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THE PECULIARITIES OF QUALIFIED BOXERS’ MORAL - VOLITIONAL QUALITIES FORMATION

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Keywords: boxing, 15-17 year old youth, sport training, a methodology, pedagogical experiment.

Annotation. Specialists in boxing, coaches, highly qualified sportsmen acknowledge the need for the boxers’ moral-volitional and ethical qualities formation and at the same time in practical activity main attention pay to physical and technical – tactical readiness. Such kind of approach doesn’t provide effective training and competitive activity, realization of the kinesiological potential of the sportmen. In terms of a conceptual thesis of A.N. Leont’ev (1984), about consciousness and activity unity, moral-volitional qualities demonstration is the function of the whole organism as the motor-coordinating qualities indices increase, an organism’s functional state and technical – tactical readiness improvement.

Research methods: scientific and methodical literature analysis and summarizing, testing, pedagogical experiment, methods of mathematical statistics.

Materials. The article reveals the role of moral-volitional qualities as one of the main structural components of the wrestlers’ sport training system. The research materials, presented in the article, allowed to reveal the most important moral-volitional and ethical qualities which influence reliability and stability of competitive activity and reveal the orientation and notional content of the studied personal parameters.

Results. The author created the methodology of the boxers’ main moral-volitional qualities formation, taking into account the specificity of their development in the process of interaction with an opponent. Such kind of approach to moral-volitional qualities study allowed to create informative evaluation criteria of the degree of their formation, approved during the pedagogical experiment. This allowed to reveal different approaches to self-control, perseverance, diligence, resolution upbringing and formation of other qualitative personality parameters.

Conclusion. The pedagogical experiment results showed the expediency and effectiveness of the created methodology in the process of mastering the technique of onrushing and defensive actions; the development of the leading moral-volitional qualities has a great influence on sportsmanship improvement of qualified boxers.

Introduction. Among different kinds of sport boxing takes a special place as each battle on a boxing ring is a great trial for a sportsman with possible harmful effects for health. During the onrushing strikes into a lower jaw, a bridge of a nose, a carotid artery and other points of tenderness often appears the state of knock-down or knock-out with loss of consciousness in case of pain shock. During the onrushing technique into a solar plexus we feel sharp pain, respiratory standstill, heart rate slowing, blood pressure reduction. Splanchnic nerve ending stimulation influences the motor center vessels state and also the center of heart nerves, providing shock with heart activity inhibition. Recurring knock-outs are able to provoke hard nervous activity disorders, that is why the boxers after a knock-out during a definite period of time are not permitted to compete. During the boxing combat in some rounds the working capacity of a wrestler achieves such high indices that the break between the combats is not enough to restore an organism. The
boxer has to continue the combat in the state of oxygen deficiency and other functional changes which are connected with volitional qualities demonstration. To avoid a knock-down or a knock-out or to decrease the strength of the opponent’s onrushing strike a person should:

- avoid timely powerful strike extending the distance;
- use effective defensive techniques (bents and others).

Realization of these ways of avoiding a knock-down or a knock-out is determined by a high level of technical – tactical mastery which allows to foresee an onrushing technique according to initial preparatory actions. Then a boxer preserving a maximum self-control has to undertake timely actions which will help to avoid an attack and to fulfill a powerful counter-attack [4, 5, 7].

The aim of this research work is theoretical and methodical substantiation of the moral-volitional qualities role and place in boxers’ sportsmanship improvement.

**Objectives:**

1. To reveal the most important moral-volitional qualities which are necessary for a boxer to defeat an experienced opponent.
2. To create a methodology of the leading moral-volitional qualities formation and to check its effectiveness during the pedagogical experiment.

The effectiveness of a boxer’s actions is mainly determined by the development level of speed – power qualities. A wrestler’s muscles should develop a considerable power which provides the power of an onrushing strike with further quick contraction and relaxation. High speed and suddenness of a strike doesn’t let an opponent to react adequately and to fulfill timely effective defensive techniques. Therefore the speed of a boxer’s motor reaction is one of the important parameters of his technical – tactical readiness [2, 4, 8].

Quickness of the actions is determined by a difficult cycle of neuro–physiological and bio-mechanical processes; by the skills of muscles power allocation necessary for a round and for a combat in general. The speed of the techniques fulfillment is mainly determined by the work of a peripheral motional apparatus with its difficult multisectional kinematic system and depends on the activity of heterogeneous central mechanisms of motions control which are on different levels of a central nervous system and which are presented as a hierarchical system of control. The central mechanisms include motional and vegetative centers which provide the correspondence of motions intensity to the level of vegetative processes and the sensory centers which control and resolve the fulfilled actions [8, 9].

The demonstration of speed qualities is connected with a boxer’s psycho-emotional state, a determined type of a nervous activity, a character and the magnitude of external and inner stimuli, a level of volitional qualities formation, an ability to resist stress situations. Thus the speed of motional reaction is the function of the whole organism.

A purposeful, systematic formation of moral-volitional qualities is an important part of the boxers’ sports training system. As the leading specialists mention, the main moral-volitional qualities of the wrestlers are the following: self-control, persistence, diligence, discipline, determination and courage [3, 5, 6].

Each moral-volitional quality is difficult according to its content, has several structural elements (picture 1) and is evaluated according to corresponding criteria. The development and perfection of these personality qualities was fulfilled during the application of created by us methodology which includes use of special evaluation criteria approved during the pedagogical experiment.

During the boxing combat the degree of the leading moral-volitional qualities demonstration according to 5 points system was determined. The main characteristics of each quality demonstration were evaluated.

**Evaluation criteria:**

**Self-control**

5 points – preservation of steady positive psycho-emotional state during the interaction with a powerful, experienced opponent after a missed strike. A rational technique of motional actions in
case of tempo- rhythm parameters change of motional actions; an opponent’s actions control and use of effective defensive techniques in case of attack; an individual motional rhythm preservation after the series of onrushing techniques of an opponent;

4 points – quick return to a normal psycho-emotional state after a missed strike; a high level of orientation in space and time under the influence of negative factors; control of the situation; an individual motional rhythm renewal after the series of onrushing techniques of an opponent, rate of movements increase during a counter-attack;

3 points – psycho-emotional state decrease after a missed strike; a low level of orientation in space and time, an opponent’s actions control to the end of the round; rate of movements increase after an opponent’s attack during the first round;

2 points – psycho-emotional state control before the first missed strike, movements tempo and rhythm decrease during the opponent’s attack, coordination of movements and control of the situation disorder after the series of onrushing techniques of an opponent;

1 point – inability to an adequate resistance during the whole combat, rate of movements decrease to the end of the first round.

Picture 1. Structural content of a boxer’s main moral-volitional qualities
Persistence

5 points – recurrence of a technique till its complete mastering; an ability to achieve the goal in difficult conditions of a combat;
4 points – an ability to frequent repetitions of a technique till mastering its details; a successful attack in unfavorable conditions; attention concentration on the opponent’s actions, motion activity preservation till the end of the combat;
3 points – the goal achievement in extra time, actions, motion activity decrease after a missed strike;
2 points – periodical rate of movements decrease during the combat, inability to fulfill effective techniques in an unfavorable situation;
1 point – quick fatiguability while mastering a technique; the goal achievement to the end of the training; a considerable motion activity decrease after the first round.

Diligence

5 points – mastering a technique and its details during the lessons and after the training; motion activity preservation in the state of tiredness, systematic fulfillment of a given training loads volume in spite of tiredness and unfavorable conditions;
4 points - an independent motor actions technique mastering after the training in the state of tiredness, some decrease of the motion activity in difficult conditions and in case of psycho-emotional state deterioration;
3 points – a given training loads volume fulfillment only in case of positive psycho-emotional state and high level of working capacity;
2 points – inability to master techniques after the training; inability to cope with a given volume of work;
1 point – partial fulfillment of the motional tasks, inability to control psycho-emotional state.

Discipline

5 points – accurate fulfillment of the set rate of a training – competitive activity; the rules of behavior observance in a sport club; self-control, an ability to act in the interests of a team;
4 points – insignificant digression from the sport training procedure; an ability to evaluate reasonably own actions;
3 points – periodical violations of a set procedure of a training – competitive activity; inability to follow own regimen;
2 points – inability to follow the regimen of sport training, inability to act in the interests of a team;
1 point – inability to organize own activity. Inability to follow the procedure of a training – competitive activity.

Determination and courage

5 points – psychological readiness to meet more powerful and experienced opponent; self-control in stress; confidence preservation after a missed strike;
4 points – an adequate resistance to an experienced opponent; self-confidence, an ability to risk, an ability to find the way out in case of difficult situation;
3 points – psychological stress before the combat with a powerful opponent, difficulty in choosing effective actions in stress situation;
2 points – uncertainty during interaction with more experienced opponent, confusion in a difficult moment, inability to control own actions;
1 point – inability to meet a powerful opponent, to act effectively in stress.

Moral-volitional qualities formation is a difficult and long-term process which demands pedagogical conditions of motion activity organization and the use of their evaluation.

Research results and their discussion. To prove this statement a pedagogical experiment was fulfilled in which 42 qualified boxers took part (I category and candidate masters). Age range
was 15-17 years old. The control group (CG) – 20 people and the experimental group (EG) - 22 people were organized.

In the CG the training process was held according to a traditional methodology in accordance with the program of sports training, adopted by the federation of boxing of the Russian Federation (2007) [1]. In the EG was used created by us methodology of moral-volitional and ethical qualities formation. Before the pedagogical experiment the test was held in order to reveal the initial level of physical fitness using the following control exercises: 30 meters run (seconds), 200 meters run (seconds) and 1000 meters run (minutes), standing long-jump (centimeters), chin-up in hang position (quantity).

The research results analysis didn’t reveal essential differences according to the level of physical fitness of the boxers in the CG and the EG (р>0,05).

The level of the leading moral-volitional qualities formation was defined taking into account the characteristics of each sportsman, according to created by us evaluation criteria. The received data handling showed the absence of essential differences according to the level of the boxers’ self-control, persistence, diligence, discipline, resolution and courage formation in the CH and the EG (р>0,05).

Moral-volitional and ethical qualities formation was fulfilled in the process of sport training of the boxers from the EG by means of conditions organization which demand their display. Self-control formation was realized in the process of interaction with 2-3 partners of different qualification, experience of competitive activity, style of combat. Sparrings, training combats consisting of 1-2 rounds were held in high tempo, active aggressive manner and were stopped with the first signs of the main parameters decrease of a boxing combat.

During the precompetitive period qualified boxers of a higher weight category from the other sport club were invited to the training. Before the combat the boxer from the EG received definite goals. For example, to control the opponent’s actions during the combat, not to use close range distance; after each attack of the opponent to increase the speed of motor acts, to use defensive techniques from different groups (by a hand, by a body, by a movement) and others.

To form persistence the following motional tasks were offered: - recurrence of a technique (using boxing apparatuses, the partners of different style of combat and others) till its details mastering; - repetition of a motional task during an extra time after the training with a gradual increase of the movements speed; the change of tempo-rhythm parameters with a maximum muscle force in the final phase of an onrushing strike; in case of tiredness with its spatial-time and spatial-power characteristics; - fulfillment of a set number of strikes in a minute and others.

Diligence formation is connected with motional activity increase during the training lesson and with an individual fulfillment of a complex of special motional tasks after the training regardless of psycho-emotional state.

Discipline formation was held in terms of a strict regimen of a training-competitive activity: excluding being late for the lessons, missing the lessons; an accurate correspondence of the training load and rest, fulfillment of additional tasks in free time which provide the training level indices increase; the set rules observance; giving priority to the training aims achievement.

Determination and courage were formed while mastering techniques connected with the risk, demanding maximum concentration, the search for the effective ways of tactical problems solution, mastering the technique of effective false movements; the skills of the opponent’s actions prediction according to the first preparatory exercises.

After the end of the pedagogical experiment the second test of physical fitness indices was held to reveal their dynamics and the change of the level of moral-volitional qualities formation. The analysis of the received data showed that the results improved in both groups: in the CG and the EG but the boxers’ results from the EG were considerably higher. In the CG with the initial data
The analysis of the leading moral-volitional qualities indices formation showed that they increased in both groups but the degree of their increase was different. In the CG with the initial data of self-control formation 3.37±0.24 points to the end of the pedagogical experiment the indices increased to 5.27% (p<0.05); in the EG with the initial data 3.22±0.16 points the increase was 19.83% (p<0.05). In the CG with the initial data of persistence display 3.44±0.26 points the increase was 6.57% (p<0.05); in the EG with the initial results 3.52±0.20 points the indices increased to 27.17% (p<0.05). In the CG with the initial data of diligence 3.86±0.30 points to the end of the pedagogical experiment the indices increased to 7.12% (p<0.05); in the EG with the initial data 3.79±0.31 points to the end of the pedagogical experiment the results increase was 23.41% (p<0.05). This kind of tendency of indices improvement was revealed according to other moral-volitional qualities.

**Conclusion.** Thus the results of the pedagogical experiment showed that moral-volitional qualities are the important component of the boxers’ sport training system. The research materials prove the dependence of motional activity; the ability to master a rational technique of onrushing and defensive actions; readiness formation to solve tactical problems on the level of such moral-volitional qualities formation as self-control, persistence, diligence, determination, discipline, courage and others.

In boxing the speed of motor reaction is very important, also important is the speed of motional actions, in formation of which central nervous system takes part and also other functional systems under the influence of which the development and perfection of moral-volitional and ethical qualities happens. This allows to equate them with the qualitative sides of motional activity development; increase of technical-tactical, psychological and intellectual activity. The pedagogical experiment results showed that increase of the leading moral-volitional qualities influences greatly further sportsmanship improvement of the qualified boxers.

**Bibliography**

PERFECTION OF SPRINT TECHNIQUE

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Keywords: methods, control of hands movements, a special device, pedagogical experiment.

Annotation. Sprint technique improvement requires coordination of coaches and athletes in finding new ways of the training process development. To improve the results in running coordination of motor and vegetative functions is necessary, which is achieved with the help of targeted training loads. Sprint technique has clearly oriented individual character due to the complex of various factors. However, in the process of runners training not only personal mistakes are revealed, but also typical ones, the most common of which are the lack of co-ordination of the upper and lower extremities, and not correct muscular effort allocation in space and time.

Research methods: scientific and methodological literature analysis, instrumental methods, pedagogical observation, pedagogical experiment.

Materials. During the pedagogical experiment, which involved qualified runners, the efficiency of the developed method of hands movements control in the anterior-posterior direction was checked.

Results. This article presents developed by the author technique of the upper extremities movements control in sprint. Its application makes it possible to eliminate wasteful movements and creates special conditions, which demand clear organization of hands motor activity. This technique deficiency correction gives additional opportunities for speed increase when overcoming the race distance. Pedagogical experiment results showed that the use of the proposed by the author device during the race, which has a simple and reliable design, is oriented at the individual characteristics of each runner, a feedback is set, during which the runner gets the opportunity for timely correction of spatial-time parameters of the upper extremities movements. Together, with verbal and visual training methods, the device provides a clearer picture of the rational motor actions model, which eliminates the deviation from the proposed method. A special device is developed which controls hand movements in the anterior-posterior direction. The use of this device allowed to obviate technical mistakes in hands movements, and this had a positive impact on the results of competitive activity.

Conclusion. Application of the developed by us method allowed to make the necessary corrections in the nature of upper and lower extremities motor actions, which contributed to their co-ordination and better results in the race.

Introduction. Sports results improvement in sprint is determined by the ability to constant speed increase. The rapidity of actions is determined by a complex of factors: genetic, physiological, psychological - pedagogical, social and others. Speed is an integrative co-ordination index of motor and vegetative functions, the development of which demands special conditions creation. Being a natural locomotor function running doesn’t demand a special methodology in everyday life but in sport of higher achievements when priority is provided by tenth and hundredth parts of a second demands running technique perfection by means of more rational motion activity organization.
One of the important effectiveness factors, which help to cope with the distance, is a rational allocation of the parts and the units of the body in space and time, provision of a clear orientation of upper extremities swing movements in the anterior-posterior direction.

Special literature analysis, progressive trainers’ experience study show the necessity to search for the solution of a problem of the given parameters improvement by means of different education and training methods complex [1, 3, 4, 6].

The aim of this research work is a theoretical and methodical substantiation of the necessity to organize rational movements of upper extremities in sprint as one of the factors which influence the speed of running.

The objectives: 1. To create the method of hands movements control in the anterior-posterior direction.
2. To check the effectiveness of a special device application during the sports training of the qualified runners.

Methods: scientific and methodological literature analysis, pedagogical observation, pedagogical experiment, instrumental methods.

Sprint technique improvement is connected with the overcoming unconditioned reflective reactions which provide recurrence of stereotypic motive acts. In natural life conditions running doesn’t demand special technical training. The best runners’ results reached the level when each second is vital. This determines the necessity in a constant search for the ways of individual running technique improvement, taking into account the indices of height and weight, upper and lower extremities length, latent qualities of the organism (a body, muscle strength, motion reaction stability and others). A rational allocation of the parts and the units of the body in space and time is very important for speed qualities improvement [2, 5]. A considerable forward inclination of the body provides the change of articular angles and this influences the running technique; straight position of the body increases considerably the power of resistance of oncoming air flow which has a negative impact on the results of running.

One of the known drawbacks of the sprint technique is an irrational movement of upper extremities in the anterior-posterior direction when the sportsmen draw aside the elbow and it leads to disorganization of upper and lower extremities movements and speed decrease. The complex of verbal methods directed at a rational model of physical actions creation doesn’t work efficiently because of movement skills strengthening during the life.

Research results and their discussion. We created a special device for control of hands movements in the anterior-posterior direction (picture 1).

The device is in the form of an arch from a thin plastic band, width is 5 centimeters, which is placed above the head. The height of the arch is 35-40 centimeters, width is 25 centimeters. The lower part of the arch on the left and on the right is placed on the left and on the right shoulder. At the end of the arch two flat, broadened downwards platforms are fixed (on the left and on the right). The foundation of each platform is fixed on a narrow (width 1-2 centimeters) wooden bar inner side of which has a little longitudinal hole. Through the hole the ends of a band from the right and the left side are put; the ends of the band are bound up on the waist, fixing the platforms. The platforms don’t let the runner to draw aside the elbow during the run optimizing swing exercises in the anterior-posterior direction. This device is necessary to use taking into account the runner’s height and weight indices and other individual morphological peculiarities (shoulders breadth, upper extremities length and others). The methodology of this device use was approved in the process of sports training during the pedagogical experiment.

To check the effectiveness of the given methodology the pedagogical experiment was held. 18-22 year old sprinters of the first range took part in the experiment (22 runners). Two groups were organized: the control group (CG) - 11 people and the experimental group (EG) - 11 people. Before the pedagogical experiment the test was held in order to reveal the initial level of general physical and special readiness with the help of the following control exercises: 60 meters run from
The initial level of a special running readiness is defined according to the speed of running on 100, 200 and 400 meters distances. The analysis of the research results didn’t reveal considerable differences according to the level of general physical and special running readiness of the female athletes from the control group and the experimental group (р>0,05). In the CG the training lessons were held according to generally adopted by the program methodology which was recommended by the federation of athletics in the Russian Federation. In the EG created by us methodology of upper extremities movements control was used.

For each female athlete the parameters were adjusted taking into account her height and weight indices, shoulders form and the length of the upper extremities.

In the process of the training lessons after running different distances the opinion of the female athletes was asked concerning the appropriateness of this device application. It was revealed that even those female athletes who had a perfect running technique concerning the direction of the hands movements in the anterior-posterior direction felt the presence of a special limiter of physical actions amplitude excursion. It helped to reveal not only considerable deflection in hands direction in elbow joint aside, but even slight mistakes. This methodology application during the pedagogical experiment helped to eliminate the running technique distortion according to this parameter and this influenced the results of running.

After the end of the pedagogical experiment the second test on general physical and special running readiness was held. The test results showed that these indices increase was in both groups:

1 – arch; 2 – the right stripe; 3 – platform (cardboard, plastic); 4 – bar; 5 – belt

Picture 1. The device for control of hands movements in sprint
in the CG and the EG but in the EG they were higher. In the CG in 60 meters run from high start with the initial indices 4,30±0,53 seconds their increase was 1,87% (p>0,05) to the end of the experiment; in the EG with the initial results 4,31±0,27 seconds the increase was 5,44% (p>0,05). The indices of the standing broad jump in the CG with the initial data 2,41±0,21 centimeters to the end of the pedagogical experiment increased to 3,50% (p>0,05); in the EG with the initial data 2,42±0,18 centimeters the indices increased to 7,50% (p>0,05). In the CG while fulfilling the shot-put with the initial data 14,40±0,29 meters to the end of the pedagogical experiment the increase was 5,74% (p>0,05); in the EG with the initial data 13,38±0,30 meters the results increased to 10,04% (p<0,05). Such kind of tendency was revealed concerning other indices of general physical fitness.

Dynamics revelation of the female athletes’ readiness to run from the CG and the EG also shows significant results improvement in running the distances of 100, 200 and 400 meters in the EG. If in the CG in 100 meters running from low start with the initial data 12,39±0,65 seconds to the end of the pedagogical experiment the results improved and were 12,29±0,19 seconds (p>0,05), in the EG with the initial indices 12,38±0,22 seconds the final results were 12,25±0,19 seconds (p>0,05). In the CG in 200 meters run from a low start with the initial indices 26,16±0,12 seconds to the end of the pedagogical experiment the results improved and were 25,87±0,19 seconds (p>0,05); in the EG with the initial data 26,14±0,16 seconds the speed increased and was 25,03±0,17 (p>0,05). In the CG in 400 meters run from a low start with the initial data 60,94±0,63 seconds to the end of the pedagogical experiment the results were 59,67±0,46 seconds (p>0,05); in the EG with the initial indices 60,97±0,56 seconds the speed increased and was 56,57±1,14 seconds (p<0,05).

Conclusion. Thus the results of the pedagogical experiment showed that sprint technique can be improved according to its different parameters, each of which contributes to the competitive activity results. The power of hands movement and the accuracy of the movements direction are the main speed increase reserves in sprint. Application of the developed by us method allowed to make the necessary corrections in the nature of upper extremities motor actions, which contributed to their co-ordination and better results in the race by means of oncoming air stream resistance decrease and co-ordination of the upper and lower extremities improvement.

Bibliography
EDUCATIONAL SERVICES BRANDING IN PHYSICAL CULTURE AND SPORT INSTITUTE: MODERN APPROACHES

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Keywords: branding, brand, image, educational establishment of physical culture and sport, PR-technologies, target audience, reputation.

Annotation. Efficient reorganizations of the Russian society are accompanied by aggravation of the existing problems and by appearance of new social problems which lead to new changes in all spheres of social life, including the sphere of education. The analysis of the changes in education nowadays showed that an effective functioning of educational establishments is impossible without their scientifically grounded activity on creation and promotion of the educational services brand.

