambler.ru

The present stage of scientific knowledge is characterized by the increasing role of pedagogical studies are devoted to ethno-cultural education. In the world of multi-ethnicity pedagogy phenomenon has been the subject of research in the 60s of XX century, and, since the 80 s, abroad actively developing process of the formation of concepts: ethno-cultural education (J. Banks, U. Boos-Nunning, U. Sandfuchs), bicultural education (W.E. Ftenakis), multiprospect education (H. Gopfert, U. Shmidt), antiracist education (Ch. Mullard. M. Cole, S. Trone), cross-cultural education (R. Henvi), etc.

Scientific understanding of the individual problems of multi-ethnic education, such as promotion of tolerance (A.G. Asmolov, A.P. Ilchenko, N. Lebedeva, Sh. Merzoev, E.I. Shlyagina et al.), features the work of teachers with migrant children (Z.B. Bagatova, O.V. Gukalenko), the organization of ethno-cultural education and training (K.S. Akhiyarov, I.A. Arabs, M.M. Bakhtin, Z.T. Hasanov, B.C. Bibler, G.N. Volkov, W.A. Vinokourov, G.D. Dmitriev, V.K. Shapovalov, A.V. Shafikova et al.) are represented sufficiently [1].

Implement ethno-cultural education is not possible without the light of the theoretical and practical issues. The key problem of ethno-cultural education is the formation of ethno-cultural competence.

This term appeared in science recently and does not yet have a single interpretation. For example, in the dictionary "Ethno-tolerant education teenagers in the family" gives the following definition: "Ethno-cultural competence - the degree of manifestation of the personality, skills and abilities that allow it to properly assess the specificity and reaction conditions, relationships with members of other ethnic communities to find appropriate forms of cooperation with them with a view to maintaining an atmosphere of harmony and mutual trust" [2]. Meaning of the term approaches to the content of inter-ethnic (multi-ethnic, cross-cultural) competence in the author (V.L. Kortasheva and V.K. Shtykareva) interpretation of the definition of ethno-cultural competence is a sociological perspective.

We offer the following definition. *Ethno-cultural competence is an integral property of the person, which is expressed in the set of notions, knowledge of native and non-native of Ethnic Culture, their place in the global culture, the experience of mastering ethno-cultural values, which manifests itself in the ability, skills, behaviors in* mono-ethnic and multi-ethnic environment. The essential difference between this definition cultural studies and ethno-pedagogical approaches to sharpen the focus on competence in native ethnic culture and activity-experience master ethno-cultural values on the basis of which is formed by a civilized ethnic and cultural consciousness, devoid of nationalism and ethnocentrism, but having a healthy sense of self-esteem in harmony with a sense ethno-tolerant, and ethno-cultural education is a holistic process of learning and mastering the practical values of popular culture, the culture of the ethnic group in germinating and entering into the world of culture, the process of formation, socialization, education of the individual in the ethnic and cultural traditions. Ethno-cultural education focuses on the culture of the people whose language is dominant in the region.

To date, developed different approaches to ethno-cultural education: acculturation (U. Boos-Nyunning, U. Zandfuks, B.E. Korsunova, R. Khayrullin, O.V. Gukalenko et al.), Dialogue (M.M. Bakhtin, B.C. Bibler, G.D. Dmitriev, H.Tomas, X. Gepfert, U. Schmidt et al.), socio-pedagogical (M. Cole, K. Mullard, S.Troun, A. Memmi et al.).

The analysis of different approaches to the poly-ethnic education identified their basic conceptual ideas and goals:

• to current ideas acculturative approach include ideas ethnic and bicultural education, reflecting the development of interest in their culture and that of others, develop the ability to critically assess the value of each culture, and on this basis to form their own ethnic identity;

• key ideas dialog approach were openness, dialogue of cultures, cultural pluralism, aimed at the development of the human capacity for intercultural communication; the formation of ideas about world of diverse cultural exchange processes and the layered structure of each culture; introduction to different cultures, the formation of planetary consciousness;

• The basic idea of a social pedagogical approach include the concepts of equality and justice, development of the ability to critically perceive stereotypes relating to other people and their cultures; integration of elements of other cultures in their own system of thought; development of empathy, ability to resolve conflicts.

Education, drawing on national traditions of the people, their culture, national and ethnic rituals, customs acts as a condition for the implementation of a multi-ethnic education. Formation of ethno-cultural competence is inextricably linked to the education of ethnic tolerance, as it is a tool, a mechanism to achieve interethnic understanding and interaction. Ethnic Tolerance and Ethno-cultural competence are twofold nature. On the one hand ethno-cultural competence is based on knowledge of the Ethnic Culture and experience in the field of interethnic relations and aimed at mutual understanding. On the other hand ethnic tolerance, based on the recognition and acceptance of ethnic and cultural diversity, enables us to understand other people, to expand the scope of the ethnic experience and knowledge [3].

In studies in cultural studies (S.N. Ikonnikova, N.B. Krylov, A.P. Sadokhin, A.A. Susokolov etc.) Culture of the XXI century is represented, on the one hand, as a global integration process, as a mix of ethnic cultures, and on the other, as the desire of every nation to preserve their identity, their national values, above all – language, art, traditions, customs, their mentality. The collision of these trends manifested in the revitalization of regional cultural forces that are interested in the development of their own, ethno-cultural community and at the same time – to create a unified educational space time. The region. In this connection, the problem is updated ethno-cultural education at all stages of life of people.

Stavropol youth is influenced by a number of factors multiethnic society: the ambiguity of international relations caused by historical events and contemporary crises; interests of the people to their ethnic and cultural heritage; ethno-cultural traditions and lifestyles of the region's peoples and migrants, etc., which requires, first of all, an appropriate teacher training.

The study showed that teachers Territory (73, %)noted the importance of addressing inter-ethnic character. Thus, a questionnaire, interviews and observation of the activities of the teachers showed that 67,9% of respondents had witnessed ethno-conflict situations that are accompanied by mutual insults with national color, disputes over whether representatives of what nationality are old residents of Stavropol steppes; 51,5% of respondents noted friction between teachers of different nationalities, related to lack of knowledge of ethno-cultural features (traditions, customs) of another nationality. In discussing ways to solve these problems, respondents in most appealed to his own experience. Only 15,7% of the teachers knew the history of the formation of intercultural dialogue in the North Caucasus; 19,7% - the story of a multinational Stavropol. With ethnopsychological features of the peoples living in the region, 22,6% of respondents are familiar; 30,8% knew the customs and traditions of the peoples of the North Caucasus and Stavropol. This knowledge was mainly obtained in the process of personal experience, communication in everyday life. Only 19,1% of the respondents turned to the scientific literature; 13,2% – were interested in the problems of interethnic relations, as reflected in the media.

Presented empirical material allowed us to formulate a number of conclusions concerning the features of the position of teachers in the multiethnic region. Teachers with weak understanding of the culture of interethnic communication, had problems making contact with other colleagues from different ethnic groups. At the same time establishing contact took place more successful if the teachers were familiar from their own experience with the peculiarities of the ethnic environment. Rather low level of ethno-cultural competence of teachers, makes continuing education the important condition competent solutions of ethnic problems.

Ethno-cultural competence in line with the socio-cultural phenomenon of competence, cultural approaches allows us to characterize its dual nature. On the one hand ethno-cultural competence emerges as the key necessary modern student, regardless of specialty areas, and on the other, as the basic structure of vocational education students enrolled in a multi-ethnic region. In terms of Stavropol ethno-cultural competence of the student contributes to solving important problems of socio-cultural harmonization of interethnic relations.

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APPROACHES TO THE ORGANIZATION AND MONITORING OF PHYSICAL IMPACTS IN KAZAKHSTAN

Kaidakova N.N. Kazakhstan Agency of Applied Ecology, Almaty, e-mail: kaidakova@mail.ru

Relevance. The need for monitoring of natural resources influence of physical factors on the environment in the Republic of Kazakhstan (RK) is regulated by law. However, the lack of guidance documents for industrial environmental control does not allow to organize the process of the monitoring and its control

Purpose. Develop methodological approaches to the organization and control of monitoring physical impacts on the environment and human health. Determine the types of monitoring, frequency and methodology of conducting.

Review of the literature. The concept of state environmental monitoring as "integrated system of observations on the state of the environment and natural resources in order to assess, forecast and monitor changes in their condition under the influence of natural and anthropogenic factors" is defined in the "Environmental Code", Chapters 14, 16.

The article 131 of the Code establishes the requirements for the development of industrial environmental monitoring (IEM) program.

Duty of subsoil users to control physical effects in normal and emergency situations, environmental quality standards and emission, including the physical effects are regulated by the Environmental Code of Kazakhstan(ECRK) Article 1 item 48, 49, articles 23.25; Resolution of the Government of the Republic of Kazakhstan (RGRK) № 523 items 1.2.7, 1.5.2, 3.17, 3.17.16; Order of the Ministry of Environmental Protection №110-p, section 4, and the order of the Ministry of Environmental Protection №172- p item 3.3.b, Radiation – item 3.1.a.

In accordance with RGRK №523 item 3.17.16 to physical factors provided only operational (EMI).

Orders of the Minister of Environmental Protection, April 16, 2012 № 110-P and 379-number of from December 11, 2013 approved Method of determination of emission standards in the environment. The paper describes a method for air-polluting chemicals. Permissible physical impact and methodology of the inventory of physical impacts are considered in the context of the impact on the air, the document does not contain methods for measurement, inventory forms and other types of reports for physical effects, which creates difficulties in processing the results

Order of the Minister of Environmental Protection, May 31, 2007 № 172-p approved list, forms and terms of exchange of information on the Unified State System for monitoring the environment and natural resources. Ministry of Environmental Protection charged with monitoring for radiation background. Ministry of Health of the Committee of State Sanitary and Epidemiological Surveillance – for the effective dose rate of gamma radiation on the open space, noise in residential areas and the performance of regulatory instruments governing sanitary and epidemiological welfare of the population (Sanitary rules and norms (SRN), hygienic standards).

Methods of study The study used an analytical, historical, normative methods.

The results of the study. At the initial stage of the analysis of legal documents, determine the physical factors that are subject to control.

In all legal documents as a physical factor is described by the noise. In ECRK as physical factors is described as vibration, magnetic and other physical fumes (article 1 item 48). During an emergency expands the parameters analyzed physical factors, which along with the noise, vibration, include radiation, electromagnetic, temperature, light or other physical adverse effects (article 1 item 49). By the standards of environmental quality standards are established in accordance with the physical attributes of the environment, including the maximum permissible levels of noise, vibration, magnetic fields, radioactivity, heat, and other physical effects (Article 23 ECRK). By the standards of emissions are the amount of heat, noise, vibration, ionizing radiation and other physical influences (Article 25 ECRK).

Thus, different regulations and different sections ECRK defined to control different physical impacts.