The most urgent for the modern Russian higher educational establishments is the problem of competitiveness improvement as during recent ten years they faced the problem of lack of school-leavers and the necessity, in this case, to improve the work on their opportunities branding on the educational services market.

There are many works which have mediate and direct connection with the studied problem. In recent years the interest of management theorists and practitioners increased to the problem of culture of an organization (including an educational establishment as an organization which provides specific services) and to the key factors which provide its creation and development. As a result, there appeared a lot of conceptions of corporate culture, organizational culture, culture within a firm. But among many factors of an organization culture formation many researchers don’t pay attention to one of its important elements – perception of an organization brand by the interested community.

The used in the research work methods are the following: system analysis, modeling, experts evaluation, pedagogical experiment.

Materials. The outer and inner factors are revealed and systematized in the article. These factors influence the process of educational brand creation and promotion. The organizational-pedagogical mechanisms of educational services brand creation and promotion are developed. The brand includes target, organizational, processual, control-diagnostic components.

In the end it should be noted that brand, connected with knowledge management, demands creation of intellectual assets of educational establishment management methods. It is necessary to create motivation for the staff on their contribution to brand formation. It is important not only to create material stimulus but also try to make the program of educational services branding stable from the point of setting documents, try to make the employee’s work easier or the program will fail.

Introduction. The developing importance of educational services sector made educational establishments realize that services brands creation and development is the source of a stable competitive priority. In spite of some common features in the principles of goods and educational
services branding, a special nature of the services demands individual approaches and own models. The study of situational examples in the sectors of education shows some difficulties which the marketer meets in case of educational brands formation. In the process of educational services brand creation and promotion it is necessary to take into account modernism and conservatism of mass consciousness which is subjected to definite fluctuations just as fashion. And finally the greatest potential for the brand development have the technologies of verbal recommendations stimulation. In Russia it is doubly important because for our mentality western individualism is not typical. In Russia dominates social type of consciousness, people are more likely to form their aims taking into account the nearest circle of contacts. Unfortunately these technologies are not effectively used yet. Some practice on the market already exists but the spread of this practice will demand higher level of professionalism from marketing services.

The aim of this research work is to create, theoretically substantiate and experimentally approve organizational- pedagogical supply of educational services branding.

In accordance with the set aim we defined the following objectives of the research work:
- to reveal the essence and specificity of educational services branding of a higher educational establishment, to define the indices of its effectiveness;
- to create organizational- pedagogical mechanism of educational services brand creation and the algorithm of its promotion management;
- to approve experimentally organizational- pedagogical mechanism of educational services brand creation and the algorithm of its promotion management.

Educational services of a higher educational establishment brand can be considered as a complex of information about the higher educational establishment in general (career-oriented potential, material and technical base, the place of a higher educational establishment in social-economic sphere of a region and others ), about the spectrum of the offered by it educational services for all groups of population.

Educational brand can be characterized as a set of the elements which is an additional value (materialized spiritual value) providing a real notion of educational services acquisition, of its importance for a consumer, the prospects and dynamics of a personal development and wealth grow.

The image of a higher educational establishment is a deliberately formed image which gives it additional values and gives an opportunity to produce the impression, attitude and evaluation which are necessary for a higher educational establishment itself.

Working on the brand of the Federal State Budgetary Educational Establishment of Higher Professional Education "Povolzhskaya State Academy of Physical Culture, Sports and Tourism" in Naberezhnye Chelny, as any other educational establishment in the sphere of physical culture and sport, it is necessary to observe the definite principles.

First, it is necessary to answer the question about the mission, aims, orientations, priority directions of an educational establishment activity in the sphere of physical culture and sport.

Secondly, it is necessary to define the target audience of an educational establishment in the sphere of physical culture and sport. The knowledge of the peculiarities of each target segment will allow to organize more effectively the work with it, not only in terms of the peculiarities of an effective image creation, but also to promote educational services, the choice of the style, souvenir products.

Special attention should be paid to the individual peculiarities of a higher educational establishment. An important moment in case of individual peculiarities determination of the Federal State Budgetary Educational Establishment of Higher Professional Education "Povolzhskaya State Academy of Physical Culture, Sports and Tourism" in Naberezhnye Chelny was the question of a director. In Russia most educational establishments in the sphere of physical culture and sport are the establishments of a leading type. Very often the head of the educational establishment is a leader and his or her role in physical culture and sport positioning is essential. In this case the
strategy of image creation is formed in a way that an interview is given only by the director, his or her photograph is on the website and publicity leaflets. Another strategy is more reasonable if an educational establishment in the sphere of physical culture and sport is positioned as a system when the director remains a mystery and the whole toolset works on the system value.

Brand formation is closely connected with PR-technologies. The sphere of PR activity comes to favourable image of an establishment formation and unfavourable gossip and events neutralization. For stimulation of the interest in organization the marketing technologies are used, such as advertising, in sport events participation of a regional and Russian value and not only as the participants but also as the organizers and sponsors. Participation in the Universiade and the Olympiad.

We recommend paying attention to a regular work on activity evaluation of a higher educational establishment from the point of view of the students. The website presence, its availability, navigation convenience, its systematic renewal is an image element of a higher educational establishment.

So, we can present the following practical recommendations on educational services branding of the Federal State Budgetary Educational Establishment of Higher Professional Education “Povolzhskaya State Academy of Physical Culture, Sports and Tourism”:  
1. It is necessary to arrange the system of close interaction with schools and colleges, taking into account that they are the potential students of a higher educational establishment.
2. To arrange “open days” which help to present the programs, to tell about the advantages of studying at the Federal State Budgetary Educational Establishment of Higher Professional Education “Povolzhskaya State Academy of Physical Culture, Sports and Tourism”.
3. To activate the work with foreign students in order to increase the number of students.
4. To cooperate actively with mass media in order to popularize a healthy life style using different arguments.
5. To present the students as the participants, volunteers and organizers of the public events.

The part of the Federal State Budgetary Educational Establishment of Higher Professional Education “Povolzhskaya State Academy of Physical Culture, Sports and Tourism” image is formed due to its perception in society. The main marketing aim is in search for the ways of this information transmission, formation of a definite knowledge level on its base. And as a result of definite image of a higher educational establishment for these purposes the Image center is formed and functioning.

The highest efficiency in information promotion has advertising. The most common are the following forms of advertising: the articles and publications in newspapers and interview on the radio, television, competitions. It is necessary to orient to young audience, use all opportunities of the Internet for sport popularization and the image creation of the Federal State Budgetary Educational Establishment of Higher Professional Education “Povolzhskaya State Academy of Physical Culture, Sports and Tourism”.

The target audience of the Federal State Budgetary Educational Establishment of Higher Professional Education “Povolzhskaya State Academy of Physical Culture, Sports and Tourism” is specific – students who achieved results in sport. That is why it is necessary to search for the future entrants not only in schools but also in other higher educational establishments where there is no specificity and a special attitude to the students who are at the competitions or gatherings.

Among other recommendations on image formation of physical culture and sport higher educational establishment the following can be mentioned:  
- qualification improvement of the teachers, their stimulation to achieve professional results;
- adequate salary which attracts qualified candidates to a higher educational establishment;
- to provide creative and professional realization of the staff.
Conclusion. The analysis and evaluation of the received image with the desired result should be always fulfilled. An obligatory condition is to inform all members and interested people about the results of monitoring. The interest of an educational establishment in own positive image formation creates a positive impression on people. A person who says: “I care for our reputation” demonstrates not only care of his or her organization but also the importance of corporate efforts, directed at cooperation and development.

Bibliography
MYORELAXATION IN THE MECHANISM OF SPECIAL PHYSICAL WORKING CAPACITY OF SPORTSMEN

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Keywords: extreme conditions, the functional protection system, the speed of the muscles relaxation, central nervous system, relaxation.

Annotation. Nowadays there are different ways of a special physical working capacity improvement which are based on the increase of the training and competitive loads. They are effective enough for the main aim achievement but none of them provides health safety of sportmen. Moreover with the increase of the volume and intensity of the loads, which are great, there is increase in sports traumatism and sickness rate. That is why it is important to search for the new ways of these two problems solution: the problem of the highest level of a special physical working capacity (SPWC) achievement and the problem of the athletes’ health saving and improvement. We combined these two problems into one – the problem of a person’s motional activity effectiveness increase. That is why physiologically reasonable methods and principles of a special relaxation training, directed at effectiveness increase of the athletes training process on all levels of sports skills development, are necessary.

Research methods. To study the mechanisms of regulation and coordination of the voluntary movements, to control the contractile and relaxation characteristics of the skeletal muscles and the functional state of the central nervous system and nervous – muscular system (NMS) we used the method of computer polymyography, created by Y.V.Vysochin, which was used in training of the sportmen from picked team of Russia and Saint - Petersburg.

Results. 600 sportmen of different qualifications took part in the experiment. As a result of our multiyear research works we substantiated the main ways and principles of special relaxation training, directed at effectiveness increase of the athletes training process on all levels of sports skills development.

Conclusion. The search for a new complex system of a special physical and functional training is necessary, the use of which since childhood will provide universal development and perfection (training) of the inhibition – relaxation processes, defense mechanisms improvement and formation of more rational relaxation type of a long term adaptation and individual organism development.

The tendencies of recent years in professional activity are connected with the constant loads increase almost in all kinds of person’s professional activity. As a result there is violation of regulatory mechanisms which decreases the level of physical working capacity and can lead to negative vegetative shift in health state [3,6,12]. At the same time urgent becomes the problem of sportmen effective training provision in extreme conditions of activity and the functional conditions creation for health saving. One of the ways to solve this problem is the use of effective, modern and physiologically substantiated technologies with the simultaneous use of the rational system of functional state complex diagnostics and correction. This kind of approach allows to broaden the range of compensation abilities...
of an organism on the base of the maximum volume and intensity of professional and psychological – emotional loads. The provision of a maximum adaptation to muscular loads can become one of the conditions of the health saving level and the quality of professional mastery improvement [6,10,11, 13].

This problem becomes urgent in modern conditions of a person’s professional activity and is discussed in several research works connected with the idea of the loads criticality in sport and in other spheres of professional activity [7, 13].

Along with traditional approaches there is a great experience in application of other non-traditional means in different kinds of sport (medium altitude mountains, pressure chambers, hypoxic and hyperthermic effects, special breathing exercises, the methods of biological feedback, the methods of active self-regulation and relaxation and others) in the system of sports training.

At the same time, it is necessary to notice that recently among non-traditional means of influence on a person’s functional state great attention is paid to the methods of myorelaxation, which are famous for safety of influence, effectiveness and low financial expenses. According to some authors relaxation is seen as the alternative or addition to the functional state correction [1, 14, 16]. That is why it is often presented as the method of emotional stress prevention, correction and elimination. As the researchers mention, it is one of the most effective methods which help to achieve necessary changes in an organism functional state.

In physiology relaxation is presented as an active process of muscular tonus and psychoemotional stress decrease [8, 14, 17]. Undoubtedly these are not all changes which characterize relaxation processes. The relaxation of the respiratory muscles changes considerably the state of the respiratory system. During relaxation there is a trophotrop state, the level of apprehension and psychological and physiological reactions to stress decrease. Moreover relaxation is accompanied by a considerable decrease of an afferent and efferent impulse and this, according to the data of electroencephalogram, causes the attention concentration and a state of consciousness with an active cortical activity [6, 9, 15, 18]. As a result we can say that practical application of relaxation methods, directed at prevention, correction and elimination of negative psychoemotional states, can provide the increase of the adaptive abilities of an organism.

The methods of relaxation were used in correction of some pathologic states, in case of hypertensive disease, in order to get rid of sharp and chronic pain including the sphere of sports activity [2, 4, 16].

The state of relaxation is also used in meditation methods. Meditation and the relaxation exercises have a wide range of application, very often they are used in transcendental medicine [8, 9, 10, 14].

All mentioned above effects of the relaxation methods application have a great meaning in sports activity. It is necessary to mention other methods of relaxation which also influence athletes’ functional state, they are: biological feedback, functional music, aromatherapy [1, 5, 12, 15].

Myorelaxation, the speed of skeletal muscles relaxation, is also an important factor characterizing the functional state of nervous - muscular system and the functional abilities of an organism as the contractile characteristic of the muscles.

Muscles relaxation function in sport and labor activity is very important. This problem was studied in some research works where it was proved the positive influence of special exercises, which improve the function of skeletal muscles relaxation, on central nervous system, on visceral organs and systems activity, on formation of the rational types of blood circulation, on movement co-ordination, speed, endurance, technical mastery, increase of a special physical working capacity (SPWC) and sports results [1, 6, 9, 18, 19].

Some research works prove the importance of the muscles relaxation function in the sports results improvement in different kinds of sport and even in ballet and choreography.

The most important, in our opinion, are the research works which prove the leading role of the inhibitory systems of central nervous system and the speed of voluntary relaxation of skeletal muscles in activity of an entire organism: in the mechanisms of express and durable adaptation to big physical, hypoxic and hyperthermic loads; in the mechanisms of a special physical working
capacity; in the mechanisms of overexertion, trauma and disease of locomotor apparatus and also in the mechanisms of rhythm disorder and athletes’ heart overexertion; in the mechanisms of heart adaptation and different types of blood circulation formation; in the mechanisms of muscles blood supply and energy supply of muscular work; in the mechanisms of resistance to physical overloads, overexertion, trauma and diseases prevention and also in the mechanisms of organism protection from extreme effects and athletes’ rehabilitation [4, 5, 7, 16].

It should be noted that all most effective methods of psychoregulation, self-regulation and autotraining, which are used in a special psychological training of the athletes and in new health-improving technologies, are based on relaxation [8, 14, 15].

Nowadays different ways of a special physical working capacity (SPWC) increase are known and they are mainly based on the increase of the training and competitive loads volume. They are effective enough for the main aim achievement but none of them provides health safety of sportsmen. Moreover with the increase of the volume and intensity of the loads, which are great, there is increase in sports traumatism and sickness rate. Different ways of health improvement are known in most of which the main health-improving role play moderate physical loads of low intensity. But this kind of approach doesn’t provide the progress of a special physical working capacity and sports results. That is why it is important to search for the new ways of these two problems solution: the problem of the highest level of a special physical working capacity (SPWC) achievement and the problem of the athletes’ health saving and improvement. We combined these two problems into one – the problem of a person’s motional activity effectiveness increase.

Research methods. To study the mechanisms of regulation and coordination of the voluntary movements, to control the contractile and relaxation characteristics of the skeletal muscles and the functional state of the central nervous system and nervous – muscular system (NMS) we used the method of computer polymyography, created by Y.V.Vysochin, which was used in training of the sportsmen from picked team of Russia and Saint - Petersburg. The method showed its high informativeness and reliability [4,7,8].

The method is based on the synchronous graphic registration of bioelectric activity (electromyograms), cross solidity (tonusgrams) and strength (dynamograms) of different groups of the muscles under study with their voluntary tension and relaxation in isometric regime. The isometric regime of muscles work during testing is preferable, on the one hand, because of its low power intensity, easy modeling [11], on the other hand, as the most widely spread in sports and labor activity.

The research results. Carried out by us experiments, in which 600 sportsmen of different qualifications and specializations took part, showed direct reliable dependence of special physical working capacity and sports results from the speed of voluntary relaxation (SVR) of skeletal muscles [12]. In most kinds of sport (in 17 from 20) the importance of SVR in the progress of sports results, especially at the stage of highest sportsmanship, was sufficiently higher than the importance of contractile muscles characteristics. In such kinds of sport like boxing, hockey, football, speed skating, decathlon and swimming SPWC is not only the leading one but the only from polymyographic parameters which define the qualification improvement. All this doesn’t mean that the contractile characteristics of the muscles are not important in the mechanisms of working capacity. On the contrary, they are very important as the muscles contraction provides the fulfillment of physical work. But the duration of this work, physical endurance, and SPWC mainly depend on relaxation characteristics of the muscles.

That is why our data should be studied as the evidence of the fact, that the level of the muscles contractile characteristics, obtained, for example, by the candidate masters of sport and the first rate sportsmen in the process of long-term sports training, is enough to achieve high rate of sportsmanship which is limited by the level of special physical working capacity of the muscles.

Mentioned above facts, in our opinion, are very important for understanding the role of myorelaxation in increase of
special physical working capacity in all kinds of sport as in all of them require speed, speed endurance or coordination, or the cooperation of these qualities which directly depend on special physical working capacity of the muscles. However, the most important role in understanding and interpretation of physiological mechanisms of special physical working capacity and resistance to physical loads, especially in extreme conditions, plays nonspecific inhibitory – relaxation functional system of urgent adaptation and protection (IRFSP) of the organism from extreme effects and its activity (capacity) influence on formation of three types of a long term adaptation (relaxational, hypertrophical and transitional). The experiments proved the advantage of a long term adaptation relaxation type; this type of adaptation develops in sportsmen with high special physical working capacity of the muscles and with the high activity of IRFSP and this provides a high level of physical working capacity and at the same time, a person’s health saving in extreme conditions. We also stated that hyperexcitability of central nervous system is the main factor which limits the opportunities of IRFSP [8, 11]. The relaxation type of the individual development is more advantageous in all meanings. The people of the relaxation type have equilibrium of excitatory and inhibitory processes of central nervous system, a high speed of muscles relaxation, great regulation and coordination of the movements, good reaction to moving objects and this provides minimization of sport, everyday and street traumatism. They have dominant the most efficient eukinetich type of blood circulation, high profitability and effectiveness of heart activity, minimal level of energy expenditures, low level of metabolites of energy metabolism, adrenalin and stressor hormones, but higher level of noradrenaline and anabolic hormones at rest and in case of testing loads, high speed of renewal processes and resynthesis of energy resources, high physical working capacity and endurance. They have high level of stress resistance, immunological resistance, 2-3 times rarely than the people of the hypertrophic type undergo overexertion and diseases. The sportsmen of the relaxation type in comparison with the sportsmen of the hypertrophic type have longer sports life, easier overcome physical and psychological loads, 8-10 times rarely undergo different kinds of overexertion, trauma and diseases and achieve the highest sport results [5, 8, 11].

With the increase of the speed of muscles relaxation and formation of the relaxation type of long-term adaptation decreases sports traumatism of the athletes from 100% (in case of special physical working capacity less than 4,01/second) to 0% (in case of special physical working capacity more than 9,01/seconds) and their health becomes stronger. Our long-term research works testified to the fact that even in the most dangerous kinds of sport trauma can be almost fully avoided (excluding traumas in case of evident rules violation) by means of correct organization of the training process directed at balance normalization of nervous processes, increase of special physical working capacity of the muscles and formation of the relaxation type of long-term adaptation.

In further series of experiments took part 320 pupils and qualified sportsmen (age range from 6 to 32 years old). As an adaptogenetic factor veloergometric physical load of maximum intensity was used. Even at the age range of 6-11 years old a very high speed of voluntary relaxation of the muscles (SPWC) was registered. Then it gradually decreased and to 14 years became minimal (decrease to 22,3%). After 14 SPWC of the muscles again started to grow till 29 years old, and that level of SPWC which was in early age (6-11 years old), was achieved only to 20-25 years old. The same was the age dynamics of the inhibitory – relaxation functional system of protection (IRFSP) power. At the age of 6-8 the children had a high level of the inhibitory – relaxation functional system of protection (IRFSP) power. Then it decreased (to12,6%) becoming minimal to the age of 13-15. After 14-15 the inhibitory – relaxation functional system of protection (IRFSP) power increased and to the age of 23-25 became maximum and then decreased a little to the age of 29. The same character of dynamics of these parameters had women, but their decrease at the age of 13-15 was less sharp [4, 7].

**Conclusion.** Mentioned above factors, in our opinion, vividly prove the importance of myorelaxation in the increase of SPWC in all kinds of sports activity as all of them have high demands to speed, speed endurance, coordination or all these qualities which are in close connection with SPWC of the muscles.
Also should be noted highly reliable correlation connections of SPWC with all main components of movements coordination and with sport results in high coordinate kinds of sport. Important are the data about great influence of SPWC on the degree of contractile characteristics of the muscles realization. This influence in case of low SPWC is in the fact that during the quick movements fulfillment the muscles meet considerable resistance from their slow relaxing antagonists and that is why can’t fully realize their contractile characteristics, especially speed. As a result, there is high energy waste and decrease of the maximum speed and movements tempo, appears so – called “speed barrier” and decreases the level of special physical working capacity.

In the end we should notice that a search for a new complex system of a special physical and functional training is necessary, the use of which since childhood will provide universal development and perfection (training) of the inhibition – relaxation processes, defense mechanisms improvement and formation of more rational relaxation type of a long term adaptation and individual organism development.

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THE FIRST – YEAR STUDENTS’ LEVEL OF PHYSICAL READINESS EVALUATION IN KURSK STATE AGRICULTURAL ACADEMY

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Keywords: physical training, a standard scorecard, modular – rating evaluation, motivation, lessons attendance.

Annotation. The aim of the research work – to create standard scorecards of the female students’ physical readiness level and on this base to increase the level of positive evaluation, lessons attendance and motivation to the lessons of physical culture.

Research methods: the main research method was a natural pedagogical experiment, during which the following methods were used:
- scientific – methodical literature and the teachers’ from higher educational establishments practical experience analysis;
- the method of pedagogical observation;
- physical readiness indices determination according to the tests of a model state program for higher educational establishments [13];
- standard scorecards created according to gradation of marks and norms, offered by V.M. Zatsiorski [11].

All factual numerical material was handled with the help of personal computer using the program Microsoft Excel.

The contingent of under study: 103 students of the first course from Kursk State Agricultural Academy.

The main results: the created standard scorecard of the female students’ physical readiness level compared with the normative of a model state program [2000] is more adequate and available for the students as it sufficiently increases their marks in a modular – rating evaluation system of a higher educational establishment.

Introduction
The research is caused by a sufficient lag in the female students’ physical readiness level compared to the required modern modular – rating normatives and marks. This is obvious when the girls give normatives in 2000 meters flat race at the stadium; in 100 meters running and in body lifting from the starting position - lying flat on back, legs fixed, hands on the nape. The normatives of the model curriculum [13], intended for an average statistical student then, today are not available for 50% of girls. The teachers who want to improve low physical characteristics increase physical load at the lessons and this creates only a negative attitude towards a subject. Then girls
start to miss classes, finding different reasons for it, or stop attending them at all. At the same time the State strategy of physical culture and sport development in the Russian Federation for the period till 2020 demands from the students of all medical groups of health physical culture lessons attendance and independent work doing physical exercises. To realize this program at the initial stage it is necessary to create standard scorecards of the first-year female students’ physical readiness level from Kursk State Agricultural Academy in order to make the normative in 100, 200 meters running and in body lifting correspond to the girls’ abilities from Kursk State Agricultural Academy and other agricultural higher educational establishments of the central federal region.