Conducting environmental baseline studies for the physical factors stipulated by normative legal documents of the Republic of Kazakhstan (RGRK N_{2} 480), as well as monitoring of the effects and issues (RGRK N_{2} 5 23).

Methods of monitoring regulations establishing maximum permissible levels of the corresponding physical factors are presented in Table.

We propose to carry out IEM of physical factors such as operational, emissions and impact on the areas of noise and vibration equipment, sources of electromagnetic and ionization-of ionizing (radioactive) radiation: rigs, drill cuttings, generators, pumps, etc 1 times per year. Projects can be use materials of current control of other organizations: the Agency for Consumer Protection, Materials Inventory physical effects, PSLAL, Certification of workplaces.

With group arrangement of artificial structures to carry out measurements on the distal location of the islands in 4 geographic areas.

The list of controlled physical factors is made using natural resources.

Operational environmental monitoring of the radiation situation in the performance of planned drilling operations, as well as in areas receiving Normative documents RK on methods and standards of physical impacts

trap and temporary storage of oily sludge, temporary storage areas of equipment with sources of ionizing radiation.

During the IEM are taken into account the observations of previous years.

The results of industrial monitoring of physical factors are made in accordance with the lists, forms and terms of the exchange of information on the management, approved by the Order of the MEP № 172-p of 31.05.2007 "United State monitoring system of environment and natural resources" and are used to assess the state of the environment within the reference to a common methodological basis.

Physical factor	Operating Area		On sanitary protection	n and residential area
	Methods for deter- mination of	Standards	Methods for deter- mination of	Standards
Noise	SSRK 12.1.050-86	SSRK 12.1.003-83	SSRK 23337-78	СН РК 2.04-03-2011
Vibration	SSRK 31319-2006 SSRK 31192.2-2005	RGRK № 168 SSRK 31192.1-2004	* SSRK 31191.1- 2004 (ISO 2631- 1:1997) SSRK 31191.2-2004 ISO 2631-2:2003	**
The electromagnetic field industrial frequency	SRK 1150-2002	SRK 1150-2002	SRK 1150-2002	SRK 1150-2002
The electromagnetic field radio	SRK 1151-2002	SRK 1151-2002	SRK 1151-2002	SRK 1151-2002
Electrostatic fields	SRK 1149-2002	SRK 1149-2002	-	-
The electromagnetic field workplaces opera- tors of personal comput- ers and video display terminals	RGRK 1430	RGRK 1430	_	_
Microclimate	SSRK 12.1.005-88	SSRK 12.1.005-88 RGRK № 168	_	-
Illumination	SSRK 24940-96	BCRK 2.04-02-2011 RGRK № 168	_	-
Ionizing (Radiation Incident)	Order of the Chair- man of the Commit- tee of State Sanitary and Epidemiological Surveillance 8 Sep- tember 2011 №194 Guide P 2.2. / 2.6.1. 1195 – 03	RGRK 201	Приказ 194	RGRK № 202

N o t e s : * SRN 3.01.032-97 № 3.05.038-97, ** SRN № 3.01.032-97.

The frequency of monitoring and reporting Annual (in four climatic seasons (Article 269 ECRK) taking into account conditions of operation of the state conservation area north of the Caspian Sea. Propose to reduce to 2 times a year;

Reporting – Annual consolidated as part of the monitoring report in-ones for 3 months after the reporting period

Conclusions. We have recommended:

- monitor physical factors conducts as emissions, operational and impact;

 list of physical factors to determine the presence of sources;

- use materials of current control of other organizations: the Agency for Consumer Protection, Materials Inventory physical effects, PSLAL, Certification of workplaces;

- When planning to use the TEM physical effects designed scheme developed by us;

- Multiplicity of environmental control 2 times during the warmer months;

- Always conduct baseline studies.

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6. Standard ISO / IEC 17025-2009 General requirements for the competence of testing and calibration laboratories, General requirements for the competence of testing and calibration laboratories.

7. GOST 24940-96 Buildings and and facilities Methods of measuring light.

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9. RGRK dated 18 April 2012 N 480 On approval of rules of organizing and conducting baseline environmental studies in conducting petroleum operations in the Kazakh sector of the Caspian Sea.

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Materials of Conferences

OPTIONS FOR IMPLEMENTATION OF INNOVATION STRATEGY OF THE PRIMORSKY TERRITORY

Guremina N.V., Zhivotov V.A., Smirnov V.P. Far-Eastern Federal University, Vladivostok, e-mail: innov-man@yandex.ru

Dynamically developing in the resent years, Primorsky Territory is more and more being positioned in the global geopolitical space as a large world logistic center, as a link between accomplished long ago Europe and Pacific Part of the Globe. The innovative way of the global development has already got obvious and non-alternative for everyone. In this context identification of the strategy of innovative activity of Primorye, equally considering today's and future economic, social and other types of resource abilities of the Primorsky Territory, dynamics of integration processes and trajectories of migration of the world's leading centers, becomes extremely important.

As matter of principle, there exist 3 possible variants of region's innovative strategy typification. The strategy can be of "developments-production" type when the main activity is directed to development of innovations, and the region "makes" money by bulk selling of innovations produced here. The strategy may have an "industrial" character – when the region mainly buys the innovations and widely uses it for modernization of producing economic sectors, and the basic region's income is formed through the growth of gross product by increase of "innovative component" in the overall production. And finally, the last possible type of strategy is an "intermediary" one, when the region is not involved either in mass production, and targeted to provide a dynamics of innovative movement through the region, making the profit of broker's intermediation margin for the services in providing high pace and progressive motion pattern.