Such kind of research works in 80-s, 90-s of past ages were held on the basis of students’ individual data comparison with created on great Academy readiness level attendance and independent work doing physical exercises. To till 2020 demands from the students of all medical groups of health ph

Since 1990 for the students’ physical readiness level evaluation different methods and estimation scales were used [1;3;4;7;8;]. In the research work by Feofilaktov V.V. [12] there is a comparative analysis of the innovation techniques of students’ physical readiness on the basis of physical development monitoring. Feofilaktov V.V. states that in comparison with the preceding generation of students modern students are higher and have a bigger hypodermic – fat mass and a low level of a muscle bulk. Many indices of modern students’ physical readiness (100, 200 meters running, standing long-jump) are lower than their predecessors had [12]. In the educational process the author uses health-improving systems “Isotone” and “ Aerobics”. These systems have exercises of local power endurance which increase the effectiveness of the lessons of physical upbringing. The method of individual evaluation in the research [12] gives an opportunity to define students’ traditional physical readiness not using utmost control tests, the method of group evaluation gives an opportunity to evaluate physical readiness on the basis of anthropometry and pulsometry. The author also offers to evaluate traditional indices of physical readiness taking into consideration physical constitution. The analysis held by Feofilaktov V.V. [12] defined the main factors of students’ physical development and physical readiness: physical constitution - 34-39%; fitness level - 14-30%; a body length - 7-8%; a mass of fat - 15%; cardiovascular system indices - 8-10%; blood pressure (diastolic) - 4-6%. In the research work by Rytina L.N. [9] students’ physical readiness dynamics is regarded taking into consideration somatic health indices. The author suggests not to evaluate students’ physical readiness formally, by means of the normatives and tests, but to evaluate students’ somatic health level by means of the integrated system of medical – pedagogical control during the lessons. In the research work by Lyisova I.A. and Blinova A.V. [5] five levels of the female students’ physical readiness are defined: “a low level” - 0-5 points; “below the average” - 5.1-25 points; “an average level” - 25.1-75 points; “above the average” - 75.1-95 points; “a high level” - 95.1-100 points. The suggested evaluation system allows to study individual and group dynamics of students’ readiness training according to different programs in different higher educational establishments in one federal region [5,6]. In the research works by Sokolov A.S. [10] the questions of students’ physical readiness management are studied on the basis of the systems of automatized dynamic control. The author notes that as the teachers of physical culture don’t have mechanisms which help to fulfill express-evaluation, analysis, prognosis and long-term observation of students’ physical readiness state and somatic health, there is a difficulty in efficient receiving of full and objective information on control and there is a violation of an effective opportunity to control the process of physical upbringing. In the research works by Zheleznyakov A.G. [2;3;4] standard scorecards of the female students’(1st,2nd,3rd year students of Kursk State Agricultural Academy and the branch in Kursk of Russian State Trade – Economical University) physical and functional indices level were created. Their interaction was revealed and comparison with the standards of a model State program on physical upbringing, created by the Ministry of education of the Russian Federation in 2000 [13].

Creating the assessment criteria of students’ physical readiness in modern conditions of modular – rating system it is necessary for the scientific – practical community of higher
educational establishments to co-ordinate the number of tests for students and their technical part in order to compare and correlate the research results in different regions of the Russian Federation.

**The research methods and research organization.**

The main research method was a natural pedagogical experiment, during which the following methods were used:  
- scientific – methodical literature and the teachers’ from higher educational establishments practical experience analysis;  
- the method of pedagogical observation;  
- physical readiness indices determination according to the tests of a model state program for higher educational establishments [13];  
- standard scorecards created according to gradation of marks and norms, offered by V.M. Zatsiorski [11].

All factual numerical material was handled with the help of personal computer using the program Microsoft Excel.

The research work was held from September till November in 2013 on the sports base of Kursk State Agricultural Academy. 103 students of the first course from the financial, agrotechnological faculties and a faculty of veterinary medicine took part in the research. All students were included into the base medical group.

**Research results and their discussion.**

Scientific – methodical literature analysis showed that there are no unified modern standardized methods and quantitative criteria in the practice of students’ physical readiness level evaluation [6;10].

In the search for physical upbringing process optimization, first the aim of the research was to increase motivation level of the female students’ from the first course concerning the lessons of physical culture through the creation of standard scorecards of their physical readiness level. The standardization of the normatives of the modular – rating system in the sphere of physical upbringing gives an opportunity for girls to deal with the offered normatives successfully, will increase the percentage of positive grades, attract many students to attend the lessons, will decrease the percentage of debtors and these factors make the research work urgent.

Table 1 presents the results of the first -year female students’ physical readiness level testing in Kursk State Agricultural Academy.

<table>
<thead>
<tr>
<th>Test</th>
<th>n</th>
<th>M ± m</th>
<th>σ</th>
<th>V max</th>
<th>min</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body lifting from the starting position - lying flat on back, legs fixed, hands on the nape (quantity)</td>
<td>103</td>
<td>38,6 ± 0,79</td>
<td>7,97</td>
<td>20,65</td>
<td>60</td>
</tr>
<tr>
<td>Running 100 meters (seconds)</td>
<td>103</td>
<td>17,0 ± 0,10</td>
<td>1,0</td>
<td>5,73</td>
<td>20,2</td>
</tr>
<tr>
<td>Flat race2000 meters (seconds)</td>
<td>103</td>
<td>655 ± 6,11</td>
<td>61,8</td>
<td>9,4</td>
<td>850</td>
</tr>
</tbody>
</table>

Evaluating the results it is necessary to mention that according to all tests of physical readiness there are considerable differences. The level of country pupils’ physical qualities development decreased significantly in comparison with the level of their contemporaries in 2000. Significantly decreased the technical part of the offered physical exercises fulfillment. Many female students are afraid of easy physical exercises fulfillment as they didn’t do them at the lessons of physical culture at school.

Table 2 presents the created evaluative norms of the female students’ physical readiness in Kursk State Agricultural Academy.
Table 2
Evaluative norms of the female students’ physical readiness in Kursk State Agricultural Academy, n=103

<table>
<thead>
<tr>
<th>Test</th>
<th>Evaluation in points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Body lifting (quantity)</td>
<td>22 and less</td>
</tr>
<tr>
<td>Running 100 meters (seconds)</td>
<td>20 and more</td>
</tr>
<tr>
<td>Flat race2000 meters (minutes)</td>
<td>12.58,0 and more</td>
</tr>
</tbody>
</table>

Table 3
Comparative table of the first-year female students’ physical readiness level evaluation in Kursk State Agricultural Academy according to the table of a model state program for higher educational establishments [13] and evaluating table of a work program on physical upbringing in Kursk State Agricultural Academy [2013]. n=103

<table>
<thead>
<tr>
<th>Evaluating points</th>
<th>Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Body lifting (quantity)</td>
</tr>
<tr>
<td></td>
<td>The program of 2000</td>
</tr>
<tr>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>4</td>
<td>10%</td>
</tr>
<tr>
<td>3</td>
<td>44%</td>
</tr>
<tr>
<td>2</td>
<td>40%</td>
</tr>
<tr>
<td>1</td>
<td>4%</td>
</tr>
</tbody>
</table>

The research results showed that if we use a scorecard of a model state program (created by the Ministry of education [13]) for the first-year students’ physical readiness evaluation only 1% of students will have 5 points in 100 meters running, 2% of students in body lifting and 28% of students in 2000 meters flat race; only 1%, 10% and 21% of students will have 4 points; 34%, 44% and 14% of students will have 3 points; 44%, 40% and 22% of students will have 2 points and 20%, 4% and 15% of students will have 1 point. Table 3 shows that most female students, giving the normative according to the operating scorecard of physical readiness [2000], can get 1, 2, 3 points and only some students will get 4, 5 points. In this case the motivation to go in for physical culture will be low.
Evaluation of the students’ physical readiness according to created by us standard scorecard showed that from 103 female students, taking part in the research, 14 - 32% got 5 points, 36 - 59 % got 4 points, 13 - 22% got 3 points, 7 - 12% got 2 points and 1 - 3% got 1 point. Predominant limits of the normatives in this scorecard became the grades of 3 to 5 points and it significantly stimulates the students to improve their physical readiness level.

Conclusion
The research results showed that students’ physical readiness indices from different higher educational establishments, even of the same federal region, are significantly different. The evaluating normatives, created by a model state program [13], don’t correspond to modern demands and should be corrected in every higher educational establishment.

The teachers of secondary schools, working in rural areas, should pay attention to the technique of the following exercises fulfillment: running, jumping, body lifting from the starting position - lying flat on back, legs fixed, hands on the nape.

To increase the motivation to attend the lessons of physical culture it is necessary always to correct and adjust the normative base of a modular-rating system in a higher educational establishment.

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CONDITIONS OF LOW START FULFILLMENT SKILLS FORMATION IN SPRINT

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Keywords: the technique of the low start, control, management, pedagogical experiment.

Annotation. The problem of speed increase in sprint is studied by many specialists, coaches and qualified sportsmen. But in special and scientific – methodical literature the main attention is paid to speed – power qualities development; the mechanism of coordination development between the runner and the bearing, body stability preservation and other aspects of the athletes’ technical training. The analysis of the structural content of sprint showed that in the theory and methodology of sprinters’ sports training a lot of research works are devoted to the running technique improvement after the starting and on the final straight. Some authors try to reveal the opportunities to improve the results in sprint by means of the individual technique of the low start fulfillment and starting stride development.

Research methods: scientific – methodical literature analysis, test, pedagogical experiment, pedagogical monitoring.

Materials. The article pays attention to the runners’ understanding of the physiological mechanism of the low start fulfillment. Such an approach activates cognitive processes of the sprinters and the coach, stimulates the creative search for the new approaches to the individual technique of competitive distance overcoming development. The theorists and experts are also interested in revelation and description of pedagogical conditions for effectiveness of the low start fulfillment and starting stride increase. The creation and realization of the discussed pedagogical conditions opens new prospects in revelation and use of additional reserves of sportsmanship improvement. A physiological mechanism of the low start and pedagogical conditions for its techniques development is revealed. The method of teaching of a rational technique of the low start is created.

Results. During the pedagogical experiment the effectiveness of application of the method of the low start individual technique development was revealed on the basis of a special pedagogical conditions application system. The revelation of the physiological mechanism of the low start showed the leading role of orientation skills formation in spatial – time and spatial – power parameters of the physical actions; in psychic – emotional sphere management, volitional efforts mobilization. Minimization of time for the low start rational technique mastering; effectiveness improvement of the educational - training process; results improvement in sprint.

Conclusion. The understanding of the low start fulfillment mechanism; the development of the low start fulfillment method on the basis of the system of special pedagogical conditions provides the results improvement of the sprinters’ competitive activity.

Introduction. Sprint technique development is connected with the search for individual ways of physical actions quality improvement which form the content of sprinter’s competitive activity. In sprint the main are the speed - power qualities as the quickness of the distance overcoming demands a special level of muscle strength development; quickness of support reaction;
optimal correlation of length and frequency of the running step; rational allocation of the parts and units of the body in space and time and so on.

A sprinter’s physical action effectiveness is mainly determined by his individual features. Taking into account these individual features causes the necessity of motional skills formation in accordance with the structural content of running.

Scientific and scientific – methodical literature analysis showed that while solving the problem of a runner’s competitive activity effectiveness increase the main attention is payed to the speed increase and the technique of push-off from the bearing improvement [1-5]. But the initial impulse of an athlete’s movements is set during the low start fulfillment, the effectiveness of which influences the speed of running and it makes the theme of the research urgent.

Sprint technique from the low start is characterized by mastering motional skills which have specific features of the starting stride and it is provided by a special technique of physical actions fulfillment while running (correlation of the running pace length and frequency till the final speeding-up), by running along a final straight with own individual features. It is important to master the rational low start technique because only the qualitative parameters of the sprinter’s starting actions define the initial conditions of running effectiveness.

The aim of this research work is a theoretical substantiation of the importance of the low start technique improvement.

Objectives:
1. To reveal physiological mechanism of the low start.
2. To define the conditions of the rational low start technique fulfillment development and to check the effectiveness of its fulfillment method, which was created taking into consideration the conditions, influencing the potency of 16-20 year old runners’ physical actions.

Research methods: scientific – methodical literature analysis, test, pedagogical experiment, pedagogical monitoring.

One of sprint peculiarities is the necessity to master the low start fulfillment technique which has specific parameters while fulfilling the commands: “Ready”, “Steady”, “Go”. During the starting actions fulfillment the sportsman does the center of gravity reallocation, changes the body position, its parts and some units, which provides the body steadiness; muscles preparation for further work by means of an optimal correlation of the stimulation and inhibition processes in a central nervous system.

The body position in accordance with the command “Steady” is characterized by the change of the body units’ spatial location and it creates more advantageous conditions for a starting stride. It is done by means of straightening of the leg behind, forward incidence increase of the shoulders. The timespan from the “Steady” command mobilization till the fulfillment of the command “Go” can differ in several centiseconds. It is the most difficult for the sprinters to provide psychological – physiological readiness for the timely reaction to the command “Go”. This command is a signal to another reallocation of the muscular efforts which should finish to the moment of the starting signal. The difficulty of the low start fulfillment technique in sprint is in the choice of an optimal regime of the stimulation and inhibition processes correlation. In case of the stimulation processes predominance false start happens; in case of the inhibition processes predominance in the cortex of head hemispheres happens lateness of the motional reaction and time waste at start. All this prevents starting stride paces fulfillment.

The reasons for non-coordination of the stimulation and inhibition processes are the following:
- overexcitation determined by the unpreparedness to overcome stress situations, caused by lack of physical and technical readiness;
- unfair evaluation of the readiness to competitive activity;
- not formed skills of psychological – emotional state control and others.
Prevention of these mistakes is connected with the realization of the pedagogical conditions system in the training process directed at the formation of the low start fulfillment skills, taking into account the sprinter’s physical and technical – tactical readiness, individual experience of the competitive activity; objectives that are set during this stage of sports training.

Taking the starting position on hearing the command “Ready” should be directed at provision of the body parts and units balance in space which creates easy terms for a timely reallocation of muscular efforts. Necessary body steadiness is determined by the sportsman’s psychological – emotional condition, confidence in own strength, by an achieved level of mastery for the given competitions. This proves the necessity to state real objectives which demand certain volitional efforts, attention concentration on a coming signal to act.

When a sportsman hears the command “Steady” slight changes of the body location and its units in space happens and this determines the necessity to make another reallocation of muscular efforts. The peculiarity of the second phase of the low start is a body position which provides easy terms for the starting stride beginning. The realization of this objective is possible if the runner creates the model of a physical action which provides his maximum movements effect during the command “Go”. A sportsman should clearly understand his body position, the character of muscular efforts reallocation and to take the mode which equalizes the processes of stimulation and inhibition. If the sprinter is guided by his opponents’ actions on the final straight, his main aim at the start is a maximum fast reaction to the signals to the beginning of the race.

In this case mental determination of the time intervals of the signals continuance is very important and demands successful spatial – time orientation. The most difficult moment in sprint is a maximum concentration of the psychophysical efforts when leaving the start and fulfilling the first steps of the starting stride. All attention should be payed to achievement of the upper and lower extremities coordination during the push-off from the bearing, gradual body straightening, running paces extension and the beginning of the hands swing movements, which provide the efforts increase of the jumping leg. The difficulty of this part of the distance is determined by the necessity to fulfill multidirectional movements with different tension of the muscular efforts, gradual increase of the amplitude, the rational location of the body and its units in space and time.

Each running pace during the starting stride has its own characteristics which are defined by height – weight parameters, by the speed of the motional reaction, by the individual indices of the muscular strength; by the body steadiness and others.

One of the important conditions for a rational technique of the low start and the starting stride fulfillment is the use of special visual and auditory guiding lines: a special marking, the starting stride paces counting as henceforth all the running paces have the same spatial – time and spatial – power parameters. So, the main conditions which provide the effectiveness of the low start technique and the starting stride fulfillment are the following:

- the statement of clear problems for the given stage of sports training which correspond to the level of the sprinters’ physical and technical readiness;
- the skills formation of the motional action image – model creation which allows a sprinter to create the image of the further physical action;
- the formation of the low start running physiological mechanism notion which determines the sprinter’s appreciation of the technique’s peculiarities and the demands for the level of general physical and special readiness;
- the skills formation of orientation in time with the help of the system of sound and light signals and with the help of psychological – emotional condition self-control;
- the use of visual orienting points and marks which provide the skills mastering, the skills of orientation in spatial – time and spatial – power parameters of physical actions.

**The research results and their discussion.** Created by us method of the low start and starting stride technique development, based on the realization of the given pedagogical conditions, was checked in the pedagogical experiment. 28 sprinters took part in the experiment (sports
qualification the 3rd -2nd category, age range 16-21 years old). The control group (CG) and the experimental group (EG) were organized, each had 14 people.

Before the pedagogical experiment the test was held in order to define the initial level of the general physical readiness with the help of the following control exercises: 30 meters run from the high start, standing long-jump; triple standing broad jump; pull-ups hanging (quantity of times). The research results analysis didn’t reveal significant differences concerning the level of sprinters’ general physical readiness from the CG and the EG (р>0,05).

Also the level of a special running readiness was defined with the help of the following tests: 20 meters run with a rush, 60 meters run from the high start; 150 meters: 300 meters; 600 meters. The research materials handling also didn’t reveal significant differences according to the level of sprinters’ special running readiness in the CG and the EG (р>0,05). In the CG the training lessons were held based on a general methodology, according to the program of sports training, adopted by the Russian athletics federation; in the EG created by us method was used which provides creation of special pedagogical conditions for individual technique of the low start and the starting stride perfection.

After the pedagogical experiment the second test was held in order to reveal the dynamics of the general physical and special running readiness indices. The analysis of the received data showed that the results improved in both groups: in the CG and the EG, but the results were better in the EG. In the CG in 30 meters run with the initial data 3,91±0,22 seconds to the end of the pedagogical experiment the indices increased to 1,19% (р>0,05); in the EG with the initial results 3,97±0,25 seconds the increase was 3,24% (р>0,05). In the CG in standing long-jump (meters) with the initial data 2,53±0,19 centimeters to the end of the pedagogical experiment the indices increased to 1,25% (р>0,05); in the EG with the initial results 2,57±0,24 centimeters the increase was 4,05% (р>0,05). At the beginning of the pedagogical experiment in the indices of the testing exercise “triple standing broad jump” in the CG and the EG no authentic differences were revealed (in the CG the initial data 7,75±0,27 centimeters, in the EG 7,80±0,22 centimeters). After the pedagogical experiment authentic differences were revealed in the results increase in this control exercise. In the CG the results became better to 1,34%, in the EG to 5,98% (р<0,05). The same tendency of general physical readiness indices increase was revealed in other tests.

The dynamics of increase of special running readiness indices had the following character. In the CG in 60 meters run (seconds) from the high start with the initial data 7,81±0,26 seconds to the end of the pedagogical experiment the indices increase was 1,31% (р>0,05); in the EG with the initial indices 7,68±0,21 seconds the increase was to 2,77% (р>0,05); in the CG in 150 meters run (seconds) with the initial indices 18,86±0,27 seconds to the end of the pedagogical experiment the increase was 1,84% (р>0,05); in the EG with the initial results 18,79±0,22 seconds the increase was 3,31% (р>0,05). In the CG in 300 meters run (seconds) with the initial indices 39,84±0,28 seconds the results increase was 1,87% (р>0,05); in the EG with the initial results 38,90±0,25seconds the increase was 3,49% (р>0,05). The same tendency of the indices increase of a special running readiness in the CG and the EG was revealed according to other tests.

**Conclusion.** Thus the results of the pedagogical experiment showed that the formation of the notion of the low start fulfillment physiological mechanism, the skills of orientation in space and time; creation of the physical actions model during the low start fulfillment; objective evaluation of physical and special running readiness level and the opportunities of motional objective fulfillment are the main pedagogical conditions for the individual running technique from the low start development.

The results of the pedagogical experiment revealed the effectiveness of the created by us method on the bases of the given pedagogical conditions application, appropriateness of their application in the process of sprinters sports training.
Bibliography


THE TRAINING LOADS INDIVIDUALIZATION ON THE BASIS OF FUNCTIONAL AND RESERVE ORGANISM RESOURCES DETERMINATION OF GRECO-ROMAN WRESTLERS

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Keywords: functional and reserve resources of an organism, adaptation, the method of express – diagnostics “D&K-Test”, the effectiveness of Greco-Roman wrestlers’ training, examples of the training cycles organization, individualization of the training loads.

Annotation. In functional training of Greco-Roman wrestlers one of the main aims is the training of the mechanisms of muscular work energy supply which is connected with such inner functional indices as power, volume, recoverability, effectiveness, the level of mobilization, metabolic processes realization. It is known that muscular work energy supply happens in two modes. The first mode is anaerobic, when energy compensation happens in case of oxygen deficiency. The second mode is aerobic, when the necessity of the organism for oxygen is fully satisfied.

Research methods: scientific-methodical literature analysis, the method of multifactorial express – diagnostics “D&K-Test” created by professor S.A. Dushanin.

Materials. Functional state indices and reserve resources of the wrestlers’ organism are defined and analyzed with the help of comparative analysis.

Results. Comparative analysis of the wrestlers’ currant state allowed to determine that during the research period there is decrease of aerobic resources, the level of working capacity, the power of glycolytic, aerobic sources of energy supply because of great training loads. Also there is a high general level of the wrestlers’ organism functional state.

On the basis of analysis of the integral functional state of the wrestlers there are positive changes of the adaptive abilities of the wrestlers. In the indices of anaerobic metabolic volume, which characterize anaerobic resources of the wrestlers, we see a positive dynamics.

Conclusion. Planning the training and competitive loads of Greco-Roman wrestlers should be held taking into account the bioenergetic profile of muscular work energy supply.

Urgency. In the adopted conception of a long-term social-economic development of the Russian Federation during the period till 2020 the role of physical culture and sport is determined as
human potential development. A modern strategy of professional sport development tells about the competitiveness of our wrestlers in the world, especially on the Olympic Games, World championships and Students games. High sport results in the Olympic kinds of sport are the reflection of the social-economic potential of the country. In order to achieve high sport results in the world it is necessary to use potentialities of the sport science, which include the use of progressive research methods. Thus in order to achieve high sport results it is necessary to search for new and effective methodologies and programs of sport training and their realization, taking into account individual and typological peculiarities of sportsmen’s organism.

For many years there is a complex diagnostics and evaluation of the sportsmen’s functional state by the specialists in the sphere of physiology, biochemistry and medicine, such as F.A. Iordanskaya, R.E. Votylyanskaya, V.S. Farfel’ and others. Moreover, the scientists held different research works on functional state definition and reserve organism resources determination of the sportsmen. The specialists were always interested in the problem of energy supply of muscular work during different kinds of motion activity. First of all this question is about the energy resources of an organism and the ways of their compensation during sport training and during the period of restoration.

The aim of this research work is to improve individual training of Greco-Roman style wrestlers on the basis of functional and reserve resources of the organism determination.

Research organization. The research was held in inter-department laboratory of the branch of Povolzhskaya State Academy of Physical Culture, Sport and Tourism in Naberezhnye Chelny. 16 wrestlers of Greco-Roman style were studied (age range 17-23 years old). All the sportsmen have the qualification of master of sports or candidate master. The average length of the trainings was 9 years.

Research methods. One of the methods which allows to evaluate the functional state without using invasive research methods and get information about the main parameters of aerobic and energy metabolism is the method of multifactorial express – diagnostics created by professor S.A. Dushanin. For the express – diagnostics of the sportsmen’s functional state we used the hardware-based program complex “D&K-Test”. This complex works according to the principle of electrocardiogram registration in chest leads according to Wilson - V3R, V1, V2, V4, V5, V6, of the first derivative in chest leads according to Wilson - dV3R, dV2, dV6. With the help of this hardware-based program complex the following indices were defined: anaerobic metabolic volume (anaerobic resources) (ANAMV); the volume of anaerobic utilization (anaerobic genotype) (%ANAMV); aerobic metabolic volume (aerobic resources) (AMV); the volume of aerobic utilization (aerobic genotype) (%AMV); general metabolic volume (the level of working capacity) (GMV); the power of kreatinephosphate source of energy supply (power endurance, reactivity, temperament) (PKP); the power of glycolytic source of energy supply (speed endurance) (PGL); the power of aerobic source of energy supply (maximum oxygen consumption ) (MASES); anaerobic metabolism threshold (economy, science, learnability) (W ANMT); heart rate on ANMT (criterion of efficiency of aerobic source use) (heart rate ANMT); general energy fund (GEF). Also bioenergetics groups of the sportsmen were defined, individual and current level of the wrestlers.

Research results. In the functional training of Greco-Roman style wrestlers one of the main aims is the mechanisms of muscular work energy supply training, which is connected with such inner functional indices as power, volume, recoverability, effectiveness, the level of mobilization, metabolic processes realization. Many authors mention that the functional resources of the organism are individual which is connected with the genotype conditionality of aerobic and anaerobic resources [3,4,6,7]. Some sportsmen have the mechanisms of muscular work energy supply potential which provides the development of endurance or speed or strength and this conditions the character of sportsmen’s organisms genotype to different types of loads [1, 2,5].

It is known that muscular work energy supply happens in two modes. The first mode is anaerobic, when energy compensation happens in case of oxygen deficiency. The second mode is aerobic, when the necessity of the organism for oxygen is fully satisfied.
For the individual planning of the training loads we defined the bioenergetic profile of the wrestlers. Picture 1 presents the classification of the wrestlers according to bioenergetic groups.

![Classification of wrestlers](image1)

**Picture 1.** The classification of the wrestlers according to bioenergetic groups

Picture 1 shows that the first group includes 7% of the wrestlers, the second group includes 58%, the third group includes 21% of the wrestlers and the fourth group includes 14% of the wrestlers. It is noted that among the wrestlers who have the qualification of master of sports or candidate master prevails the second bioenergetic group which is characterized by predominance of aerobic – glycolytic type of energy supply of muscular work, a high level of learning capability, effectiveness, science, reactivity.

According to studied indices of functional and reserve resources of the wrestlers’ organism in January and March 2014 we see the following changes (Table 1).

<table>
<thead>
<tr>
<th>Indices Period</th>
<th>ANAMV</th>
<th>% ANAMV</th>
<th>AMV</th>
<th>%AMV</th>
<th>GMV</th>
<th>PKP</th>
<th>PGL</th>
<th>MASE</th>
<th>W ANM</th>
<th>Heart rate ANMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>74.76</td>
<td>±30.92</td>
<td>22.31</td>
<td>±6.57</td>
<td>77.69</td>
<td>±6.57</td>
<td>327.8</td>
<td>1±48,85</td>
<td>32.03</td>
<td>73.69±5.75</td>
</tr>
<tr>
<td>March</td>
<td>77.87</td>
<td>±29.51</td>
<td>23.80</td>
<td>±6.10</td>
<td>76.20</td>
<td>±6.10</td>
<td>320.4</td>
<td>1±45,34</td>
<td>31.76</td>
<td>71.07±5.86</td>
</tr>
</tbody>
</table>

Comparative analysis of the wrestlers’ current state allowed to determine that during the research period there is decrease of aerobic resources, the level of working capacity, the power of glycolytic, aerobic sources of energy supply.

We also analyzed the integral functional state of the wrestlers. There are positive changes of the studied indices. In the indices of anaerobic metabolic volume, which characterize anaerobic resources of the wrestlers, we see a positive dynamics. We see a positive dynamics of all wrestlers’ indices increase: anaerobic type has increase to 15.2% (P > 0.05); the mixed type to 17.3% (P > 0.05); aerobic type to 18.9% (P > 0.05). The deviation from the model values of the wrestlers’ ANAMV was 6.67%, from the first stage to the second stage of the research works the changes into decrease to -1.66% was stated. If we consider bioenergetics groups, the average level of a current functional state and reserve resources of an organism is seen only in case of one sportsman.

In the indices, characterizing aerobic metabolic volume (AMV), we see the increase of average results: anaerobic type to 14.7% (P > 0.05); the mixed type to 16.2% (P < 0.05); aerobic type to 18.6% (P > 0.05). In the indices of general metabolic volume (GMV), characterizing the level of wrestlers’ working capacity, we see the indices increase in case of all sportsmen: anaerobic
type to 17% \( (P > 0.05) \); the mixed type to 16.1% \( (P < 0.05) \); aerobic type to 19% \( (P > 0.05) \). In power indices of kreatinephosphate source of energy supply (PKP) all wrestlers have increase to the second stage of the research: anaerobic type to 24.8%; the mixed type to 20.5%; aerobic type to 17.9%. In the indices, characterizing the power of glycolytic source of energy supply (PGL), we see positive changes of the wrestlers’ average indices in case of \( P < 0.05 \): anaerobic type to 25.6%; the mixed type to 16.5%; aerobic type to 6.9%. In the indices, characterizing the power of aerobic source of energy supply (MASES), i.e. maximum oxygen consumption, we see the decrease. Moreover, a deflection to 2.37% from model indices of MASES was defined. It is connected with the orientation change of the training process. Due to the competitions wrestlers have the increase of the training loads intensity and the decrease of the loads volume of aerobic orientation which influences the aerobic source of energy supply and oxidative muscle fiber formation.

In the indices, characterizing the anaerobic metabolism threshold (W ANMT) and the criteria of efficiency of aerobic source use (heart rate ANMT), all wrestlers have a positive dynamics of changes (picture 2).

![Graph of indices changes of the functional and reserve resources of Greco-Roman style wrestlers’ organism taking into account the bioenergetics profile, %](image)

**Picture 2.** The indices changes of the functional and reserve resources of Greco-Roman style wrestlers’ organism taking into account the bioenergetics profile, %

According to the results of the functional and reserve resources of an organism determination, on the second stage of the research we see that the wrestlers from the group of an anaerobic profile have the highest and the most reliable increase in the indices of PGL, PKP. The wrestlers from the group of an aerobic profile have the highest and the most reliable increase in the indices of AMV, GMV, W ANMT, heart rate ANMT. The wrestlers from the group of a mixed profile have the highest and the most reliable increase in the indices of ANAMV, PKP, PGL and heart rate ANMT.

In March the operative state and reserve resources of the wrestlers’ organism had minimum and satisfactory levels in case of high level of a current and integral states of an organism. It is connected with the fact that the research period coincided with the fulfillment of great training loads and competitions. In order to fulfill thorough control of the wrestlers’ functional state it is necessary to have operative control.

It is known that symbolically there are three levels of muscle work energy supply. But the use of kreatinephosphate is enough for 10-15 seconds of work, the use of glycolysis for 2 – 4 minutes. The ability of a person to resynthesis of adenosine triphosphate (ATP) in such cases is individual. They are also individual in case of aerobic mechanism. On the one hand, the power and volume of each level are conditioned by nature, on the other hand, the range each of them can be widened due to the training.

The main is the question concerning the organization of the training lessons taking into account functional and reserve resources of the wrestlers’ organism. We think that a training
process should be built in a way that the fulfilled training loads are directed to development of a necessary source of energy supply, taking into account the individual resources of an organism.

For example, the wrestlers from the third bioenergetic group are genetically predisposed to an optimal balanced level of energy supply of muscular work. But this statement allows to revalue own individual resources in the conditions of maximum stress. During the training the sportsman can be confident but at the same time can fail competitions. That is why we consider it reasonable to use the exercises of aerobic orientation. A low level of power endurance demands keeping power resources during the whole period of training.

The given bioenergetic group can be trained according to the mixed scheme where the principle of undulating alternation of the volume and intensity of the training and competitive loads correspond according to the principle of “pendulum”. The training process organization according to this principle provides possibilities increase of great volume of physical loads fulfillment with intensity increase. We can widely use a contrast alternation of “stressed” and “regulating” micro cycles in case of undulating changes of the volume and intensity of physical loads correspondence. In yearly macro cycle, especially during the period of direct training for the competitions, sequentially alternate stressed and regulating micro cycles. At the stage of direct training for the competitions it is recommended to include a base micro cycle into a training mesocycle during two weeks, where you can fulfill maximum possible volumes of the training loads, especially in the second and third zones of intensity. Then it is necessary to hold a restoration micro cycle where it is recommended to decrease general volume of physical loads to 50-60 %. Then it is reasonable to include stressed micro cycle with maximum use of a special training load where it is necessary to increase the volume of work in the fourth and fifth zones of intensity to 20-30%. Moreover it is reasonable to participate in one-two control battles and preliminary control competitions. Weekly micro cycle before the competitions includes the training loads, decreased in volume in comparison with a previous micro cycle for a full recreation. Before the main start the sportsmen have to train taking into account their state of health under control of the specialists. Before the important competitions, especially two or three days before them, it is necessary to hold a control training with the volume of 70 % of a competitive exercise. The training before the competitions can be held no later than three days before the main competitions. A day before the start it is recommended to hold a sucking training fulfilling the main techniques of the competitive activity.

During the preparatory period it is necessary to hold one or two trainings directed at a special power endurance development. And during the competitions it is reasonable to include a training directed at a special endurance development.

During a yearly cycle of training can be planned two or three competitions, during which the wrestler should show the best sport results.

We give an example of the recommended intensity zones of the training load fulfillment for the wrestlers from the third bioenergetic group, taking into account the current functional state: 1) restorative – heart rate 149 – 161 bpm; 2) aerobic - heart rate 162 – 173 bpm; 3) aerobic-anaerobic - heart rate 174 – 185 bpm; 4) anaerobic-aerobic - heart rate 186 – 197 bpm; 5) anaerobic – heart rate more than 197 bpm. Such an approach allows to define the wrestler’s training level, taking into account the effectiveness criteria of anaerobic and aerobic energy supply source use according to heart rate indices.

The second bioenergetic group, where the bioenergetic profile - aerobic- glycolytic type of muscular work energy supply – is characterized by a high level of economy, science, flexibility, reactivity of a wrestler’s organism. The representatives of this profile have a low level of anaerobic resources and a special power endurance.

During the training process it is reasonable to use the system of long-term training organization which is based on the principle of undulating alternation of the volume and intensity of the physical loads at the stages of sport perfection and a yearly cycle.

At the stage of a direct training for the competitions (three-five weeks or another period) the base (two-three weeks) and precompetitive (two-three weeks) micro cycles are sequentially used.
During the base micro cycle it is necessary to fulfill the training load of aerobic orientation, mainly in the first-second zones of intensity. During the period of preparation for the main competitions it is necessary to decrease the general volume of the training load of different intensity in the micro cycles to 40-50%. The volume of the training load in the fourth and fifth zones of intensity it is necessary to increase to 20-25%, participating in control trials and lead-in competitions using 5 or 6 starts.

The last control training is held three-four days before the competitions. The final sucking in training with the elements of competitions is held 16-24 hours before the start. In the micro cycles of the preparatory period it is necessary to plan two trainings directed at a special power endurance development, at the stage of a direct training for the competitions one or two trainings. The training directed at a special endurance development should be held only three-four days before the important combats.

The highest results it is reasonable to plan 2-3 times a competitive stage. We also present the recommended intensity zones of work for the wrestler from the second bioenergetics group, taking into account the indices characterizing the state of energy supply in the context of the comparative characteristics of a current state with individual model indices: 1) restorative – heart rate 139 – 151 bpm; 2) aerobic - heart rate 152 – 163 bpm; 3) aerobic-anaerobic - heart rate 164 – 175 bpm; 4) anaerobic-aerobic - heart rate 176 – 187 bpm; 5) anaerobic – heart rate more than 187 bpm.

Thus at the stage of maximum realization of Greco-Roman wrestlers’ individual resources one of the reserves of a further sport perfection is sports training individualization based on thorough study of the functional and reserve resources of an organism, search and application of the most effective means and methods of training.

The research allows to conclude that planning the training and competitive loads of Greco-Roman wrestlers should be held taking into account the bioenergetic profile.

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THE INFLUENCE OF THE RULES CHANGE ON THE COMPETITIVE ACTIVITY OF GRECO-ROMAN WRESTLERS

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Keywords: the changes of competition rules, the peculiarities of the competitive activity, success, activity in wrestling, quantitative – qualitative indices.

Annotation. The article is about the problem of the rules change influence on Greco-Roman wrestlers’ competitive activity. Many research workers and experts affirm that the changes of competition rules influenced the quality of wrestling and it demands reasonable changes in the methodology of sportsmen training.

Research methods: scientific and methodical literature analysis, video materials analysis, statistical manipulation of mathematical data.

Materials: To reveal the peculiarities of the competitive activity after the rules change in 2013 we carried out the comparative analysis of Russian Championship 2006 and Russian Championship 2013 in all weight categories.

Results: 198 combats were analyzed by means of quantitative - qualitative analysis method of the competitive activity with the help of the video materials.

Conclusion: The analysis of the video materials showed that that the changes had positive impact on the wrestlers’ activity. Wrestling became more dynamic but as the rules of the previous years provided standard positions, which mainly defined the winner, wrestlers’ technical arsenal turned out to be low and this influenced the quality and quantity indices of the technical actions and success. The research results reveal the necessity of the Greco-Roman wrestlers’ training process perfection taking into account the changes of competition rules. New rules demand hard and intensive work both in technical and physical training.

Introduction

In the history of mankind wrestling has been one of the favorite kinds of sports for centuries. Combats helped to form definite skills which were necessary in everyday life. In the course of time environment and interests changed, new civilization demands created definite framework, rules of wrestling.

During previous decades the main demands for wrestling on the one hand have been the personality’s moral, volitional and physical qualities development, tendency to healthy life style in general and spectators’ interest attraction on the other hand.

Competitions rules evolution had many changes mainly directed at combats intensity stimulation. For example, weight range development, a combat formula change, standard positions introduction and etc. Each change forms new laws of combat which demand athletes’ retraining.

A new wave of changes happened when it was announce by the International Olympic Committee about the possibility of sports wrestling exclusion from the program of the XXXII nd Olympic Games 2020 in Tokyo. But in spite of this difficult situation it is necessary to correct timely wrestlers’ readiness to the competitive activity.
The aim of this research work is theoretical and practical substantiation of the necessity to create the methodology of Greco-Roman wrestlers’ training taking into consideration the competition rules change.

The objectives:
1. To reveal the peculiarities of Greco-Roman wrestlers’ competitive activity.
2. To define the influence of the rules change on Greco-Roman wrestlers’ success in competitive activity.

Research methods:
1. Scientific and methodical literature analysis
2. Video materials analysis
3. Statistical manipulation of mathematical data.

Research results and their discussion

On Russian Championship in 2006 the competitions were held according to the system of the direct elimination and with consolation for those who lost. The combat consisted of three periods with duration of two minutes, to become a winner a person had to win two periods. The period consisted of one minute combat in stand and the combat which duration was 2X30 seconds in the pit. The wrestler who is upper in the pit takes recapture by the waist from the side and when it is done the arbiter whistles and the upper wrestler can fulfill technical action. Within 30 seconds both wrestlers can fulfill all possible actions. If the upper wrestler didn’t fulfill technical actions he was punished by the caution and by giving one point to the rival. On Russian Championship in 2013 the competitions were also held according to the system of the direct elimination and with consolation for those who lost. The duration of the combat was two periods three + three with 30 seconds interval. The punishment for passive combat is a reproof given to a sportsman and a cornerman, the first caution and a choice of the position by an active wrestler the posture “partner” or “stand”, for the second caution one technical point is given and a choice of the posture “partner” or “stand”, the third caution meant the end of the combat, the victory of an active wrestler, if the score is 0:0 the wrestler who received a point for an active combat last wins, unpremeditated leaving of the carpet is punished by a reproof instead of one point. The second leaving of the carpet is punished by one point, the caution and by a choice of the position “partner” or “stand” by an active wrestler. The technical actions which are finished outside the carpet are evaluated by 1, 2, 3, 5 points. Determination of the wrestler’s passivity should be done by the referees of the combat within a short period of time, within 30 seconds since the beginning of the combat. The winner is defined according to the sum of points received in two periods. Total victory is awarded if the wrestler puts his rival flat on his back or has total sum with the disparity of seven points. The competitions begin at 11 o’clock. Two extra hours will give the finalists an opportunity to have rest and to show nice, interesting combat. The position of the lower wrestler in the pit: the wrestler sits on the shins, hands are at the distance of no less than 20 centimeters from the knees. The position of the upper wrestler: one knee is on the carpet, hands should touch the rival’s shoulder-blades.

To reveal the peculiarities of the competitive activity after the rules change in 2013 we carried out the comparative analysis of Russian Championship 2006 and Russian Championship 2013 in all weight categories.

198 combats were analyzed by means of quantitative - qualitative analysis method of the competitive activity with the help of the video materials. The research results are presented in pictures 1, 2 and 3.
Picture 1. Distribution of the actions in the stand and in the pit, in percentage.
Picture 2. Quantitative – qualitative indices of the competitive activity, in conventional units.
Picture 3. The indices of competitive activity success in stand and in the pit.

The research results showed that after competitions rules change in Greco-Roman wrestling in 2013:

- changed the correlation of actions distribution in stand and in the pit. In 2006 the correlation was 11.86% of the fulfilled actions in stand and 88.14% of actions in the pit, after the rules change in 2013 on average the correlation was 49% in stand and 51% in the pit;
- the activity index (AI) increased from 0.489 units in 2006 to 1.131 in 2013 and it proves the changes in the rules to be exact the struggle against passivity, stimulates the sportsmen to be active during the combat;
- quantitative index of effectiveness (QNIE) decreased from 0.712 units in 2006 to 0.523 units in 2013 because there was a low level of wrestlers’ technical readiness as the rules of the previous...
years provided, for the determination of the winner, a standard position, wrestlers’ training on all stages of technical training accentuated on the pit and the base technical readiness was ignored. This situation led to poor arsenal of techniques in wrestling nowadays; qualitative index of effectiveness (QLIE) decreased from 0.441 units in 2006 to 0.219 units in 2013. It proves that the decrease of the technical actions led to the decrease of the quality, according to the previous rules the result of the combat were determined in the standard position but according to new rules the tactical scheme of the combat changed greatly. Wrestling needed different tactics and techniques and for the fulfillment of a high quality technical action it is necessary to vary and individualize technical and tactical training of Greco-Roman wrestlers; the index of success in stand (SS) increased from 0.444 units in 2006 to 0.611 in 2013. The increase of this index shows more qualitative wrestling in stand, the increase of technical actions in stand can be explained by the absence of a compulsory standard and activation of wrestlers by the referees.
the index of success in the pit (SP) decreased from 0.766 units in 2006 to 0.672 units in 2013. In this case the decrease doesn’t mean low quality of the combat, new rules provide standard position of a high pit as a method of passivity reduction and in many cases this method activates the combat.

The data of success show that with the change of the rules a combat was arranged equally in the pit and in the stand. New rules demand hard and intensive work both in technical and physical training.

Conclusion

Thus the results of Greco-Roman wrestlers’ competitive activity study, according to the rules of 2006 and after the rules change in 2013, showed that the changes had positive impact on the wrestlers’ activity. Wrestling became more dynamic but as the rules of the previous years provided standard positions, which mainly defined the winner, wrestlers’ technical arsenal turned out to be low and this influenced the quality and quantity indices of the technical actions and success. The received results reveal the necessity of the Greco-Roman wrestlers’ training process perfection taking into account the changes of competition rules.

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TO THE QUESTION OF METHODOLOGICAL GROUNDS OF A PERSON’S NORMATIVE – JURIDICAL CULTURE FORMATION PROCESS

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Keywords: axiological, civilized, competence based and system approaches, juridical culture.

Annotation. The study of theoretical-methodical preconditions of normative-juridical culture formation of the specialists from the sphere of social tourism showed that the questions of normative-juridical culture formation, legal awareness, juridical competence, juridical education were discussed in the research works on the problems of the specialists’ professional training for realization of the branches of economics.

Research methods: scientific and methodical literature analysis, comparative analysis.

Materials. The article reveals social factors and the kinds of legal awareness deformation. Research materials presented in the article helped the author to reveal that a juridical knowledge gives the specialists an opportunity to build professionally, taking into account the laws and norms, their professional activity, to find correct solutions to different organizational-administrative, economic, informational-communicative and other problems.

Results. In the mentioned by the author research works the essence and specificity of juridical competence of the future specialists in a definite profile (higher educational establishments, vocational educational establishments) are determined; the structure of such competence is defined, the set of components.

Conclusion. The methodological grounds for this research work are axiological, civilization and competence approaches.

The whole society reorganization, including a social consciousness in the end of the XX th – beginning of the XXI centuries, democratization, acknowledgement and assignment of a person’s rights and freedom in political-juridical sphere, free enterprise and competition in the sphere of economics caused the necessity to change state-juridical life, all attempts were directed at civil society and constitutional state creation. It demanded from a person, as the main member of a social development, an ability to fulfill independent actions in the context of legal framework. And as it was mentioned by N.S. Sokolova, it conditioned the formation of a developed individual legal awareness.