The region, which chosen the intermediary strategy of development, is responsible for formation of innovative markets, and not only inside of these markets, but also outside of them. It should be mentioned that none of these strategies could be applied in their "pure form" in the region. Even if one strategy will dominate over others, it will have the elements of the rest two types for sure. It is in identification of the prevailing strategy, where the problem lies.

The Primorsky Territory being the great Russian scientific-educational center, in Soviet times produced considerable number of developments, many of which are fore sure significant innovative products of good pretty good level. Alongside with that we have to admit that these are single developments, without having mass production and high prime cost. That's why the course to positioning the region as a producer of innovative developments won't be able to provide an inflow of material resources, required for accelerated pace of development. Besides this, orientation to a "developer's dominant" will require the structural changes in the regional science and high material and span expresses.

The positioning of the region as a mass consumer of innovations ("industrial" strategy) is closely connected with the prospects for development of "producing" economic sectors. At the current times, the region's economy has a resource nature. Great natural resources of the Far-East and also the presence of neighboring countries, mass producing hi-tech equipment of quite high level to meet the needs of "rawmaterial economy", are not a great impetus for production diversification, creation of requirements in modernization having an innovative character. That's why we can anticipate that there will be insufficient demand for innovations for a long time.

The Primorsky Territory for many years has been conducting mediation activities according to plans of the region's administration and will just developed to future. These include both transport services and existing types of transport (sea, automobile, air and railway), one more type will added, namely - pipeline transport, and intensively developing tourist business. Traditions of mediation activities, a kind of intermediary - oriented way of thinking, stereotypes and procedures were formed long ago in the region. Nowadays Primorsky Territory is positing as a large logistic center of the world level. It would be quite natural to strengthen this positioning by adequate innovation component [1]. In doing so, it is reasonable to have the same-types strategies, complying with the general conception for different economic sectors of Primorye.

That's why the intermediary type of the innovative strategy is an optimal one for the region. Adoption of the "intermediary" strategy implies that the region creates the mechanisms and tools to provide dynamics of innovations movement, engaged in this movement its own developments and getting from the movement innovations for implementation in own enterprises.

This is proved by the following facts:

1. Developing of APEC-oriented innovative infrastructure absolutely meets the interests of Russia in the Far-East.

2. Development of the innovative activity of the "intermediary" type in Primorsky Territory absolutely complies with the priorities of the social and economic development.

3. Vladivostok has the highest potential for intensive development and promotion of the hi-tech innovative business in the international level.

4. The most important for Russia and for regional economy directions have been set at the most prospective from the viewpoint of scientific, production and personnel potential for development in Primorsky Territory.

5. Increase level of financial and economic sustainability of the region minimizes the risks related to financial aspects of the strategy realization.

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Materials of Conferences

NORMATIVE-LEGAL BASIS OF MUNICIPAL PERSONNEL POLICY

Alibaeva L.I., Pendyukhova G.K. Branch of "Moscow Psychologic-Social University", Sterlitamak, e-mail: sterlitamak@mpsu.ru

Normative-legal basis of municipal personnel policy is formed of federal, regional legislation and regulative documents of local authorities.

One of the basic legal acts that regulate municipal personnel policy is federal law dd. 02.03.2007 № 25-FZ "On municipal service in Russian Federation". It defines basic principles of staff policy [1]. Even brief analysis of case 28 shows us that functions of personnel work have expanded significantly. The range of problems that stand before staff service is differentiated and detailed. Nowadays it regulates not only staff problems such as picking, selecting, and rotating employees, preparing projects of orders on problems of passing municipal service, but also problems of organizing municipal service and personnel management - performing competitions, attestations, etc., problems of controlling and overseeing over employees - checking data on income, following limitations and prohibitions, social problems maintaining social guarantees, legal problems consulting employees on law.

Staff policy of local authorities is also formed according to Federal law dd. 25.12.08 № 273-FZ "On reaction to corruption" that sets basic principles of reacting to corrupt practice, legal and organization foundation of preventing corruption and fighting it, minimizing and neutralizing results of corrupt violations [2] and it refers to republican regulative basis and, first of all, law dd. 16.07.07 № 453-z "On municipal service in Republic Bashkortostan" that is aimed to regulate relating in the area of municipal service within authorities of Republic state bodies, fixed be Federal law № 23 and does not keep force for status of deputies, members of the selected bodies of local authority, selected placemen of local authority, members of election commissions of municipal formations who act on regular basis and are legal people with the right of deciding vote, since the listed are not municipal servicemen [3].

A defining aspect of staff policy is the fact of accepting order of President of Republic Bashkortostan dd. 02.10.12 № UP-378 "On concept of personnel policy within the system of state bodies and local authorities of Republic Bashkortostan" [4].

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CRIMINAL LIABILITY OF SERVICEMEN

Nikolaev M.P., Pendyukhova G.K.

Branch of "Moscow Psychologic-Social University", Sterlitamak, e-mail: sterlitamak@mpsu.ru

Crimes against military service are usually aimed against the fixed order of passing it. They can be committed by servicemen who serve on obligatory or contract basis in Armed Forces of Russian Federation and also by citizens who are in reserve and serve their assembly. Making servicemen answer to their criminal liability is carried out according to the Criminal code of Russian Federation (CC RF). A necessary sign of a crime against military service is its direction, aimed against the order of passing it, fixed by Federal laws "On protection", On military duty and service", "On status of servicemen", and also other federal laws, general military codes and normative regulation acts of Russian Federation. Crimes against military service, specified by CC RF refer to different sides of the fixed order of passing it.

Service men bear criminal liability for committing general crimes and crimes, aimed against military service. A foundation of criminal liability of servicemen as well as other citizens is committing a crime, specified by CC RF. A formal diversification of crime categories is punishment period, as well as form of guilt for grave crimes. Specifics of a crime, aimed against military service are defined by peculiarities of the encroachment object and its subject. The main object of a crime against military service is the order of passing it. Strict observance of this order forms the essence of military discipline and is aimed to establish military safety of a state. A person who committed a crime at the territory of Russian Federation is exposed to criminal liability in accordance with CC RF. Crimes, committed within the limits of territorial waters or aerial space of Russian Federation, are acknowledged as ones, committed on its territory. Servicemen of Russian military bases who are located outside of the country bear criminal liability according to CC RF for crimes, committed at the territory of a foreign country in case different is not implied by an international agreement of RF. Criminal liability takes place not only for the committed crime, but also for attempt at it, and, sometimes, ever preparation for it. A serviceman does not bear criminal liability if they refuse to finish a crime on voluntary and complete basis. For committing general crimes servicemen bear criminal liability in accordance to a Special part of CC RF that includes

norms that define signs of specific types of crimes and set punishment for people who are guilty for committing these crimes.

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Materials of Conferences

USING SYNERGETIC THEORY OF INFORMATION FOR STRUCTURAL ANALYSIS OF TEXTS IN THE ASPECT OF THEIR RANDOMNESS AND ORDER

Ospanova B.R., Azimbayeva Z.A. Karaganda State Technical University, Karaganda, e-mail: o.b.r@mail.ru

The article deals with studying synergetic theory of information for structural analysis of texts from the aspect of their randomness and order. In the work there are reflected the results of studies which purpose was the use of the information quantity measure that permits to analyze common mechanisms of the texts information-and-entropy characteristics lying in the base of all spontaneously running in the surrounding world processes of information accumulation that lead to the system structure self-organization.

The object of this study is a text as a multilevel natural object developing according to the synergy laws. A synergetic process in linguistics is evolving and assists the language enrichment, as the introduction in the language of synergetic ideas replenishes the language vocabulary with new definitions, categories, terms, that imposes its internal transformation and by this forms linguistic-synergetic scientific trends.

Studying the text hierarchic structure and methods of its information analysis is one of those urgent problems that are dictated by the need of using an objective, quantitative assessment of the grammatical system and semantic-and-syntactic organization of the text, as well as in the comparative analysis of kin and non-kin languages. In this aspect there was carried out the information-entropy analysis of a large mass of present day texts belonging to different genres, subjects and styles of the Kazakh language.

The approach to the text as to a hierarchic system permits to consider the text both from the point of view of its components analysis and from the point of view of their synthesis at the highest language level. In the home science the idea of the text integrity as of a hierarchically organized structure was for the first time presented by N.I. Zhinkin. "Any speech, – he noted, – can be reduced to a system of predicates that, consistently complimenting each other, reveal the structure and the ratio of the signs of the unknown before object of reality". "The text, – he wrote, – is separated into a hierarchic network of subjects, subsubjects, sub-subsubjects and micro-subjects"[1].

Thus, a text is structured according to certain laws integrity, consisting of the language units, i.e. sentences combined by a single subject and forming larger units, superphrase unities, thematic pieces of the text, paragraphs, chapters, sections, etc. that serve for presenting a certain completed content and some information. When defining the information quantity there is considered the text that consists of letters, words, word combinations, sentences, etc. Each letter occurrence is described as a consistent realization of a certain system. The information quantity expressed by the indicated letter in its absolute value is equal to the entropy that characterized the system of possible choices and that was taken off as a result of selecting a certain letter.

It is known that for entropy calculation it is necessary to have the complete distribution of possible combinations probabilities. Therefore for entropy calculation of this or that letter it is needed to know each possible letter occurrence probability.

The language entropy is an important for linguistics measure. Entropy is a common measure of probabilistic-linguistic ties in the texts of a certain language. In this connection there was carried out comparison of the data characterizing the numerical estimation of these measures in Kazakh.

The information-entropy analysis of the text structure was carried out based on Shannon's entropy using the formula of probability classic determining.

In the general characteristic of the entropy-information (entropy is a measure of disorder, information is a measure of disorder elimination) analysis of the texts there was used Shannon's statistical formula for determining the text perfectness, harmony:

$$H = -\sum_{i=1}^{N} p_i \log_2 p_i , \qquad (1)$$

where p_i is probability of detecting any system unit in their totality N; $\sum_{i=1}^{N} p_i = 1, p_i \ge 0, i = 1, 2, ..., N$.

texts containing 500 characters of scientific, journalistic, official, informal and artistic styles of the Kazakh speech.

To calculate the texts information there were counted the probabilities of occurring one letter, twoletter, three-letter, four-letter, five-letter and six-letter combinations. In counting there were taken into account 43 letters (42 letters, 1 blank) of the Kazakh alphabet, all the rest characters (brackets, quotation marks, commas, etc.) were not considered. Numerical data contained in the text are written in words.

The calculation of probability (p) of different letters occurrence in the text is achieved by calculating a relative frequency of individual letters. To determine the probability of occurring one letter in the Kazakh text there was used the classic formula of determining probability:

$$P(oneletter) = \frac{m}{n}$$

P is a relative frequency;

M is the number of one letter occurrence in the text; n is the number of all letters occurrence in the text.