We should share the opinion of Y.I. Zhegusov, who thinks that the main negative social factors of modern Russian youth legal awareness formation are the following:
- the crisis of values and social norms of the Russian society which is characterized by anomia state of the criminal type, conflict of the cultures including the sphere of law. In the conditions of the social anomia the traditional norms and values lose their importance, become legal earlier reproved and punished actions, the distinctions between moral and amoral, legal and illegal is eliminated. The consciousness of a wide population layer loses positive orientation and becomes marginal;
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- accessibility of the ways, methods and technologies of informational-psychological war. Mass media became its especially effective instrument. The main aims of informational-psychological special operations are devaluation and destruction of common moral and juridical norms, cultural wealth of a definite society, propaganda of destructive values of consumerism and “beautiful life”, cultural and intellectual level of population “simplification”, artificial creation and preservation of “stable instability” state in society, war between the competitors and others;
- spread of social sphere of a criminal society, the spread of criminal subculture not only prevents juridical socialization of the youth but also is a source of its alternative and criminal socialization;
- activity effectiveness decrease of the law enforcement body, orientation to own business development leads to their estrangement from basic mass. In modern conditions the law enforcement body is oriented only to revelation and punishment of the representatives of “poor criminality” and the “rich criminality” escapes punishment. In such conditions we can’t speak about the participation of the law enforcement body in juridical socialization of the youth;
- destruction of the whole system of juridical upbringing and education was the result of the state collapse, a general ideology loss on which was the juridical propaganda based, as a result decreased a positive influence of the agents of juridical socialization: a family, a school, mass media, the law enforcement body and others;
- the crisis of a social institution of family which is seen in the increase of adverse families level and in weakening of a family defensive function from negative factors of socialization.

The research worker V.V. Diakonov determines the definite kinds of legal awareness deformation of a modern youth:
- juridical nihilism is a negative attitude to law, negation of its social value, deliberate choice of miscarriage;
- juridical fetishism is exaggeration, overemphasis of the role and importance of legal control in society;
- juridical infantility is the role of law underestimation, poor knowledge of law.

The state also thinks that a low level of juridical culture and legal awareness, juridical nihilism of the citizenry in Russia is a serious problem for the principles of dominion realization. That is why not accidental is the document “The basis of state policy of the Russian Federation in the sphere of juridical competence and legal awareness of citizenry” (2011), adopted by the President of Russia. It is noted in the document that in terms of constitutional state grows the role of law in the system of social regulators, increases the role of juridical basis in behavior, life of society and state. The state creates the conditions which provide juridical competence and legal awareness of the citizenry, their knowledge of the character, ways and limits of their rights realization and defense, protected by the law interests, in administrative and court order, accessibility of qualified juridical help for people. Another important aim of the state is propaganda and explanation of the need for duties and the rules of living together observance by the citizens, respect for the rules and interests of other people irrespective of their race, nationality, language, attitude to religion, ideas and other conditions. As the factors of the state policy in the sphere of education and upbringing of youth in the given document are presented: the practice of the basis of law teaching development in

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educational establishments of different types and kinds, different variants of regional models of juridical education support, educational courses development which include juridical themes, the development of educational programs, manuals and the level of teachers’ juridical competence improvement, research works fulfillment in order to provide scientific-methodical support of juridical education.

Lack of knowledge of normative-juridical acts, a low level of legal awareness, as D.A. Kruglov mentions, don’t let the specialists in the sphere of physical culture and sport of invalids, the invalids themselves, who go in for physical culture and sport, realize their legitimate rights.

In recent years a range of research works were made on the problem of juridical, professional-juridical, social-juridical competence, juridical culture, legal awareness of students of different specialities formation:

- juridical culture formation (legal awareness) of the college students studied R.S. Dralyk, of motor transport vocational educational establishments students – A.M. Kunizhev, of the future teachers of physical culture in the establishments of vocational education – E.A. Kuznetsova and others;
- the peculiarities of a University students juridical competence formation studied I.Y.Seryaeva, S.B. Tuguz, of the students from physical culture Universities – S.S. Voevodina, D.A. Kruglov, I.N. Chesnokova, of technical Universities – A.R. Abutalipov, M.E. Polyakova, of the agricultural University – O.V. Kulagina, of the nautical University – K.S. Galieva, of the students of economic specialities – S.A. Bondarenko, of the students of not juridical profile – V.V. Potomakhin, of the cadets in the system of higher military school – T.S. Slivin, A.S. Scherbakov and others;

In the mentioned above research works the essence and specificity of a juridical (professional-juridical, social-juridical) competence of the future specialists of a definite profile (higher educational establishments, vocational educational establishments); the structure of this competence is created, the number of competences in its structure are defined; the model of this competence and the pedagogical conditions of its realization are created.

I.N. Chesnokova proved that one of the main conditions of a successful functioning of physical culture and sport sphere in free market economy is deep knowledge in the sphere of law and the ability to use it in work which the directors and the specialists possess. Juridical knowledge, as the researcher says, helps the specialists more professionally, taking into account not their intuition but the knowledge of the laws and other norms, build their professional activity, find correct solutions to different organizational-administrative, economic, informational-communicative and other problems. The formation of a necessary level of juridical knowledge and skills, as I.N. Chesnokova determines, is one of the important aims of professional training in a higher educational establishment [8].

E.L. Bolotova studied the system of continuous juridical training of the teachers. She considers juridical training as a part of a teacher’s professional training and notes that a teacher’s juridical competence is determined by the level of his or her legal awareness, juridical activity revealed in terms of a definite collective. The base of this competence is the system of knowledge and law understanding, and acting in accordance with them [2].
But not only juridical culture is important. The normative culture also plays an important role. N.N. Pokrovskaya thinks that one of the reasons why people don’t observe simple safety precautions is that a low level of normative culture of the population in Russia. Normative regulation of behavior is possible only if the specialists are inclined to follow the rules, norms, to obey the accepted order and the made decisions. This inclination to a normative behavior describes the notion of normative culture [6].

A.A. Zvezdina defines three main tendencies of changes in the sphere of education. First, world tendency to change the main paradigms of education (the crisis of a classical model and system of education, new fundamental ideas creation in philosophy and sociology of education, in humanitarian science, experimental and alternative schools creation). Secondly, our education orientation at integration into world culture, the system of continuous education creation, freedom in the choice of curriculum, teachers and students associations organization on the basis of independence of higher educational establishments. The third tendency is in traditions of a Russian school and education restoration. An educated person is not only a person who knows, even with a formed world view, but a person who is able to orient in difficult situations of a modern culture, to understand his or her place in the world [3].

Modern research workers mention that during recent ten years there goes education humanization, the main becomes personality oriented approach to the essence of education content determination. The content of education they understand as pedagogically adapted system of knowledge, abilities and skills, experience of creative activity and the experience of emotional-volitional relation which provides developed in all spheres personality formation, personality who is ready to develop a material and spiritual culture of a society.

The process of the specialists training is a pedagogical phenomenon that is why it can be studied with the help of an axiological or value approach which, as the authors of the manual “Pedagogics” V.A. Slastenin, I.F. Isaev and E.N. Shiyanov write, is a specific “bridge” between the theory and practice. It allows, on the one hand, to study phenomena according to their abilities to satisfy the needs of people, on the other hand, to solve the problems of society humanization [7].

N.V. Alyab’eva and T.D. Barysheva, using the axiological approach in the students professional education, mention that the educational process should be built in a way that a future specialist could realize the social functioning of the values, see the changeability of professional activity values, compare them with cultural norms, evaluate reflexively own values and guiding lines. This is the solution to the problem of axiological-notional self-determination on the individual level which will provide stability of new positive values of the society and education [1].

A very important scientific achievement which provides revaluation and rethinking of the traditions role in development of civilization and national cultures is the creation of a civilization approach to historical-pedagogical process study by G.B. Kornetov. His research work gave an opportunity for integral understanding and vision of historical-pedagogical process, bringing it beyond the bounds of restrictions of some countries and cultures. The civilization approach helps to reveal cultural specificity, peculiarities of the Russian education development in terms of global-pedagogical process [5].

In his research work, dedicated to social-juridical competence formation among the future specialists in the sphere of physical culture and sport [Kuznetsov S.A.], we present the analysis of some works, describing the origin and development in science of the competence approach. Zimnyaya I.A. determines three stages in its development [4].

Competence approach:
- makes it possible to pass from the orientation to knowledge reproduction of the pedagogical education to knowledge application and organization; to escape the dictate of a subject and it corresponds with modern conditions which state new demands before the graduates among which the priority is given to systematically organized,
intellectual, communicative, reflexive, self-organizing skills [O.I. Vartynyk, I.N. Medvedev, S.V. Pan’kova, O.I. Solov’eva];
- allows to coordinate mass school and labour-market needs because it accentuates the result of education. Moreover the result is not just a sum of received information but a person’s ability to act in different situations and it is especially valuable on the present stage of society development [L.S. Chopenko];
- is considered in the context of education quality of the students and a professional training of a future teacher. The quality of education in this case is analyzed taking into account a real readiness of a student to the mastered knowledge and skills application in different spheres of life, including educational and professional spheres [A.V. Tutolmin].
Thus the methodological grounds for this research work are axiological, civilization and competence approaches.

**Bibliography**

MANAGEMENT OF SPORT VOLUNTEERING IN LATVIA

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Key words: legal system, professionalism raising, sport management, volunteers, cooperation.

Annotation: The vast differences among countries in the field of volunteering indicate the need for mutual learning and potential acquisitions. It is therefore necessary to facilitate peer learning and awareness at European level in order to promote professionalism in the industry and that the Member States and civil society can better adapt to the changes mentioned above. It will help to unlock the potential of volunteering in the European Union and faster to achieve its social objectives.

Methods: Analysis of the scientific and methodological literature, survey (questionnaire), interviewing, methods of expert assessment, methods of mathematical statistics.

Material: The article is about the importance of volunteer work in the development of sports management system in Latvia. Materials of the research presented in this article, allowed the author to explore the theoretical and practical aspects in the management of volunteer work, perform the reflexes of individual experience of volunteer work, analyze surveys of experts and volunteers and develop proposals to improve the system of sports management development.

Results: The author developed the following proposals for the improvement of the sport management system:

1. The legal regulations of the volunteer work have to be systematized;
2. An organization that manages the volunteer work in sport in Latvia has to be created.

Conclusion. The research results reveal the five main directions of the organization:

- Information about the significance of the volunteer work in society – distribution of information in different mass media that are related to the specific target audience; visits; presentations in schools by the use of informal educational methods; different discounts to parents, whose children are in any sport teams. Publish the activities of successful volunteers.
- The database of volunteers will provide an opportunity to have an easy access to find and choose volunteers. Volunteers will be able to register in the database, and will be informed about any activities of the volunteer work. A different data analysis will be possible from the database.
- Education of volunteers. Create a handbook about the volunteer work in sport. Educate the coordinators of volunteers. Organize seminars of different important topics related to the volunteer work.
- With the help of the local government and sport organizations provide sport events with volunteers. Understand the needs of volunteers and correspondingly prepare them from the volunteer work. Find the most appropriate volunteers by gathering the information about
candidates and carrying out a selection. Offer volunteers opportunities of the work that conform with the interest of volunteers.

- Evaluation of the volunteer work. Recognition of the skills and knowledge that has been acquired in the time of the volunteer work by taking into the account the received experience. By the end of the volunteer work as the appreciation of the work, every volunteer receives a certificate. Other events regarding the appreciation of the volunteer work may be organized. Recommendations may be provided if needed.

Historically voluntary work throughout the world is recognized and valued activity. European Union Member States have a rich diversity of tradition, perception, culture and legal system. In more than half of the EU countries, most volunteers are engaged in the area of sport, physical activities and outdoor activities. In Latvia volunteering in sport is based on volunteers engaged in events. In sport federations and associations in Latvia there are no volunteers.

The vast differences among countries in the field of volunteering indicate the need for mutual learning and potential acquisitions. It is therefore necessary to facilitate peer learning and awareness at European level in order to promote professionalism in the industry and that the Member States and civil society can better adapt to the changes mentioned above. It will help to unlock the potential of volunteering in the European Union and faster to achieve its social objectives.

The aim of the research: to develop proposals for voluntary work in sport management system improvement in Latvia.

We share the researcher Wilson statement that volunteers have the opportunity and responsibility to become society values changers if their work is used properly and conducted purposefully.

Volunteers are employed in a variety of ways and many different fields across Europe, depending on the cultural, historical and legal context of the country concerned. In more than a half of the EU countries, the majority of volunteers are involved in the field of sport, physical and outdoor activities. Volunteers participate also in the social sphere and welfare, as well as in health care and charity, in religious and cultural institutions, in recreation and entertainment, in educational organizations, in training and research.

Volunteer movement is very common, for example, in the Scandinavian countries, where about 30% of the population act as volunteers, in Germany: 34%, in the U.S.: more than 50% of the population.

In assessing the financial impact of volunteer work, should be pointed out a number of benefits for institutions that offer volunteer work. Volunteers generally have higher education and knowledge, compared with workforce, available in labor market; also they tend to have spent more time in education. Volunteers are also able to perform some tasks better than paid employees, for example, when between a volunteer and a client (in social work) develops trust, or when collecting donations: this work will be better done by a person who believes in the idea of the organization, not who does it because it is his or her work.

Monetary value of voluntary work in Latvian in 2010 was LVL 82.558 million, accounting for 0.65% of the Latvian GDP. In volunteering at least one hour spent 435 thousand Latvian citizens and together in voluntary work were spent almost 33 million hours. Comparison of the importance of volunteering in other countries has shown that in Latvia the indicators are not the highest. In the Netherlands, for example, voluntary contribution to the national economy constitutes 4.13% of the gross domestic product. However, on the background of other Eastern European states Latvian indicators are comparatively high. For example, in the Czech Republic voluntary contribution to the economy is only 0.38% of the GDP, although in the ISCA supported project "EUROvol net" in 2010 the Czech Republic refers to 1.5 million volunteers in sport during 58 years, while the Latvian Grassroots Sports Association has provided data that in Latvia were 3,000 volunteers in sport during 3 years. Analyzing volunteering in sports in our neighboring countries, we found out that in
Lithuania are listed 3,000 volunteers in sport, in Estonia: 12,000 volunteers in sport during five years.

Results. The research, carried out by Latvian Ministry of Education and Science in 2011 "Opportunities for the Development of Voluntary Work in Latvia and its Contribution to the Economy" shows that in 2010 in volunteering in sport participated 63 thousand people from 435 thousands of volunteers in general, who worked for 2484 hours, accounting for LVL 6808 - 0.053% of GDP . Volunteer work is based on mutual benefit - benefits not only the organization that acquires motivated and enthusiastic volunteers, who enable the organization to increase its capacity in reaching the goals and simultaneously also contributes to a reliable and positive public image, but benefits also the volunteer who can grow and feel useful for his or her contribution. Creating a voluntary work program, these two parties should be balanced, so that voluntary work in long-term is interesting for both employers and employees. Voluntary work should be organized so that each volunteer participates according to his or her potential, and volunteers have the opportunity to learn new skills and develop new competencies.

Figure 1. The sources of information from which volunteers learn about the opportunity to engage in activities ( %)

Figure 1 shows that majority of the respondents information about the possibility to engage in voluntary work have obtained at school and in higher education institution (37%). Next information disseminators are friends, who have informed 28% of respondents, and ads on Internet have used 18% of respondents. As the sources of information are mentioned also e-mails, sent by organizers (11%), and 7% of respondents have obtained information in another way, for example, at work, in army, from sport coach, from the president of sport federation, who sent personal invitation due to excellent cooperation on daily basis.

Figure 2 shows that the most popular answer to the question if in future respondents will engage in voluntary work, is “Yes”, which means that 61% (118) of respondents also further want to participate in voluntary work in different sport events.

Figure 2. Respondent opinion on further engagement in voluntary work ( %)

32% of respondents will seriously explore the offer, will evaluate, what event it is, who organizes it, and then will decide whether they will engage in volunteering. This answer could be influenced by respondent previous experience in sport events. Only 5% of respondents answered „No”, which means that these respondents in future would rather not participate in volunteering in sport events.

In respondent opinion a very important recommendation is the need to raise public awareness of volunteering in sport. As very important this recommendation is considered by 45% of volunteers. As the next very important recommendations 40% of the volunteers rank recommendation that pupils (13-18 year olds) should be advised to volunteer. The next recommendation that is be very important at the discretion of the respondents is "volunteers are provided a certificate / licenses with hours of work records” (38%), followed by a recommendation to create a database where you can sign up as a volunteer at sporting events (37%). Among the respondents very important is also the suggestion to organize events, seminars and training for volunteers in sport (35%), and a recommendation to enter into voluntary agreements made in order to avoid misunderstandings, confusion (35%). When ranking recommendations in order of importance, as the least important recommendation remains the need for a specific law on voluntary work and its recognition in the country (19%).

Conclusion. Investigating the theoretical and legal aspects in managing the volunteer work, carrying out the reflection of personal experience in volunteer work, analyzing the questionnaires of volunteers and experts (coordinators of the volunteer work), following proposals for the improvement of the sport management system had been developed:

I. The legal regulations of the volunteer work have to be systematized;
2. An organization that manages the volunteer work in sport in Latvia has to be created.

The five main directions of the organization:

- Information about the significance of the volunteer work in society – distribution of information in different mass media that are related to the specific target audience; visits; presentations in schools by the use of informal educational methods; different discounts to parents, whose children are in any sport teams. Publish the activities of successful volunteers.

- The database of volunteers will provide an opportunity to have an easy access to find and choose volunteers. Volunteers will be able to register in the database, and will be informed about any activities of the volunteer work. A different data analysis will be possible from the database.

- Education of volunteers. Create a handbook about the volunteer work in sport. Educate the coordinators of volunteers. Organize seminars of different important topics related to the volunteer work.

- With the help of the local government and sport organizations provide sport events with volunteers. Understand the needs of volunteers and correspondingly prepare them from the volunteer work. Find the most appropriate volunteers by gathering the information about candidates and carrying out a selection. Offer volunteers opportunities of the work that conform with the interest of volunteers.

- Evaluation of the volunteer work. Recognition of the skills and knowledge that has been acquired in the time of the volunteer work by taking into the account the received experience. By the end of the volunteer work as the appreciation of the work, every volunteer receives a certificate. Other events regarding the appreciation of the volunteer work may be organized. Recommendations may be provided if needed.
A DIRECTOR’S MANAGEMENT CULTURE IN TEACHER’S PROFESSIONAL COMPETENCE AND PEDAGOGICAL MASTERY DEVELOPMENT

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Keywords: a director of an educational establishment, management culture, pedagogical competence improvement, the components of management culture, pedagogical problems.

Annotation. The system of a school director’s work with a teaching staff includes purposeful, consistent, integral, continuous work directed at the quality and effectiveness increase of an educational-pedagogical process. It is based on the study of progressive pedagogical experience, science achievements directed at a teacher’s pedagogical mastery and qualification improvement, at a creative potential development and improvement of the whole teaching staff, at educational level increase and students’ development.

Research methods: theoretical and comparative analysis of psychological – pedagogical and philosophic scientific literature, research materials on the problem; pedagogical experience study and summarizing, observation, discussion, questionnaire, interview, the methods of data evaluation and handling, systems analysis.

Materials. Psychological – pedagogical, philosophic theses about the teacher’s social and creative nature and multifactorial character of its development.

Research results. A director’s management culture consists of such components as the way and measure of a director’s personality creative self-realization in different components of management activity which is directed at passing, creation, mastering technologies and values in an educational establishment management. It consists of the following components: axiological, technological and personal-creative. The effectiveness of a director’s work with the teachers on their pedagogical mastery improvement is achieved in case of many conditions observance and consistent components realization, such as control; methodical work in an educational establishment; inspection; self-education which are considered as a general form of suggestions and remarks realization as a result of inner control, methodical work and inspection.

Conclusion. Pedagogical conditions are revealed and substantiated which provide a director’s effective work with a teaching staff on their professional competence and pedagogical mastery improvement.

As any integral system a director’s work with a teaching staff is connected with people activity which includes a complex of complementary and interconnected components. These components are the following: methodical work, inspection, control, self-education. The components include some complementary elements: aims, a content, problems, methods, means, forms and a result. The main role in this system belongs to people – ordinary teachers and school directors. The important conditions for the director’s effective work with a teaching staff are the following: their interaction according to a system approach, mutual understanding, unity.

In production, technology, philosophy, sociology, economics and other spheres the notion “management” is widely used. The notion “management” has the following interpretation: a purposeful activity of all the subjects directed at provision, formation, stabilization, an optimal
functioning and development of schools [1], conditions creation for a comfortable cooperation of all members of a pedagogical process in a child’s personality formation [2]. The analysis of different definitions of the notion “management” allows to define its main characteristics.

Management is characterized by: a subject – an active conscious person; an object – a thing that is managed, deliberate and aimed at achievement of the results regulating a subject’s impact on an object; this impact should provide movement to a desired state of an object in a correct, necessary direction. An organization management is understood as:

- activity directed at general prosperity of an organization, at interests assertion of the enterprises, establishments, organizations as a united object.
- the influence of an activity on behavior and work of other people; as management stands above the base, for example above an educational activity, and that is why very often management is called “activity above activity” and that is why the directors achieve results organizing other people, it means that the contribution into the final result is almost always mediate and indirect;
- influence on a group of people, on a collective of an organization, not only on a single person but the desirability and possibility of an individual work is not excluded;
- regulation of a joint-cooperation, communication, interaction, relationship between the members of a community; integration, joint efforts coordination, in this case work with an individual activity, his individual contribution into common cause is usually submitted to general goals and general work.

In scientific-pedagogical literature school is considered as a difficult social-pedagogical system and it defines the specificity of its management.

Management is an activity oriented at social needs satisfaction, at socially important values popularization; at the inner needs of an organization, its workers satisfaction; at provision of a resulting, steady functioning of a school, adaptation to changing inner and outer conditions of an educational process; at school development on the basis of innovative processes.

The process of management is relatively closed and has a cyclic character. While going through each cycle the system of management elements and organizations or a subject of management fulfills several consistent, changing each other stages: diagnostics; analysis; organization; planning; control; management and correction.

That is why any management process is divided into interconnected stages, which should follow each other. Each preceding stage stimulates the following stage and each of these stages is independent.

In modern world it is considered that the succession and content of the functions, of which the management process consists, is the same for all self-regulated systems.

Omission or underestimation of one of the functional elements leads to its effectiveness decrease and to the distortion of the whole management process. Management functions are considered as relatively independent and special kinds of activity, their full structure forms a united management cycle. That is why the most difficult problem connected with the functional aspect of management study is the problem of the management functions classification.

The scientists define the functions in educational establishment management: pedagogical analysis, planning, organization, prediction, correction, regulation, control and registration. There is the following management functions classification: informational- analytical, motivational- target, planned- prognostic, control-diagnostic, regulative-correctional, organizational- performing. All schools have different opinions according to the questions of management functions classification.

The members of management school also don’t have general opinion according to the question of management functions classification. C. Bernard defines such management functions as aim determination, inducement to co-ordinated actions, means manipulation and control. Alen L.A. offers the following management functions classification: motivation, planning, co-ordination, organization and control. According to the classification suggested by M.K. Mesken, M. Ak’bert,
D. Khedouri the management process consists of 4 connected functions: planning, motivation, organization and control.