As a result for the Kazakh language there were obtained the following values (in bits). Then, according to Shannon's formula

$$H_0 = \log 43 = 5,4$$
 bit,

where H_0 is the maximum value of the text entropy consisting in receiving one letter of the Kazakh text (information contained in one letter) under the condition that all letters are considered equally probable.

When summarizing, we'll note that on the basis of Kazakh texts there were obtained the information characteristics of the letters that are in different positions; there were obtained the letter distributions of the text entropy, and given the possibility to estimate quantitatively the information ratio in the text. This permits to come to the conclusion that information entropy can be used to any language for revealing the information distribution in the text.

Entropy distribution in the Kazakh text											
Entropy (E)	Scientific style of speech (SS)	Journalistic style of speech (JS)	Official style of speech (OS)	Informal style of speech (IS)	Artistic style of speech (AS)						
H_1	4,3598	4,4253	4,3443	4,3873	4,3438						
H_2	2,3444	2,7267	2,6006	2,7843	2,7468						
H_3	0,852	1,0687	1,0225	1,0557	1,2596						
H_4	0,2813	0,3301	0,2665	0,3187	0,414						
H_5	0,1882	0,1198	0,2012	0,1265	0,1091						
H_6	0,1657	0,0657	0,095	0,056	0,0414						

From this there can be concluded that the dynamics of the text information entropy reduces when transiting to the higher level of organization; at this the text information content increases that proves the language development according to the law of preservation the sum of information and entropy.

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PROFESSIONAL LINGUISTIC TRAINING OF A NON-LINGUISTIC COLLEGE STUDENT WITHIN A SYSTEM OF MULTI-LEVEL EDUCATION

Pendyuhova G.K.

Branch of "Moscow Psychologic-Social University", Sterlitamak, e-mail: sterlitamak@mpsu.ru

Official documents of UNESCO identify educational system of Russia as a unique one for its fundamentality, scientific potential of the country remains high, regardless of the "lack of brain".

Russian fundamental education was created at foundation of knowledge paradigm. Many years of

practice have revealed significant disadvantages of this approach.

Comparative researches of education quality among university graduates of post-Soviet countries (Russia, Belarus, Ukraine) and developed countries of the West (USA, France, Canada, Isreal), carried out by the World bank, have established that our students show very high results (9–10 points) according to such criterions as "knowledge" and "comprehension", and extremely low scores according to criterions "practical application of knowledge", "analysis", "synthesis", "evaluation" (1–2 points). Students from developed Western countries demonstrated completely opposite results [1].

According to objectives of Bolognese process, a review of state of qualifications in Russian education took place at the foundation of training professionals for a specific labour market in continuously complicating post-industrial society.

An employer prefers graduates with a good linguistic training who have an expertise in their professional area, feel comfortable in a linguistic environment and possess skills of communicating with foreign colleagues in context of professional activity.

In terms of multi-level educational model a problem of increasing efficiency of foreign language training among future specialists can be solved not only through organizational methods, but also via selecting the correct methodical strategy [3]. This strategy can involve linguistic-didactic, psycho-linguistic, and other aspects of linguistic training at each stage of education: profile class of

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primary school – junior years of university – senior years of university – specialization.

An experiment of combining a well-known concept of the "European linguistic portfolio" with the described strategy proves to be interesting. In terms of such combination methodical succession in multi-level educational model creates all conditions, required to motivate students for self-education and increase in their activity within the process of training while communicating with a tutor, thus making it unnecessary for the letter to give additional explanations to students and allowing them to predict the expected effect more reliably. The concept of "linguistic portfolio", in its turn, gives one a chance to carry out continuous observation over educational process regardless of quantitative composition of academic groups, estimate efficiency of a certain methodical tool in qualitative characteristics.

Convergence of countries via implementing different programs that are carried out by UNESCO nowadays, will help students to realize the necessity of mastering foreign languages in order to organize their life and professional space.

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THE PERSONAL-SITUATIONAL APPROACH IN PROFESSIONAL-LABOUR SOCIALIZATION OF STUDENTS

Krasnopyorova A.G. Krasnodar technical college, Krasnodar, e-mail: a_g_k@mail.ru

Changes in formation, in particular, occurrence in Bolonsky process, have caused new accents in activity of average vocational training. In this connection priority enough direction is in professional – labor socialization of students of colleges, revealing of its motive forces.

The given theme represents considerable interest for educational practice as results of the conducted research can become the basis at construction of the maintenance of process of professional – labor socialization of students in the conditions of the educational environment of colleges.

We define criteria and indicators of professional-labor socialization of students of technical college: socially-adaptive, estimate-notional, cognitive-effective criteria. The stage-by-stage structure of continuous process of professional-labor socialization of students in a technical college, consisting in formation of representations about a trade, familiarizing with professional work, mastering by professional processes is offered.

Our research is constructed in a logician of design research, in particular modeling of professional-labor socialization of students of the technical college that can be a new design of educational process of a college.

However, though K. Levin, J. Bruner, U. Thomas, D. Leontev, N. Grishina, K. Levin and Sikurel wrote about personality both V.Thomas and Magnuson considered the situational approach in existential reality situations, we adhere to Z. Piazhe's theory (Geneva school of psychology of man's development) in which it is considered that a person passes a number of informative periods which show characteristic for each stage ways of thinking of a person: concrete operations, formal operations, preoperational thinking, sensitive motto intelligence. Unlike E.B. Titchnera's empirical approach which considered all human mental experience as set or a combination of simple processes or elements [2, 325], the conscious theory, Z. Piazhe's developments considered structure of visualizations of a person underlying intelligence, adaptive models of behavior which is characterized "as sequence of quasilogic and logic stages" [2, 325] through when a person passes on a way to logically formal operational level. We support Claude Levi-Strossa's point of view characterized by the sociological, anthropological approach that in the attention centre by consideration of stage-by-stage development of a person there are social organizations and social structures and that, "as members of a civil society

acquire them and as to them react" [2, 325]. Thus, in the image, at youthful age the general and special abilities of a person on the basis of activity principal views develop: studying, dialogue and work in which general intellectual, communicative abilities are formed, and there is a formation in labor process of practical skills which will improve further professional, special abilities necessary for development of their future trade and personality of a man.

According to the social pedagogic dictionary by L.V. Mardahaev *personality* is the "ability of a person to be the strategist of the activity, to put and correct the purposes, to realize motives, independently to build actions and to estimate their conformity conceived, to build plans of future life [1, 300].

Together with it by L.V. Mardahaev the *situation of social development* is "system of relations of a man specific to everyone age period in the social validity, reflected in its experiences and realized by it in joint activity with other people" [1, 266]. This concept has been first used by L.S. Vygotskiy.

Therefore unlike the situational approach under the big sensible psychological dictionary by A.C. Reber, characterized as the approach "to management and a management of people in which it is underlined that there is no uniform certain set of skills which does leadership optimum in all situations", and "various situations and circumstances are faster demand various skills, and in different situations different types of people will correspond is better a role of a manager or a leader" [2, 252], we consider the personal-situational approach presented by us as set of pedagogical receptions, methods of use of psychology-pedagogical toolkit for a harmonious combination conscious actions, formation of valuable orientations and creation of interrelations in a disposition "a student - a teacher", "a teacher - a student", the realized communications of subject knowledge consisting in activation with formed is professional-labor representations, in increase of level of conformity of formed knowledge and abilities and corresponding educational actions to professional-labor social norms, in ordering of control the level of conformity of the generated qualities to these norms.

In professional-labor socialization of students professional, social qualities that were helped by an educational situation in the form of educational functional system optimum changed. Teachers aspired to optimize communications of training with manufacture. In tasks professional-labor inclusions were included for this purpose developed for practical works. In them labor situations from region branches were used. We develop structure of interrelations in functional pedagogical system of professional-labor socialization.

Thus, the consciousness of a teacher co-operates with the consciousness of a student and an object of its activity. The teacher informs the student

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what it is necessary to do. It transferees information on a task in view on professional-labor socialization from consciousness of the teacher to student's consciousness. The student during this moment is in some current condition of professional-labor socialization. In this condition the object of action is shown to the student. In the course of activity it repeatedly meets a number of the objects which are components of object of its activity. The object getting in the field of attention of the student in a condition of representations 1 is shown as a component of object 1. Each component can be both material, and ideal. The student carries out action in a condition of representations 1 therefore some property is shown, more precisely, a property component of professionally-labor socialization which is designated as property of professional-labor socialization 1. It is what the student has expected, carrying out actions. The information on this property, arriving in consciousness of the student, it is enriched and is passed in a condition of representations 2. The information on results of this action in the formalized kind arrives to the teacher, it is fixed by its consciousness, and it can submit to the student the additional information correcting its actions or stimulating them. Further process repeats, and at the student corresponding professional, social quality gradually is formed or is developed. The teacher, using the personal-situational approach, can apply different receptions of creation of situations: to induce, theoretically to explain the facts, to make use of experience of reality situations, to search for application of results of problem tasks, to put problems, to solve a problem of industrial situations, spontaneously arisen situations connected with the inexplicable facts, to show the different points of view, to ask questions of alternative type, to give tasks which will happen.

The system of professional-labor socialization of students of technical college took root according to the plan of pedagogical experiment, the organization, methodology and a research technique. The experiment check of the model was carried out in Krasnodar technical college.

Experimental work was spent to some stages: ascertaining, forming, analytical.

During pedagogical experiment the problem was put: by means of the personal-situational approach and interactive forms of work with students to change their professional, social qualities, to develop their professional preferences, interests, motives, requirements and move them on desire to have individual style in work, to develop abilities quickly to come into contacts in new collective, to analyze circumstances and quickly to make correct decisions, to put the theory into practice and by that to be socialized in society.

As interactive forms of work with students on the further development of their professional preferences, in professional-labor sociality, sensibleness of their professional-labor self-determination following forms of work are applied: Internet projects, presentations on professional themes, trainings "I and the collective of a group", "The responsible relation to business", debates "What work resources are necessary to Krasnodar territory?", "What values will you prefer in life?", whether "Is it necessary to choose future trade needed to a society, the vital status and security of its representatives?", collectively-creative affairs "We do together", "We learn to work in a command", "We reach the purpose together".

During experiment testing on students' professional development by the criteria of professionallabor socialization in which have taken part from experimental group has been held: 61 students before experiment (experimental group before experiment– E-b) and 156 students after experiment (experimental group after experiment – E-a), from control group: 49 students before experiment (control group before experiment – C-b) and 125 students after experiment (control group after experiment – C-a) (see table).

The results of pedagogical research have shown that after profound pedagogical work of all pedagogical collective of the college on consciousness of professional-labor self-determination of students, development of their professional-labor socialization (by means of debates, fairs of vacancies, collectively-creative affairs, meetings with veterans of manufacture, masters of business, trainings, class hours, letters to a friend, celebrations of veterans of work, excursions to manufacture, the technical competitions, creation of breadboard models, an electric equipment, a cycle of compositions, competitions of abstracts) there was a considerable growth of professional-labor socialization of students.