Analytical activity, unfortunately, is not defined as the management function by many scientists. Underestimation of this management function has a negative impact on management activity. Analytical activity provides systematization and understanding of information stream, revelation of cause-effect relations, global understanding of a real state.

An educational establishment director’s management culture consists of such components as the way and measure of a director’s personality creative self-realization in different components of management activity which is directed at passing, creation, mastering technologies and values in school management. It consists of the following components: axiological, technological and personal-creative.

**Technological component** of a school director’s management culture is a range of ways and methods of pedagogical process management.

**Axiological component** of a school director’s management culture is in the range of management and pedagogical values which have essence and importance in school management.

**Creative - personal component** of a school director’s management culture is a creative act of the pedagogical systems management.

In administration work of an educational establishment with the teachers on their professional competence and pedagogical mastery development a great role belongs to the level of technological component formation.

Technological component of a director’s management culture is revealed in the ability:
- to fulfill control inside a school;
- to fulfill a methodical work with the teachers;
- to inspect the quality of subjects teaching;
- to create skillfully pedagogical analysis of a lesson and extracurricular activity;
- to prepare the teachers for attestation.

**A director’s ability to organize control inside a school characterizes:**
- an understanding by the school directors the importance of control inside a school for the teachers’ professional competence improvement;
- possession of methods, forms of control inside a school;
- the use of forms, methods, means in accordance with the specificity of subjects teaching, a teacher’s experience;
- an ability to reveal the content of control inside a school, knowledge of educational programs;
- a director’s didactic and methodical erudition;
- a director’s psychological readiness;
- possession of psychological-pedagogical analysis technology of different kinds of lessons as the main way of the teachers’ professional competence improvement;
- an ability to formulate conclusions which are the base for offers formation directed at the reasons of revealed drawbacks elimination.

**An ability to organize methodical work characterizes:**
- the aims and essence of methodical work realization;
- knowledge of the means, ways, forms of methodical work with teachers and their use taking into account the peculiarities of the subjects, pedagogical experience of the teachers;
- conditions observance of an effective methodical work at school;
- an ability to organize teachers’ self-education;
- knowledge of the analysis technologies of different types of lessons;
- an ability to formulate recommendations, conclusions and explain them to the teachers.

**An ability to inspect the quality of subjects teaching includes:**
- a professional check of a teacher’s activity correspondence to the norms of legislation and other legal acts;
- a check of curriculum fulfillment;
- a check of the students’ knowledge level;
- a check of the students’ breeding level;
- introduction and use of advanced pedagogical experience;
- an ability to improve control inside a school;
- taking measures on suggestions realization of control inside a school;
- correspondence inspection of the used means, forms, methods in educational-pedagogical process to the subjects specificity;
- correspondence inspection of the used means, forms, methods in educational-pedagogical process to the age norms of students;
- an ability to write clear, compact, convincing and conclusive acts or references on the quality of subjects teaching taking into account the results of control.

An ability to fulfill psychological-pedagogical analysis of different types of lessons and extracurricular activities includes:
- a director’s knowledge of analysis technologies of different types of lessons;
- an ability of a director to teach the methods of self-analysis, self-rating of a held lesson (the degree of the plan realization, logicality of a teacher’s actions which are aimed at the goals achievement);
- an ability to formulate competently the conclusion on a reason elimination of a negative effect;
- an ability to formulate effectively the pedagogical analysis, as a teacher’s work improvement mostly is determined by concreteness of suggested activities. The program of suggested activities realization should be in every analysis and should have a due date. Recommendations and conclusions formulated by a director provide self-education development taking into account a teacher’s potentialities;
- an ability to alternate different means and methods of teaching depending on students’ age peculiarities and content of the subjects (the use of upbringing and educational opportunities of a subject by a teacher for different age groups; the use of independent work system, determination of the attitude to the students, determination of a teacher’s mastery, possession of psychological-pedagogical tact).

An ability to prepare the teachers for attestation is seen in a purposeful, system work of administration with the teachers on training for a subject examination, examination to reveal the knowledge of modern information technologies, for presentation of a practical activity results.

Thus a director’s management culture is revealed in desire to show real opportunities for a teacher’s personal qualities and his professional level co-ordination with innovative demands, as the important components of an educational process at school are teacher’s educational, spiritual-moral and cultural levels, his or her pedagogical mastery.

An optimal school functioning depends on many factors but the main is a teacher’s professional mastery. Thus a school is a difficult pedagogical system.

A teacher develops upbringing and education methods of students, gradually discovers the secrets of professional mastery. Using different ways and methods a teacher involves the students into different kinds of work (including a creative work) and forms their behavior, knowledge, skills and abilities. But it was noted that the same methods used by different teachers can provide different results. Moreover, some teachers can’t achieve success even using approved methods.

Not only methods, ways and tasks influence students’ desire to study. A teacher’s success is mainly determined by his or her character, personality, interrelation with students, mastery that is not always seen in pedagogical activity. Experienced teachers pay attention to the students’ reaction which their actions can cause, discover their abilities and then systematically correct their own work. Under the positive influence of a teacher a student experiences joy of cognition, feels that he
can study better. Such teachers use the teaching and upbringing methods as the means of a teacher’s personal qualities realization, a conducting material of moral values from a teacher to a student. A teacher can give to a student only what he has himself, that is why pedagogical mastery should be considered as a range of definite qualities of a teacher’s personality which are conditioned by a high level of his or her psychological-pedagogical readiness, by an ability to solve pedagogical problems of education, upbringing and development of schoolchildren.

Solving a pedagogical problem it is necessary to take into consideration real conditions in educational group and in a difficult system of students’ relations, to choose the ways of influence on the students in order to transfer them from one state into another one. These actions form the model of a problem situation. As any other problem it has a final result of an activity (its aim), a situation in which the problem is solved (a condition) and the criteria to check the degree of its solution. A teacher often has to solve pedagogical problems in not planned and not standard (unforeseen) situations. An experienced teacher can make a decision on effective actions in unforeseen conditions. A pedagogical problem can be considered as a teacher’s ideas about how to act in non-standard situations. The success of a pedagogical problem solution is checked by means of several main criteria:

- the transfer of a student into a given state;
- the choice of an optimal action in a definite situation, the choice of the most effective way of influence on a student;
- understanding of a fact that a pedagogical problem doesn’t exist when it is already solved.

An effective solution of pedagogical problems depends on the level of a teacher’s pedagogical skills development.

In psychology individual psychological personality features, which allow to solve successfully one or more kinds of activity, are called abilities. A teacher’s ability to prognose a student’s behavior in conditions of a constant information stream, an ability to analyze it, to see the ways and variants of the students’ educational level improvement determine pedagogical abilities. Experienced teachers characterize the following personality features:

- a competence (the knowledge of the activity subject). A teacher should easily handle information, see connection in a difficult structure of evidences, stimulate students to master knowledge and easily involve students into the subject;
- to increase and improve constantly own knowledge level (aspiration for self-education), create (it is connected with a teacher’s intellectual curiosity level). Emotional – volitional influence of a teacher increases if labor is inspiring and a loved work makes a person happy. The level of general erudition, abilities, intellect increases if a teacher has a desire to enlarge his or her knowledge level.

It is known that abilities are formed on the basis of inclinations, are developed in the process of activity and in case of inspiring work are revealed in a teacher’s mastery. A talent is, first of all, determined by a high level of diligence. “… Labor, labor of mind and spirit is the base of a teacher’s creative work and inspiration”, - said Y.L. Leont’ev.

With the mentioned above qualities of a teacher is connected the love for children. A teacher shouldn’t hastily judge and negatively think of his student. With any student, bright or not, should be used the principle of pedagogical optimism – everything is possible, a student can and will become better.

A teacher who divides students into “perspective” and “silly”, “ordinary” and “difficult” may not see somebody’s life, interesting personality. But love should be combined with reasonable exactingness.

Pedagogical exactingness helps to discipline a student, stimulates positive actions and brakes negative ones, provides student’s self-control. “Without a sincere, open, convincing and a firm demand we can’t start upbringing…” – said A.S. Makarenko, characterizing the ways of children's group organization. Students themselves don’t like undemanding teachers may be because in his or her exactingness they see a desire to teach them socially valuable orientations, feel interest in their future. And in softness and consideration they see unjustified “prepayments” or a
desire to be kind but not objective. We speak not about masterfulness but about a reasonable pedagogical exactingness.

Also pedagogics of cooperation can’t be opposed to pedagogics of exactingness.

There should be sense of proportion in demands. Sometimes using irritable and impatient tone a teacher demands the fulfillment of a difficult task. That is why some students lose confidence in own abilities and knowledge. It is very important to define the measure of exactingness, to put oneself into a student’s place.

**Pedagogical tact.** As A.S. Makarenko said that a teacher’s demands are accepted by the students if a teacher respects them (I demand because I respect and the more I demand the more I respect) and if the teacher is attentive and empathetic. In this case careful treatment of a child’s personality can’t be showed directly.

Pedagogical tact is revealed in ability of a teacher to form successful correlation which means not only to avoid conflicts with a child but, if it is necessary, to create a conflict and to solve a problem.

A teacher should be an example in everything (in attitude to children, to work, to know measure in demands, an ability to help and respect).

With a teacher’s personal example is connected a problem of communication in any group. There are cases when a teacher has a definite opinion of a student and he sticks to this opinion. It is harmful for a student and a teaching process:

“A good” student is always given “prepayments” and “a bad” student is always criticized. A teacher should always be objective, reserved, kind, tactful, tolerant, should be able to control his activity and behavior while communicating with the students.

Children are very sensitive to evaluation of their actions by grown-ups. Even in elementary school they can define whether a teacher is objective or not. A teacher should be sincere in attitude, calm, reasonable in demands.

The important qualities that a teacher should possess are the following: an emotional-volitional impact on a student, quick wit, keenness of observation, an ability to use voice correctly and an ability to foresee the consequences of own actions.

Mentioned above teacher’s qualities are realized in unity. They are revealed in the ability to form friendly relationships between the students, at work and in everyday life, they demand the knowledge of a child’s soul, an ability to communicate with students taking into account their interests and desire. It is proved that if a teacher’s main aim is only to hold a lesson and to “fulfill” curriculum, not taking into consideration the students’ state, his work is not effective. There is no connection between a teacher and the students.

The formation of mentioned above personality qualities of a teacher-master has a long-term character. It is directly connected with the management culture, directors’ personal characters and their systematic, purposeful work with the teachers.

The following personality qualities of an educational establishment director can be defined:
- generalcultural and professional competence – intellect, knowledge, managerial abilities, polymathy and other qualities.
- director’s communication with the teachers – tact, even temper, politeness, sociability, modesty, charm, sincerity, sense of humor, quick wit and other qualities.
- positive communication of a director with the students and their parents – respect, kindness, care, justice, tenderness, understanding, attentiveness, tolerance and other qualities.
- outer, nonspecific sides of activity – persistence, punctuality, efficiency, strictness, exactingness, responsibility, discipline, diligence, honesty and other qualities.

The management activity of a director can be presented as a multifactorial process where there are many ways to master it. These ways can be divided into two components:
- **operational** – characterize the process of communication itself, how, with the help of which means and methods the contact with people is achieved;
- **personal** - sort with a person himself as a personality.
These groups depend on each other and are connected.

A director should know the tactics and strategy of persuasion well. Argumentation and persuasion present the main stage of a dialogue which is revealed in opposition of opinions, the peculiarities of personality qualities of a director and a teacher are determined.

There are the following stages of communication: information transference – beginning, taking decisions, objections neutralization, argumentation and final.

In the process of argumentation the aims are the following: critical check of the thesis and facts given by the opponents; the change of the opponent’s opinion; objections neutralization if they appeared after the dialogue.

A dialogue at the stage of argumentation can follow in two directions: convincing, when it is necessary to prove something and substantiate and counter – argumentation in case of the opponent’s statements disproof.

Situation can change during the dialogue that is why there is no standard method and the use of one method doesn’t mean success. There is a technique of argumentation and tactics that is a method of selection, in a concrete case, psychologically effective methods, taking into account the psychological peculiarities of an opponent’s personality and the situation.

The methods of attraction formation are also very important for a director – an ability to create a positive impression (“personal name”, “compliment”, “personal awareness” and others).

The role of a school director in educational-pedagogical process management is great as he very often has an experience of pedagogical work, positive references, management culture and an arsenal of managerial abilities.

The level of a director’s management culture is revealed during the work with a teaching staff on the level of their pedagogical mastery and pedagogical competence improvement, during functional duties fulfillment (in control inside a school organization, methodical work, inspection, teachers training for attestation and a good educational-material base formation).

The system of a director’s work with a teaching staff is an integral, consistent, purposeful, continuous work based on science, advanced pedagogical experience which are directed at a teacher’s qualification and professional mastery improvement, at creative potential development of a pedagogical collective in general, at the effectiveness and quality improvement of an educational-pedagogical process, students’ educational level increase.

A school director’s work with a teaching staff as an integral system connected with people activity includes several interconnected components: inspection; control; methodical work; self-education. Each component of a system includes several interconnected elements: aims, objectives, content, forms, methods, means and results. An important role in this system play the members of an educational process – school directors and teachers. If they interact in terms of a system approach as a unity the work with a teaching staff is effective.

As the results of the research work show the effectiveness of a school director’s work with the teachers on their professional competence improvement is achieved only in case of taking into consideration mentioned above conditions and succession in realization of the defined components, such as control inside a school; methodical work at school; inspection; self-education which is considered as a general form of suggestions and recommendations realization in case of control inside a school, methodical work and inspection.

Bibliography

STUDENTS’ MILITARY – APPLIED PHYSICAL TRAINING FORMATION: 
THE PROBLEMS AND THE WAYS OF SOLUTION

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Keywords: physical culture, military-applied physical training, modeling.

Annotation. The article defines the problems of specialized military-applied physical training realization and the ways of their solution from the position of the students' military-applied physical readiness formation, which are the main mobilization reserve of armed forces of the country.

The practice of modern military science testifies to the fact that one of the main components of high level of the army military efficiency is physical readiness of military men. Objective demands to it don’t decrease with the progress of military technique but only increase. Thus the role of specialized military-applied physical training grows.

The dependence between the physical readiness of the military men and battle readiness is a fact. Its development concerning new conditions allows to create necessary premises of effective military service, to increase the level of an organism functional resistance to stress factors of military situation. That is why it is necessary to pay great attention to military-applied physical training of the personnel.

Recent scientific research works, as well as the experience of local wars and tactical exercises, determined new sides of military-applied physical training importance for battlecraft improvement of military men. A high level of readiness of the military men influences greatly such indices as battle coherence of the units and elements, resistance to negative factors of combat activity influence and others. An ability of an army to solve battle missions successfully depends on the level of military skills, coherence of the elements and individual training of the military men.

Unstable state of the military-political situation between the states, military coalitions demands system and constant strengthening of the country’s defensive capacity, national interests defense, development and modernization of the whole management structure and material – technical base of the Russian Armed Forces.

In this connection the Strategy of national security till 2020 and a new Military doctrine were adopted in Russia. An important aim of the Military doctrine is importance increase of youth preparation for serving in Russian army. In modern conditions when the problem of personnel professionalization of the Russian Federation Armed Forces is being solved, since 2008 the service length in the army was shortened to one year by the decree of the President of the Russian Federation and it demands quick reconstruction of the pre call-up preparation system of youth (V.A. Korytkov, N.I. Garipov, V.V. Ponomarev, V.A. Mezentsev, T.G. Arutynyan, A.I. Kravchenko, V.I. Dobren’kov and others). The existing content of the students training to military service doesn’t
correspond to modern demands, has not systematic and partial character and is not able to provide fully the Russian Federation Armed Forces with trained conscript servicemen with higher education (A.S. Timokhovich, O.S. Kalyadin, N.N. Garipov, M.A. Kirpichev and others). Such a negative state is connected, first of all, with the fact that many higher educational establishments don’t have the departments of military training and it had a negative influence on general readiness of the graduates to full-fledged service in the Armed Forces of the country (V.A. Korytkov, V.V. Ponomarev, N.N. Garipov and others) [11].

In this connection the president of the Russian Federation Vladimir Putin said about the necessity to change the system of military training of the students in the presidential address to Federal Assembly on December, 13 in 2013: “It is necessary to let the students go through this training and get a military speciality. In particular, we speak about important military-registration specialities. At the same time not calling them up to the Armed Forces”.

Solving this problem higher military governing body of the country offered to organize two-year training course at the military department or in a special interuniversity military training centre since September, 1 in 2014. After this it is necessary to attend three-month military gathering and get a military card with the note that an obligatory military service is fulfilled.

Thus there is a necessity to search for and create the alternative pedagogical conditions of students’ preparation to military service where there are no military departments. Taking into account the fact that a good physical fitness of a military man is one of the main priorities which should be observed in any army, an urgent alternative to this transitional time period is the necessity to reconsider the students’ training for military service while studying the subject “Physical culture” till the state doesn’t present more effective training system of call-up age students (A.S. Timokhovich, V.A. Korytkov, V.V. Kuzin, P.A. Vinogradov, S.I. Gus’kov and others) [11]. Thereunder important becomes the training for the service in the Armed Forces of students from higher educational establishments where there are no military training departments. This is urgent as in 80 % of higher educational establishments in Russia there is no system of students’ military training and it has a negative influence on the quality of readiness of the youth to successful service in the Armed Forces of Russia and military efficiency of the country.

In spite of the fact that many questions connected with youth training for service in the Armed Forces are widely discussed in science world, this theme is very urgent and directed at creation of alternative military-applied forms of students’ training who study in higher educational establishments without military departments for service in the army. It is connected, first of all, with new conditions adoption. Military training will be realized in the process of a special training fulfillment and three-month military gatherings.

Thus we can state a scientific problem on actualization and search for alternative forms and technologies of students’ training for the service in the army in the process of physical upbringing.

The main form of physical upbringing in a higher educational establishment is professional-applied physical training. Professional-applied physical training is one of the kinds of a specialized process of physical upbringing directed at upbringing of physical and connected with it psychic qualities of personality and the formation of motor skills and abilities, connected with definite peculiarities of labor and military activity [6].

The practice of modern military science testifies to the fact that one of the main components of high level of the army military efficiency is physical readiness of a military man [6]. Objective demands to it don’t decrease with the progress of military technique but only increase. With the increased tempo of technical rearmament the army is in great demand of people who are able to master difficult weapons and military equipment quickly and use it effectively in battle conditions which demand high level of physical and spiritual forces mobilization.

As a result of great increase of the army mobility, increase of the role of such branches of the armed forces as strategic, aviation, air-landing, tank, new tactical and strategical conditions of military operations (local zones of expected military operations and others), undoubtedly, grows the role of a specialized military-applied physical training. Its development, concerning the new
conditions, allows to create necessary preconditions of an effective military service, to teach the military man necessary motor skills and abilities, to increase the degree of an organism functional resistance to stress factors of military situation, to bring up endurance and other physical qualities important in military operations. That is why great attention is paid to physical culture in military men training and in professional-applied physical training [1, 4, 7, 8, 12, 13].

The analysis of physical upbringing systems of the students and cadets from the military institutions allows to state that these systems have one base but at the same time have differences in target orientation and we can’t but mention the renewal of the system “Ready to labor and defense”. It will be a good base for solution of the stated problem of students’ military training.

Taking into consideration mentioned above facts and the tendencies in the system of higher professional education development, in particular its transfer to the standards of the third generation, which provide definite competencies development.

Analyzing from the point of view of the stated problem, the aims and objectives which are necessary to achieve and solve can be combined into one – students’ military-applied physical training formation.

In this connection we can define a new problem, in spite of the theoretical substantiation, this aspect wasn’t studied in new conditions in practice of professional-applied physical culture realization. Correspondingly, the effectiveness of the approaches which are widely used in practice of students’ physical upbringing in realization of the questions of military-applied physical readiness formation is not proved and this is the main contradiction.

The need for the determined contradiction solution define the questions which consist in the necessity to raise the effectiveness of teaching on the subject “Physical culture” and uncertainty regarding the ways and means of its achievement. Effective is the teaching, in our point of view, where the content is urgent for students’ military-applied physical readiness formation, which has informal and structural flexibility and provides individualization of education.

The appearance of professional education system in an innovative strategy leads to new approaches to educational process construction application, to application of modern forms and methods of teaching. One of the reserves of teaching effectiveness increase is content development.

The process of education diversification provides the creation of new pedagogical models of education. The fulfilled analysis of the literature allows to conclude that modeling today is one of the most perspective methods of pedagogical research works.

In the works of M.V. Klarin [2, 3] there is a definition “the model of teaching”. The model of teaching, in the instrumental meaning, the author understands as the scheme or plan of a teacher’s actions during the education process, the base of which forms predominant activity of students organized and structured by a teacher.

The aim of the pedagogical modeling is revealing the opportunities to develop the process of education and search for the reserves of its effectiveness increase [9].

According to the definition of V.S Bezrukova pedagogical modeling is the aims creation (a general idea), pedagogical systems creation, the processes or situations and the main ways of their achievement [9].

The practical value of a model in any pedagogical research is determined by its adequacy to the studied sides of the modeling object and by the fact how correct the main principles of modeling are considered at the stages of model creation: visualization, distinctness and objectivity [5]. The value of the model is also determined by the realization of the main functions: analytic description, prognostication, standard, norm, caution of the mistakes [10].

The analysis of the works, concerning the problems of modeling, allows to define five main models built taking into account the individual abilities of the students [9].

1. A free model. With the help of a teacher the student himself determines “trajectory”, intensity and duration of the lessons, chooses himself the forms of study.
2. Personality model. The main aim is a higher level of personal growth achievement by a student, his cognitive, volitional, moral abilities development. Teaching is on a high level of difficulty. A compulsory condition is trust, multialternativeness of the process of education.

3. A developmental model. The main thing is educational activity reconstruction on the level of the content and the form of its organization. The aim is psychological qualities development: theoretical thinking, reflexion, independence in professional problems solution.

4. An activating model. The aim is the level of cognitive activity increase of the students on the basis of problem situations inclusion with their further complication.

5. A forming model. The main aim is a purposeful control of the process of knowledge and skills mastering by means of influence on mental development of a student. The kinds of this model are the program, module and algorithmic teaching.

The effectiveness of the teaching model depends mainly on the quality of the realized programs of education, on the effectiveness of the chosen forms and methods of teaching.