Testing by *socially-adaptive* criterion has revealed the greatest difference between the results of control and experimental groups on following parameters:

- Professional and labor adaptation in collectives (the indicator has grown on 42,0%);

- Mastering by various kinds of professional work (on 16, 4%).

By *estimate* – *notional* criterion the greatest difference between the results of control and experimental groups has occurred on following parameters:

- The responsible relation to business (has increased on-19% - a zone of the present development of students);

- Spiritually and moral development and creative self-development of a man (has grown on 4,5%);

- The reference of professional knowledge in ability (has increased on 45,5%).

By *cognitive-effective* criterion the greatest difference between the results of control and experimental groups is fixed on following parameters:

- Professional competence (has raised on 37,1%);

- Business communications (has increased on 43,5%);

– Management of the vocational training (has grown on 35,4%).

The results of pedagogical experiment allow to draw a conclusion that the zone of the nearest development of students consists in cooperation of cultures, in a choice and acceptance of labor values and vital senses of the chosen trade, in spiritual and moral development and creative self-development of the person, in adaptive management of the further vocational training, in constant labor self-education during all labor human life.

During experiment valuable orientations of students of the experimental group were developed.

Monitoring of the criteria of professional-labor socialization of students, %											
Criteria of students' professional-labor socialization	C-b	C-a	differ- ence	E-b	E-a	differ- ence	The result				
Socially-adaptive criterion											
Love to the additional literature by the											
chosen trade	63,3	57,6	-5,7	63,8	71,8	8,0	13,7				
Individual style in work	100	72,0	-28,0	65,4	69,3	3,9	31,9				
Speed of adjustment contacts in new											
collective group	95,9	64,0	-31,9	63,6	73,7	10,1	42,0				
Ability to change the activity on de-											
mand	59,2	58,4	-0,8	45,4	53,9	8,5	9,3				
Ability to seize adjacent specialties	75,5	72,0	-3,5	67,2	80,1	12,9	16,4				
The general indicator	78,8	64,8	-14	61,1	69,8	8,7	22,7				
Estimate-notional criterion											
Adherence to universal values	95,9	99,2	3,3	81,9	89,7	7,8	4,5				
Responsibility in business	51,0	72,8	21,8	48,5	51,3	2,8	-19,0				
Constant spiritually and moral develop-											
ment of a man	57,1	53,6	-3,5	43,9	44,9	1,0	4,5				
Ability to analyze the passed day	30,6	29,6	-1,0	34,1	52,6	18,5	19,5				
The general indicator	58,7	63,8	5,1	52,1	59,6	7,5	2,4				
Cognitive-effective criterion											
Application in practice of a studied											
studying material	69,4	41,6	-27,8	61,8	79,5	17,7	45,5				
Love to search additional material of											
future trade in Internet, in professional					<i></i>						
magazines	71,4	44,0	-27,4	53,8	63,5	9,7	37,1				
The aspect analysis, what additional	(0.4	(1.0		(0 न	70.1	10.4	17.0				
knowledge are necessary for the further	69,4	64,0	-5,4	60,7	73,1	12,4	17,8				
professional-labor socialization											
Love to dialogue on themes of the cho-	714	25.2	26.2	671	74.4	7.2	12.5				
Constant requirement to work work	/1,4	55,2	-30,2	07,1	/4,4	7,5	43,3				
motivation	837	60.6	1/1 1	67.0	72.2	62	20.3				
Definition of orientation of the further	83,7	09,0	-14,1	07,0	13,2	0,2	20,3				
professional-labor socialization	69.4	36.8	_32.6	38.9	417	28	35.4				
The general indicator	72.5	48.5	_20.9	58.2	67.6	94	30.3				
Total indicator	70.0	50.0		57.1	65.7	9, 1 86	10.6				
	70,0	39,0	-11,0	57,1	03,7	0,0	19,0				

In educational process of college interdisciplinary communications, character and complexity of disciplines were considered; new forms of carrying out of lessons were used. The technique "Valuable orientations" by M. Rokich in which the beliefs diagnosed by means of the method of direct ranging, are named by values were used. For research have been generated experimental (20 people) and control groups (54 people). As a result of experiment values "knowledge (possibility of expansion of the formation, an outlook, the general culture, intellectual development)" have statistically significantly raised: in experimental group (p < 0,03) with 8th to 6th rank, in control (p < 0,01) – with 12th to 11th rank. It has occurred most likely thanks to introduction in experimental groups of such forms of work, as debates, brain storms, business games, discussion of industrial situations.

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Values "development (work on self, constant physical and spiritual perfection)" has statistically significantly risen: in experimental group (p < 0,01) with 9th to 6th rank, in control (p < 0,01) – with 12th to 11th rank. Such indicator in experimental group became possible as a result of training of students with use of Internet resources, problem training, and the subject – situational approach.

Values "responsibility (call of duty, ability to keep the word)" in experimental group is statistically significant (p < 0,06) have risen – with 10th to 7th rank, in control group is statistically significant (p > 0,05) have gone down – with 7th to 9th rank). It has occurred because in experimental group meetings with leaders of manufacture were held, industrial situations were discussed, and students were involved in manufacture of subjects on the future specialty, the edition of methodical grants for students, to participation in projects on professional subjects.

Thus, it has been empirically confirmed that educational process causes changes of separate values of students, and using of active and interactive forms of carrying out of lessons and the personal-situational approach influence the process of professional-labor socialization of students.

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