The differentiated model of an educational program of the system of a specialized military-applied physical training can be realized according to the following algorithm:

- at the first stage, on the basis of the Federal state educational standard, branch order and taking into account the qualification characteristics (competences) the aims of the pedagogical process are developed and concretized, the main ideas (principles) are defined. Following these principles will help to achieve the aim of teaching by the students who go through the military training;

- at the second stage the structural model of the differentiated modular educational program of a specialized military-applied physical training is created;

- at the third stage the selection and structuring of the program components is held;

- at the fourth and the following stages the modular program is realized, the results of teaching are diagnosticated, correction is held on the basis of the diagnostics results.

Thus we come to the conclusion that a pedagogical modeling in pedagogical practice is actively and successfully used and the use of the models in education nowadays is one of the perspective directions of pedagogical research works. Creation, development and study of the models in education allow to prognose the most optimal way of the educational process organization, to build the rational structure of the content, to choose the most effective forms and methods of teaching. Timely correction of the curriculum allows to organize an educational process with less mistakes and omissions.

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QUALIFIED SPRINTERS’ TRAINING PROCESS ORGANIZATION AND ORIENTATION IN ORIENTEERING

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Keywords: orienteering by running, sport training, a sprint distance, a computer technology, students, a training process.

Annotation. The article deals with the problems of sport training of sportsmen-orienters who specialize in sprint distances. A modern methodology of qualified oriers’ training process formation is suggested. The results of a training and competitive activity are described.

Research methods: scientific-methodical literature analysis, pedagogical observation, pedagogical experiment, pedagogical test, the methods of mathematical statistics.

Material. The peculiarities of qualified sprinters’ training process in orienteering are showed. The program of sport training on sprint distances is developed for qualified sportsmen-orienters (the stage of sportsmanship improvement)in which a training process effectiveness increase is achieved by means of complex orientation, cyclical load increase in the zones of high and maximum intensity, by means of computer technologies application in technical training.

Research results. The test of physical and technical readiness was held, the study of physical development level and the orienters’ functional state, control competitions.

Conclusion. Scientific-methodical literature analysis shows the need for new approaches to the training process content of the orienteer specializing in sprint distances.

The created program of the training process of the sportsmen from the experimental group turned out to be more effective, as in all suggested tests we received a positive indices increase. The competitions in control exercises allowed to see positive reliable differences between the sportsmen from the control group (CG) and the experimental group (EG) which proves the effectiveness increase of a competitive activity in the EG. The complex orientation of speed, speed-power and power qualities development in the training process of qualified sprinters in orienteering by running is the main factor of sport training effectiveness on the stage of sportsmanship improvement.

Introduction. International orienteering federation (IOF) during recent 15 years has been trying to find new forms of competitions in order to popularize this kind of sport. In 2000 on the IOF congress, in Austria, a Convention was adopted which declared that orienteering should be brought to a new modern level, should become interesting for the sportsmen themselves, for the audience, for sponsors and partners with further inclusion of this kind of sport into the Olympic Games [4]. As a result, in 2001 into the program of the World Championship, in Finland, a new competitive discipline – “sprint” was introduced, the aim of which is to orient on high speed in parks and streets. The route construction on this distance is fulfilled in a way when the winner’s time is limited by a time interval of 12-15 minutes [16]. The main aim of the orier is to choose an optimal route from one control point to another and its skillful realization on high speed. The competitive running intensity on a sprint distance corresponds to an anaerobic threshold or higher. Endurance demonstration during the competitions on sprint distances happens in the zone of strong power, where maximum demands are made to respiratory and cardiovascular systems of an organism and it should be reflected in the content of sport training [2].
When sprint distances appeared in competitive programs an orienteering was gradually transferred to city parks from the woods and it led to the change of sport maps [5]. There appeared additional symbols, marks and cartographic images to depict the peculiarities of park zones and city landscapes and it demanded from the sportsmen an innovative approach to a training process formation [4].

Nowadays the competitions in orienteering are held on world and European level on classical and sprint distances. In these terms in Russia appeared the problem of qualified sportsmen “sprinters” and “distance runners” training [6].

This problem is not studied enough in scientific-methodical literature on qualified orienters training who specialize in sprint distances. Moreover the methodology of training orienters by running on classical distances differs from the methodology of sprint distances training and there is no enough educational-methodical literature and scientific publications on “orienteers-sprinters” training. All this is evidence of the necessity to search for new approaches in a training process organization and orientation of qualified sportsmen-orienters [1,3,7].

**The aim of the research** is effectiveness increase of a training process of qualified sportsmen-sprinters in orienteering by running.

**The objectives of the research:**
- to reveal the peculiarities of a training-competitive activity of qualified sportsmen-orientees specializing in sprint distances;
- to substantiate the content and orientation of a training process on sprint distances of qualified sportsmen-orienters (the stage of sportsmanship improvement).

**Research methods:** scientific-methodical literature analysis, pedagogical observation, pedagogical experiment, pedagogical test (physical and technical readiness test, the level of physical development and functional state study, control competitions), the methods of mathematical statistics.

**The research organization.** Our research was held on the base of “Ulyanovsk State Pedagogical University” since September 2011 till September 2013. The students from higher educational establishments and Ulyanovsk region took part in the pedagogical experiment. 20 people had sport qualification of the 1st category, candidate master and master. The lessons were held in Sport club of the University. The methodology of lessons in the control group (CG) was based on the main theses of a program for sport schools for children and youth, for sport schools for children and youth of the Olympic reserve and the associations of additional education on orienteering on the stage of sportsmanship improvement [8]. The sportsmen from the experimental group (EG) trained according to formed by us program of sport training on sprint distances of qualified sportsmen-orienters (the stage of sportsmanship improvement).

During the first year (since September 2011 till September 2012) of the pedagogical experiment a general number of the training lessons in the CG and the EG was equal (370 lessons) and the general volume of cyclical load of a yearly training macrocycle in the CG – 4498 kilometers, in the EG – 4794 kilometers. The training load in the CG and the EG according to the zones of intensity from a general volume of a cyclical work had the differences: in the zone of low intensity the sportsmen from the CG had 30,8%, from the EG - 33,8%; in the zone of medium intensity the sportsmen from the CG had 43,5%, from the EG - 35,2%; in the zone of high intensity the sportsmen from the CG had 19,0%, from the EG -25,0%; in the zone of maximum intensity the sportsmen from the CG had 4,7%, from the EG -6,0%.

During the second macrocycle (since September 2012 till September 2013) a general number of the training lessons in the CG and the EG was equal (408 lessons) and the general volume of cyclical load in the CG increased to 5103 kilometers (13,45% higher in comparison with the first year), in the EG to 5009 kilometers (4,48% higher). During this period the training load in the CG and the EG according to the zones of intensity from a general volume of a cyclical work also had the differences: in the zone of low intensity the sportsmen from the CG had 31,3%, from
the EG - 31,1%; in the zone of medium intensity the sportsmen from the CG had 44,5%, from the EG - 34,2%; in the zone of high intensity the sportsmen from the CG had 18,8%, from the EG - 27,6%; in the zone of maximum intensity the sportsmen from the CG had 5,4%, from the EG - 7,1%.

It should be noted that the main advantage of suggested by us program is in ratio of the training loads in different zones of intensity. The ratio of high and maximum intensity loads of the “sprinters” is higher than the “distance runners” have and it allows us to increase the indices of МПК and to increase the level of an anaerobic threshold of the sportsmen from the EG which can be seen in the dynamics of physical development and the sportsmen’s functional state.

In our opinion nowadays the success of a competitive activity in orienteering by running on sprint distances depends on the following qualities development: general and speed-power endurance, strength, quickness, dexterity and technical-tactical actions of the sportsmen. In developed by us program great attention is paid to development of mentioned above qualities.

In order to develop general endurance the means of cyclical character were used (running, skiing, swimming, cycling, rowing and others) with low and medium intensity and long-term training with orientation (running along the defined route – “a thread”, long distances).

In order to develop speed-power endurance recurrence of different length distances was used with high and maximum intensity (400 meters – 3000 meters), using repeated, alternating, interval, control and rapid methods of training. The distances were run in different conditions of soil solidity (an asphalt, a wood path, soft soil, sand, athletic path). Also the speeding-ups of different length were used (50 meters -150 meters).

Speed-power training on the stage of sportsmanship improvement is directed at quickness of movements and muscles strength development, it determines a complex orientation (speed, speed-power, power) of a training process of qualified sprinters in orienteering by running.

On this stage an important thing is that speed-power qualities development has to be realized using speed-power exercises where a runner’s power qualities achieve their maximum by means of speed increase of muscles contraction. The main exercises are the following: running from start, shuttle running, running with different poundage, downhill and up-hill running, different jumps on 30-60 meters distances, acrobatics and gymnastic exercises on the apparatuses, exercises and running with poundage of light-weight (2-4 kilograms), weight-lifting exercises with a weight (20-30 kilograms).

In order to develop dexterity we used outdoor and sport games in the training program and also playing tasks including the elements of orienteering.

In order to improve technical-tactical training level we used innovative means and methodical approaches. In order to develop speed orienteering of qualified sportsmen-orienters we used short sprint distances, different labyrinths in a room, in park zones. To increase the speed of sport maps reading and studying the area of different landscape zones the lessons using computer technologies were included into the training process (simulator - training apparatus of orienteering “Catching Features”). But in spite of the intensity and content of the used training methods, the percentage of sportsmen’s work with a map in the CG and the EG was equal.

The results and their discussion. During the pedagogical experiment in September 2011 an initial test was held, in September 2012 intermediate test was held and September 2013 the final test was held. To define the dynamics of physical readiness of the sportsmen-orienters from the CG and the EG 6 control tests were held (table 1).
### Table 1

**Physical readiness dynamics of the pedagogical experiment participants**

<table>
<thead>
<tr>
<th>№</th>
<th>Tests</th>
<th>CG (n=10)</th>
<th>EG (n=10)</th>
<th>t calculating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The stages of the test</td>
<td>Result</td>
<td>An absolute increase</td>
<td>Increase in %</td>
</tr>
<tr>
<td>1</td>
<td>100 meters running (seconds)</td>
<td>I</td>
<td>13,45±0,05</td>
<td>0,22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>13,35±0,05</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>13,23±0,05</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cooper test (meters)</td>
<td>I</td>
<td>3311,0±31,73</td>
<td>139,0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>3399,0±27,01</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>3450,0±22,23</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>800 meters running (seconds)</td>
<td>I</td>
<td>139,10±1,39</td>
<td>4,00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>136,70±1,26</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>135,10±0,78</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Quinary standing broad jump (centimeters)</td>
<td>I</td>
<td>1204,90±8,04</td>
<td>23,00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>1214,50±7,94</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>1227,90±7,42</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Shuttle running 10x10 meters with an electronic mark (seconds)</td>
<td>I</td>
<td>33,43±0,15</td>
<td>0,44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>33,21±0,14</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>32,99±0,13</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>A complex exercise to increase power (number)</td>
<td>I</td>
<td>54,70±0,53</td>
<td>7,45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>57,50±0,42</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>59,10±0,50</td>
<td></td>
</tr>
</tbody>
</table>

Note: I – initial test, II – intermediate test, III – final test  
* - authentic if p≤0,05, t-2,101; ** - authentic if p≤0,01, t-2,878 (difference in indices between the CG and the EG)
**Technical readiness dynamics of the pedagogical experiment participants**

<table>
<thead>
<tr>
<th>№</th>
<th>Tests</th>
<th>CG (n=10)</th>
<th>EG (n=10)</th>
<th>t calculating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The stages of the test (Результат)</td>
<td>An absolute increase</td>
<td>Increase in %</td>
<td>Result</td>
</tr>
<tr>
<td>1</td>
<td>Reading rate of a sport map (a number of correct answers)</td>
<td>I</td>
<td>178,60±1,35</td>
<td>20,80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>188,90±1,55</td>
<td>10,44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>199,40±1,71</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Time needed for orienteering taking consideration taking KPI (seconds/kilometer s)</td>
<td>I</td>
<td>50,40±0,79</td>
<td>8,42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>46,52±0,96</td>
<td>20,05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>41,98±0,55</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Individual technical coefficient for a sprint distance (conventional units)</td>
<td>I</td>
<td>1,223±0,0041</td>
<td>0,019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>1,219±0,0050</td>
<td>1,57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>1,204±0,0041</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Individual technical coefficient for a classical distance (conventional units)</td>
<td>I</td>
<td>1,179±0,0072</td>
<td>0,026</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
<td>1,166±0,0063</td>
<td>2,25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III</td>
<td>1,153±0,0047</td>
<td></td>
</tr>
</tbody>
</table>

*Note: I – initial test, II – intermediate test, III – final test*  
* - authentic if $p≤0,05$, $t$-2,101; ** - authentic if $p≤0,01$, $t$-2,878 (difference in indices between the CG and the EG)*

To check the technical readiness dynamics (table 2) we used the reading rate test of a sport map and the technique of orienteering [9].

The received results of physical and technical readiness show that the suggested innovative means and methods of the developed training lessons program had a greater influence on physical
qualities development and technical-tactical actions improvement of the sportsmen-orienters from the EG.

The most essential indices increase in the EG was in the following tests of physical readiness: a complex exercise to increase power – to 8.34%, 800 meters running – to 5.63%, Cooper test – to 6.40%. The sportsmen from the CG have a good increase of the results in tests: a complex exercise to increase power (9.06%) and Cooper test (4.03%).

According to the test results of technical readiness in the EG we revealed that a maximum indices increase was in the test in reading rate of sport map (12.94%), time needed for orienteering (taking into consideration taking КП) decreased to 29.43%, an individual technical coefficient (ITC) on sprint distances improved to 3.71%, and on classical distances to 2.28%. The sportsmen from the CG have a good increase of the results in tests: a complex exercise to increase power (9.06%), Cooper test (4.03%).

To define a physical development and functional state of the sportsmen we used the following methods of indices: Pignet index, life index, Harvard step-test index. To define the indices of maximum oxygen consumption we used Dobeln formula after fulfillment of a unitary load of a submaximum power at bicycle ergometer in conditions of medical-physical dispensary. To evaluate the training level of the sportsmen-orienters we evaluated heart rate on the level of an anaerobic threshold on the running track of an athletic stadium by means of Konkoni test. The dynamics of physical development and the sportsmen’s functional state is presented in table 3.

At the initial stage of the pedagogical experiment the indices of Pignet index were identical in all groups and the sportsmen were characterized by a high level of physical development. Then these indices changed slightly and it allowed to judge the increase of a muscle bulk.

<table>
<thead>
<tr>
<th>Indices</th>
<th>Test</th>
<th>CG</th>
<th>EG</th>
<th>The coefficient of reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M ± m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pignet index</td>
<td>исходное</td>
<td>13.96±0.17</td>
<td>14.07±0.14</td>
<td>0.494</td>
</tr>
<tr>
<td>(conventional units)</td>
<td>промежуточное</td>
<td>13.64±0.16</td>
<td>13.75±0.18</td>
<td>0.454</td>
</tr>
<tr>
<td></td>
<td>итоговое</td>
<td>13.17±0.13</td>
<td>13.49±0.17</td>
<td>1.446</td>
</tr>
<tr>
<td>Life index</td>
<td>исходное</td>
<td>67.62±0.29</td>
<td>68.24±0.30</td>
<td>1.477</td>
</tr>
<tr>
<td>(ml./kilogram)</td>
<td>промежуточное</td>
<td>68.65±0.33</td>
<td>69.13±0.25</td>
<td>1.137</td>
</tr>
<tr>
<td></td>
<td>итоговое</td>
<td>69.49±0.30</td>
<td>70.29±0.21</td>
<td>2.177*</td>
</tr>
<tr>
<td>ИГСТ (conventional units)</td>
<td>исходное</td>
<td>93.94±0.38</td>
<td>93.80±0.43</td>
<td>0.242</td>
</tr>
<tr>
<td></td>
<td>промежуточное</td>
<td>96.16±0.49</td>
<td>97.32±0.43</td>
<td>1.772</td>
</tr>
<tr>
<td></td>
<td>итоговое</td>
<td>101.18±0.59</td>
<td>102.86±0.39</td>
<td>2.343*</td>
</tr>
<tr>
<td>МПК (ml./minutes/kilogram)</td>
<td>исходное</td>
<td>70.60±0.52</td>
<td>70.81±0.66</td>
<td>0.250</td>
</tr>
<tr>
<td></td>
<td>промежуточное</td>
<td>73.24±0.59</td>
<td>74.53±0.55</td>
<td>1.559</td>
</tr>
<tr>
<td></td>
<td>итоговое</td>
<td>75.24±0.57</td>
<td>76.63±0.49</td>
<td>1.839</td>
</tr>
<tr>
<td>Heart rate on the level</td>
<td>исходное</td>
<td>167.60±0.56</td>
<td>167.00±0.47</td>
<td>0.818</td>
</tr>
<tr>
<td>of АнП (rates/minutes)</td>
<td>промежуточное</td>
<td>168.80±0.46</td>
<td>168.90±0.43</td>
<td>0.157</td>
</tr>
<tr>
<td></td>
<td>итоговое</td>
<td>169.80±0.55</td>
<td>170.80±0.41</td>
<td>1.443</td>
</tr>
</tbody>
</table>

* – authentic if $p<0.05$ (t-table-2.101);
In case of groups comparison.

The received results of the life index which determined the functional abilities of the sportsmen’s respiratory system in case of initial state were almost equal in the CG and the EG, and during the final test the indices increased (the CG to 1.87 ml./ kilogram, the EG to 2.05 ml./
kilogram), the final results turned out to be statistically significant during comparison between two groups with \( p < 0.05 \).

As a complex evaluation of the sportsmen’s functional system we used Harvard step-test which allowed to judge the peculiarities of an organism recovery after a dosed physical load. So the best dynamics of physical working capacity during the pedagogical experiment had the sportsmen from the EG, it increased to 9.81% during the pedagogical experiment, in the CG increased to 7.16%, the differences between the groups are reliable if \( p < 0.05 \).

The highest increase of \( \text{МПК} \) during the pedagogical experiment was in the EG -7.60%, in the CG the \( \text{МПК} \) indices increased to 6.17%.

While comparing heart rate indices on the level of anaerobic threshold of the initial and the final tests it is seen that they increased in the CG to 1.30%, in the EG to 2.23%.

The received results in the CG and the EG show that not high positive changes are the results of a good physical development level and the functional state of the qualified sportsmen’s organisms.

To check the effectiveness of the created program competitions were held using control exercises where the sportsmen were tested on a sprint distance (3.4 kilometers – 18 КП) and classical distance (6.8 kilometers – 15 КП).

The results analysis of the control exercises of the initial test (September 2011) showed that the taken places by the sportsmen from the CG and the EG according to Mann-Whitney U test didn’t have differences: sprint distance of the sportsmen from the CG and the EG was \( U_{\text{emp}} = 48 > 0.05 \); classical distance was \( U_{\text{emp}} = 40 > 0.05 \).

At the end of the pedagogical experiment (September 2013) the sportsmen from the EG showed results improvement and took better places on sprint distances than the sportsmen from the CG (the CG and the EG \( U_{\text{emp}} = 25 < 0.05 \)). The competitions results analysis on classical distance in the final test revealed that the places taken by the sportsmen from the CG and the EG according to Mann-Whitney U test didn’t have differences (the CG and the EG \( U_{\text{emp}} = 48 > 0.05 \)).

**Conclusion.** Thus the received results allowed to conclude that the created training process program of the sportsmen’s from the EG turned out to be more effective as in all suggested tests we received a positive reliable indices increase. The competitions on control exercises allowed to see positive reliable differences between the sportsmen from the CG and the EG and it proves the effectiveness increase of the competitive activity of the sportsmen from the EG.

The methodology of the training lessons in the EG in the suggested experimental program differed from the CG by much time for speed-power qualities development. In the CG the trainings directed at speed and power improvement were only an additional means of sport training, in the EG “sprint trainings” were used as the main component of the training process.

The complex orientation of speed, speed-power and power qualities development in the training process of qualified sprinters in orienteering by running is the main factor of sport training effectiveness on the stage of sportsmanship improvement.

**Bibliography:**


MODELLING OF EDUCATIONAL PROCESS IN TRAINING GUIDES FOR ECOLOGICAL TOURS WITH ACTIVE FORMS OF TRAVEL

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Key words: professional training, guide, model of educational process.

Summary. The article represents the model of organizing educational process for training guides for ecological tours with active forms of travel on the basis of algorithm developed by the author of the didactic package.

Research methods. For purposes of verification of the suggested hypothesis, and the realization of tasks in the framework of this study, we used data analysis of the scientific and methodological literature, study and generalization of pedagogical experience, survey (questionnaire), content analysis of final qualifying works of students in InterRegioTour Educational Noncommercial Partnership, pedagogical experiment on creation of the system of special training «Guide for ecological tours with active forms of travel».

Materials. The present research is based on the author’s many years experience to provide ecological tours with active forms of travel which basis is the thorough repeated training of participants and guides of the hikes, which were organized by the Interregional Association of Independent Tour Operators of the Russian Far East (IAITO), InterRegioTour Educational Noncommercial Partnership, and the tourist companies of the city of Khabarovsk: Azimuth LLC, Welcome LLC, Spartak Tour LLC, Safari Luxe LLC.

Results. Based on conceptual theoretical and regulatory provisions we have developed the innovative model of educational process of didactic system for training guides of ecological tours with active forms of travel which has been introduced into educational process taking into account modern requirements of the higher school. Also account has been taken for safety in operation of the proposed system that provides conscious, responsive, creativity-developing cognitive activity of trainees, as competent actors of the educational process.

Conclusion. Adaptation of the general didactic principles to specific didactic situation in the process of training of the subjects included in the block of training guides for ecological tours with active forms of travel, with reference to specific didactic problems – improving the personality-developing self-educational creative activity of trainees in the courses and their professional training – has allowed to develop and introduce into teaching practice the didactic design, making the learning process more conscious, responsive, and efficient.

The current state of the tourism industry in Russia leads to the need for training specialists capable to plan and implement programs of tourist activities connected with active forms of travel, including organization of sporting trips and tours (V.I. Zholdak, V.A. Kvartalnov, 2001).

Topicality to this problem is given by a whole complex of the interrelated factors, including the promptly increasing popularity in the world of ecological routes with active forms of travel and significant environmental potential of the Far East.

The need for reorientation of vocational training towards the development of professional competencies is conditioned by many factors. This is, above all, the fact that during the training of specialists significant changes occur in the sphere of their future professional activities and often...
young professionals face emergency situations in their work. In this regard, the process of guide training should give him such knowledge, both theoretical and practical, that will be relevant for a long time and it will provide his successful work for many years.

«A guide is a professional showing tourists the attractions of an area or a city and ensuring safe travel along the route». (I.V.Zorin, V.A.Kvartalnov. The Tourism Terminology Dictionary, Moscow, - Sovetsky Sport, 1999. page 85).

We have developed a model of the structural organization of the educational process for training tour guides (pic. 1).

Pic. 1. Model of educational process for training guides.

**Regulatory requirements for the results of education. Educational standard**

**Teacher** (personal and professional competence)

**Life Safety**
all components of pedagogical system forms, methods and tools

**Content:**
Tour Guide Training Program

**Methods:** verbal, visual, practical
**Forms:** task-work, after-hour, self-study

**Creation** of necessary conditions for practical training

**Purpose of training**
Formation of personal and professional competence of future Guide specialist

**Innovative trends in the educational process**
"Tour Guide" (theoretical and practical aspect)

**Management, monitoring of educational process**

**Optimization Methods**
(systematic approach to training)

**Trainees**
motivation for training

**Accounting for social order of tourism organizations**

**Tools:** exercise, healing forces of nature

**Productive technology**
(balance of theory and practice in educational process)

**Interaction**
Orderly interaction between the teacher and the trainee, aimed at achieving the goal, and, in the end, the final result

**Training Results**
Guide Diploma
Ability to work as a guide of ecological routes with active forms of travel
The developed model of educational process for training guides of ecological routes allows
the teachers and trainees as full subjects of educational process, taking into account didactic
situation of personal features and the professional purposes of training, to design not only various
models of educational process and levels of knowledge of the teaching material, but also the process
of training.

In our research, we relied on the author of the classical structure of pedagogical system
V.P.Bespalko.

The model of educational process of didactic system for training guides has been introduced
into educational process to meet modern standards of higher education. Taken into account was
safety of functioning of the suggested system which provides conscious, operated, creatively
developing informative activity of the trainees, as competent subjects of the educational process.

Terms of educational technology lie in the fact that the purposes relate to the results,
forming a vicious cycle. Completeness of coincidence of the purpose with results serves as reliable
criterion of efficiency of the pedagogical process. Management, combining all the components of
the pedagogical system is also a relatively independent component, as it has its own purposes and
structure. It is based on monitoring. The backbone component of the pedagogical system is often
referred to the technology of educational process. With this approach, emphasizes I.P. Podlasy,
pedagogical system is a sustainable organizational and technological complex, ensuring

Besides, the methodological basis of optimization is the systematic approach. Optimality
criterions are the indicator on which basis the estimation of possible variants of the process
development is made, their comparison and choice of the best one.

In our model we have tried to consider innovative trends in educational process, in the
section "Life Safety» which provides safety of all components of the pedagogical system and is
crucial. In training such a specialist as a Guide, much time is dedicated to practicing complex
actions in extreme conditions of the environment, modeling dangers and practicing actions in them.
All of the information received by the trainees in the course of training is focused and implemented
in concrete actions in accordance with the methods developed by us. The primary goal is to provide
the trainees with the skills so as to avoid risks and to exclude all cases of non-observance of
accident control measures during tourist activities.

Psychologists say that no model can claim to universality [8,10,11]. In the process of
object’s research, the model structure can be modified, some items may be removed or, conversely,
the new may be added. Logic study of the problem requires the creation of such a structure of the
model for special training, where the parties being in a state of interdependence, mutual change and
mutual enrichment, ensure competitiveness of the specialist on tourism market.

The essence of ecological a guide personality professional self-development routes in
process of training is that training process is focused on actual educational requirements of the
personality, in his professional self-development, especially considering the specifics of this
profession, requiring responsibility for health and life of the clients entrusted to the guide, pushes
the trainees to motivation of training, the responsible attitude and initially subjective position in
training. Their life experience and the experience of teachers act as a source of new knowledge.
Rational combination of teaching theoretical and practical skills, as well as regular practice in an
environment similar to that of the future work ensures continuity of training.

The attention paid by philosophers to the personality allows us to highlight in our reasoning
the personal component as the leading one and to include in its content a subjective position of the
person in communication and activities, as well as his personal activity in the process of training.

Let us formulate the important question: Should the education be "fast" or "long"? On the
one hand, it is really possible to learn quickly many mass professions to the level of stable
performance of "what the boss demands". But, on the other hand, many labor psychologists say that
professional development continues until retirement. As V.S.Oleynikov says, the main task of
vocational education is "... not only to give youth a general education and a profession, but also to
develop in youth the prerequisites for the permanent, continuing, lifelong education, for learning new trades and skills...» [10]. The essence of "lifelong education" is the constant development of a professional, corresponding to developing modern production [9]. In addition to the simple list of the knowledge areas whose representatives study, research the labor, and some the relevant concepts, it is useful to consider the nature of connections between the labor psychology and the adjacent non-psychological branches of knowledge and practice. That's something to roughly outline the place of the labor psychology among the relevant specific sciences. The fields of knowledge and practice having the first degree of relationship to labor psychology, are philosophy (not only in the aspect of common understanding of labor in development and existence of the man, but also of professional ethics and deontology — the study of duty and obligations), labor economics, labor sociology, physiology of labor, labor hygiene, professional pedagogics (pedagogics of vocational school, secondary special and higher schools), pedagogics of labor training and education, private methods of vocational school [1, 2].

Profession as an activity and an area of personality manifestation. Often overlooked is the fact that professional activity doesn't just produce any goods or services, but above all, it allows a person to realize his creative potential, creates conditions for the development of this potential (it will be recalled that K.Marx said that the main result of labor is not manufactured goods, but «the man himself in his social relations»).

These factors primarily predetermine the urgent need to develop the conceptual content and effective form of training specialists for eco-tourism and their immediate implementation in vocational tourism education.
PECULIARITIES OF A PENAL - EXECUTIVE SYSTEM MEMBER TRAINING FOR CLOSE FIGHT WITH A CRIMINAL IN WATER

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Keywords: underwater combat technique, a penal-executive system member, attack, defence, bradycardia, hyperventilation, carbonic acid, oxygen, hypoxic stability, physical load, a heart, a brain.

Annotation: The combat of a penal-executive system (PES) member with a criminal in water demands great physical loads, nervous-emotional efforts, an organism resistance to hypoxia. That is why the member of a penal-executive system should be cool-headed, emotionally stable, quickly and precisely analyze the situation and make optimal decisions, should have high level of physical reserves.

It is known that a brain and heart function normally only in case of a constant oxygen provision. Irrespective of the activity a person’s brain each moment consumes 50 millilitres of oxygen. A need of a heart for oxygen depends on its work volume and intensity. It is stated that in case of maximum loads heart as well as a brain demands 50 millilitres of oxygen every minute.

During submergence to water a person’s diving reflex activates and provides increased supply of a brain and a myocardium with oxygen not providing oxygen to other organs of an organism, including skeletal and respiratory muscles.

Through effective trainings increase the opportunities of a person to fight under water longer. His organism gradually accustoms and will easier overcome a low level of oxygen in blood. But a collaborator should learn to define the beginning of consciousness loss state during the combat under water as a result of brain hypoxia, as 3-4% of people can’t do it and risk their lives.

Research methods: scientific-methodical literature analysis, pedagogical observation.

Results. The article presents the main peculiarities of a close fight in water, physiological changes of cardiovascular and circulatory systems in case of combat in water and the facts of the lack of information according to the methodologies of combat conduct in water.

The article contains practical recommendations concerning the training process of a combat conduct in water and under water. The data of the article and other peculiarities of an organism under water form the base of the methodology of the cadets’ special physical readiness increase in higher educational establishments of the Federal Service of Penalty Execution in Russia for the combat with a criminal in water.

Introduction. As water has the density which is 775 times higher than the density of an air, viscosity which is 60 times higher than the viscosity of an air, heat capacity which is 4 times higher than the heat capacity of an air, heat conduction 25 times higher than the heat conduction of an air, it influences a person under water cooling the body and leading to hypoxia.

Nowadays many countries have not big sub-units of frogmen. In the USSR such sub-units were in the groups “Alpha”, “Pennant”, in a special brigade of a Navy and on the fleets.

The candidates for frogmen were chosen from military men who had several sport categories, went in for swimming or trained with an aqualung. A swimmer should be less than 100 kilograms, as if the weight is close to 100 kilograms the floatage is positive and it is difficult for a
swimmer to stay in depth. A frogman shouldn’t smoke as a person who smokes consumes more air [3]. Each frogman should fulfill the norms of the 1st category in swimming. The training starts from 1 kilometer swimming and gradually achieves the distance of 10 kilometers. After an ordinary swimming a frogman has to dive to 6-8 meters where an aqualung, a weight, a mask lay, “include” into an aqualung and to accomplish a battle, training mission. If he, fulfilling a work, stays under water for 2.5 minutes it will be evaluated as “perfect”.

Frogmen use swimming sidelong, breast-stroke, different ways on the back, free style (crawl). During the training they learn: to drop the holds in water, to swim with a drowning man, first-aid treatment, the technique of underwater combat with cold steel and without it. The most reasonable under water are smooth, circular, “pressed” to the body actions which cause less resistance and demand less effort for their fulfillment. The blade in the scabbard can be on the waist, hip, shin or a forearm of a swimmer. The way of the knife wearing determines the tactics of onrushing and defensive actions [10]. Taking into account the opportunity to arrest a criminal or having a close fight in a water it would be more reasonable to place a knife on the waist.

In case of underwater combat it is reasonable to have a normal floatage, difference between the extrusive power and a swimmer’s weight in water should be vanishing. If this difference is positive the swimmer will have to spend a lot of strength to stay under water. If this difference is negative the swimmer will have to spend a lot of strength to resist “sinking” power.

Attacking or protecting oneself it is necessary to use any opportunity to create “a point of support” on the criminal’s body, trying to take an advantageous position and to break his floatage.

The aim of this research work is to substantiate theoretically and give practical recommendations on the training process of the members of a penal-executive system according to combat conduct in water.

Objectives:
1. To substantiate the peculiarities of a close fight in water;
2. To reveal physiological changes of cardiovascular and circulatory systems in case of combat in water.

Methods: scientific-methodical literature analysis, pedagogical observation.

It is known that a brain and heart function normally only in case of a constant oxygen provision. Irrespective of the activity a person’s brain each moment consumes 50 millilitres of oxygen. A need of a heart as "pressed" to the body actions which cause less resistance and demand less effort for their fulfillment. The blade in the scabbard can be on the waist, hip, shin or a forearm of a swimmer. The way of the knife wearing determines the tactics of onrushing and defensive actions [10]. Taking into account the opportunity to arrest a criminal or having a close fight in a water it would be more reasonable to place a knife on the waist.

It is set that bradycardia develops both among the trained and not trained people. Volitional suppression of breath under water with bradycardia can lead to cardiac standstill. The diving mammals have bradycardia very quickly starting from the moment of diving, people have it in 5-7 seconds [1].

Time under water is limited by the volume of oxygen and the intensity of its use. In case of breath-holding after a maximum breath, oxygen supply usually doesn’t exceed 2 litres (900 millilitres in the lungs, 600 millilitres in blood, 500 millilitres in muscles). From 2 liters of oxygen only 1.5 can be spent. In this case we see the decrease of oxygen tension in blood more than to 50 % from the initial level and anoxaemia of a brain as “torpor”, mental confusion, slowing down of the actions, loss of consciousness. In case of great physical loads under water and in case of great oxygen consumption, with simultaneous absence of external respiration, loss of consciousness happens quickly. Started on the phase of inhalation breath-holding in common conditions lasts 40-60 seconds. To the moment of involuntary apnoea stop (temporary breath-holding in case of blood
filling with CO₂) CO₂ tension increases to 43-50 millimeters of mercury column, oxygen tension decreases to 75-60 millimeters of mercury column. CO₂ tension increase, oxygen tension decrease provide breathing recommencement, which is not possible under water. A person in this moment can feel some discomfort or even agony. Very important for the combat under water is maximum time of breath-holding which depends on the level of training, intensity of metabolic processes, oxygen supply, the state of acid-base balance, maximum volume of the lungs, “setting” the apparatus of breathing regulation, intensity and volume of physical loads and other factors. Staying in cold water decreases the time of breath-holding, staying in warm water increases this time. Systematic underwater trainings decrease the perceptibility of the respiratory center to CO₂, produce high effectiveness of oxygen use and this way increase the time of breath-holding. An effective hyperventilation helps to get rid of CO₂, increases the level of oxygen in the lungs to 100-150 millilitres, in the alveolar air from 14 to 17 %, providing breath-holding at rest to 50-65 seconds. In case of intensive muscular work breath-holdings under water which were 5-6 minutes were registered (the record is 9 minutes) [1].

A reasonable hyperventilation should be approximately 60 seconds. If it lasts longer a person has giddiness, flashing in the eyes, i.e. the signs of hypocapnia (decompression of CO₂ in blood). Hypocapnia worsens the hemodynamics of a brain and the functions of the central and peripheral nervous systems. The research works of Kreg (the USA) showed that as a result of a preliminary hyperventilation during 120 seconds and even less (10-12 breaths) the divers lost consciousness on the water and under water and died.

Effective trainings help a person to fight under water longer. His organism gradually accustoms and it will be easier to overcome maximum decreased percentage of oxygen in blood. But a collaborator should learn to define the beginning of consciousness loss state during the combat under water as a result of brain hypoxia, as 3-4% of people can’t do it and risk their lives. The latter causes the need for a qualified insurance in case of the training combat in water.

The combat with a criminal under water goes in unusual for a person conditions with great warmth and energy losses, high level of psychoemotional tension, hypoxia and hypercapnia development.

Water environment for many people becomes extreme. The following numbers prove it. According to the data of the International federation of the swimming associations (FINA) every year 250-300 people drown on the planet, i.e. every 2 minutes 1 person drowns. Drowning takes the second place after death in road accidents. In England to 100 thousand people the number of cases of drowning in a year is 4,0; in the USA – 4,6; in Australia - 5,5; in Japan - 9,0. In FRG every year drown 14 thousand people, in France – 20 thousand, 3-4 thousand people die. During recent 5 years in Russia drown more than 63 thousand people, more than 14 thousand of them are the children under 15.

The characteristics which most of all help in swimming are the following: long arms with wide palms, slender light legs, developed muscles of a shoulder girdle, vital capacity of the lungs, an optimal allocation of fat layer. The swimmers-divers in comparison with the simple swimmers have a low level of hand strength; having the same height they weight more, have longer legs and wider pelvis, shorter arms [1].

In case of diving at length a person holding a breath fulfills a great work as quickly spends oxygen and brings an organism into the state of hypoxia the level of which depends on muscular work intensity and duration, on water temperature, emotional tension. It was determined that during diving oxygen use is 2,5 litres per minute. Breath-holding on inhalation increases intrapulmonary pressure to 50-100 mm, making intrapulmonary blood circulation and blood supply of the heart worse. As a result blood supply of the left atrium and the left ventricle of a heart becomes worse, cardiac output decreases and the right sectors of a heart fill with blood. These factors can lead to brain hypoxia and loss of consciousness. It can happen to not enough trained sportsmen- divers during speed diving at length at the end of 5 meters distance [4].
Before diving in order to get rid of some part of carbonic acid very often hyperventilation is fulfilled. This allows to stay longer under water and at the same time provokes another danger. Under water carbonic acid partial pressure increase in blood to the level causing respiratory center damage becomes slow. Oxygen tension decrease in blood as a result of breath-holding and intensive muscular work goes quickly and can achieve a dangerous level earlier than a swimmer rises as the decrease of muscular work leads to blood stay at the periphery and decreases its inflow into a heart. Together with hypoxia it provokes loss of consciousness which happens in case of partial pressure of oxygen in alveolar air from 7 to 56 millimeters of mercury (the norm is 110 millimeters of mercury).

The process of diving is divided into 4 phases [13]:

1. Hyperventilation which lasts no more than 1-2 minutes. Experienced swimmers make 5-6 deep breaths and exhalations. After a light giddiness, a moderate case of the creeps, light pricking in the fingertips a swimmer makes a deep breath and dives.
2. A maximum work during diving is often fulfilled in anaerobic conditions. All movements should be economical and smooth.
3. During rising in order to avoid loss of consciousness belly and hands muscles shouldn’t be relaxed at once reaching the surface. The muscles should be relaxed not at once but gradually, slowly swimming.
4. The next diving should be fulfilled in 4-5 minutes of rest. It is necessary for liquidation of oxygen debt and for normalization of the main functions of cardiorespiratory system. During one training it is recommended to fulfill no more than 3 dives of high loads.

The combat of a penal-executive system (PES) member with a criminal in water demands great physical loads, nervous-emotional efforts, an organism resistance to hypoxia. That is why the member of a penal-executive system should be cool-headed, emotionally stable, quickly and precisely analyze the situation and make optimal decisions, should have high level of physical reserves.

As “there is no the methodology of divers training in the scientific-methodical literature” the results on frogmen training (for example “fur seals” training) are mainly closed, i.e. for administrative use, we were the first to develop the methodology of a penal-executive system members training to a combat with a criminal in water, under water. To it also testifies the fact that “diving at length as a kind of sport was included into military-sport classification without a deep study of its influence on an organism that is why the category normatives were mainly revealed empirically” [11]. The desire to create the first methodology on a person’s training to the combat under water on a higher level of quality demanded additional literature.

During the combat in cold water the working capacity decreases [14], as in water a person loses more warmth than in the air. In water the temperature of the whole body gradually becomes the same with water temperature. As a result the temperature of the internal organs decreases. The decrease of muscles temperature to 27° paralyzes all movements of a swimmer in water. Cold water increases viscosity of liquids and tissues of the joints and tendons providing trauma level increase. The higher is the speed of defensive-onrushing actions of a penal-executive system (PES) member in water, the higher is the level of water strength.

A person’s weight in water is 2-3 kilograms. During inhalation his unit weight will be less than a unit weight of water and during exhalation it can be a little bigger. In a vertical position under water the pressure on the surface parts will be less than on the lower ones. That is why the surface parts of the body are overflowed with blood in comparison with the lower ones, the volume of the abdominal cavity decreases, the diaphragm is set higher [5].

An experienced swimmer during intensive swimming uses 1,5-3,0 litres of oxygen per minute. Ventilation of lungs increases to 50-75 litres per minute. In a vertical position under water (1 meter depth) a chest (surface is 6600 millilitres) experiences additional loads of 660 kilograms [6].
Hyperventilation before diving increases the time of breath-holding to 1.5 times, oxygen hyperventilation to 3 times. Short-term hyperventilation increases the oxygen supply by means of its increase in arterial blood to 2-3%, increase of its partial pressure in alveolar air to 40-50%. In case of long-term hyperventilation increases the quantity of $O_2$ but $CO_2$ is moved away. $CO_2$ decrease in blood reflectively narrows the vessels of a brain protecting it from excess excretion of $CO_2$. Vessels narrowing decreases blood and oxygen supply. It leads to hypoxia in spite of great amount of oxygen in aortic blood after hyperventilation. Hypoxia in case of hyperventilation is one of the main reasons of all pathological states [4].

It is not reasonable for a penal-executive system (PES) member to smoke. The contained $O_2, CO_2$ in tobacco smoke is 9-10% and 5%, in the air 20.94% and 0.05%. Taking into account that 15 minutes after the first cigarette the muscular strength decreases to 15%, the accuracy of a ball throwing to 12% and it will lead to failure of a combat.

**Conclusion.** All mentioned above allows to reveal important demands to a penal-executive system (PES) member which help to survive in a combat with a criminal in water:

1. During the combat under water it is necessary to fulfill all defensive-onrushing motions circle-wise (ellipse) and economically in order to decrease oxygen consumption.
2. Directly before diving it is necessary to fulfill a short-term hyperventilation making 5 deep inhalations-exhalations.
3. The combat in cold water is necessary to intensively in order to minimize time of being in water.

These demands and other peculiarities of a person’s organism under water form the base of the methodology of a penal-executive system (PES) member training for the combat with a criminal under water.

**Bibliography**


PHYSIOLOGICAL BASIS AND PEDAGOGICAL PRINCIPLES OF QUALIFIED SPORTSMEN’S TRAINING

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Keywords: effectiveness of sportmen’s training, the laws of adaptation, theory and methodology of sport, specificity of the training loads, the methods of sports training construction, a complex method of sports training construction.

Annotation. The results of the sportmen’s training activity are defined, first of all, by the laws of physiology and in particular – by the laws of a man’s organism development and adaptation. The analysis of widely spread ideas of adaptive process mechanisms helped to reveal groundlessness and absurdity of these ideas. The system laws of a person’s organism adaptation determine the principles of the training level transfer from the training exercises to competitive ones and define the choice of the way of the training process organization.

Research methods: scientific literature analysis, sports – pedagogical tests.

Materials. The effectiveness of the swimmers’ training process, if they train according to generally accepted in sport schools programs and according to the program created in accordance with the laws of adaptation, is evaluated according to the dynamics of the standard swimming tests results and according to the individual results dynamics of swimming on competitive distances by means of chosen ways of swimming.

Results. A low effectiveness of the used in sport schools programs of young swimmers training was revealed. The facts are received which prove high effectiveness of physiologically reasonable complex training process in training of young swimmers. In an individual experiment high effectiveness of physiologically reasonable complex training process use is proved in qualified swimmers training.

Conclusion. Physiologically reasonable complex training process is the most effective way of sportmen training. During the training process organization first come out the problems of specificity and optimization of the training loads. The choice of the way of the training process organization should be realized according to the criterion of its highest effectiveness for each kind of sport.

The maximum effectiveness in the process of highly qualified sportmen upbringing can be achieved only by means of a scientifically grounded modern technology of athletes’ complex training. It is necessary to note that “a material” base of fitness level increase and sports productivity of any sportsman is a training process which is based on a general theory of sport and the theory and methodology of a chosen kind of sport. But the only thing, that a modern theory and methodology of sport can be based on, are really working laws of physiology: the laws of a person’s organism development and adaptation. L.P. Matveev (1965) declared that a biological process can’t be opposed to pedagogical one (and vice-versa) – they are common in form and content [9]. The first shows a complex of adaptive reorganizations in an organism of a sportsman as a reaction to a training load, the second reveals the essence of the training system itself [3]. Later N.N. Yakovlev (1976) wrote that the training was an adaptive process and he said the following about the training
process management: “In order to manage successfully you should know the mechanisms” [19]. The mechanisms of the training process management can be based only on the knowledge of laws of a person’s organism development and adaptation [11, 16, 17].

Judging by many publications, the most part of sport teachers are absolutely sure that the adaptation process goes according to the “scheme” – “stress – adaptation – disadaptation – readaptation”.

But it is known that stress is not the only nonspecific adaptive reaction of an organism [7]. Having made “stress” the only nonspecific reaction of an organism, the authors of mentioned above “scheme” made the adaptation process discrete, broken, depending only on the presence of a stressor and this contradicts all laws of Nature. A life is “a continuous adaptation… to life conditions” – I.M. Sechenov (1863). “From a wide biological point of view an organism is always in the conditions of an action of sequentially developing external and internal factors of its existence” [1].

Nonspecific characteristics of the factors influencing an organism (their size) can’t be judged without their specific qualities. Moreover nonspecific characteristics of the active factors define their specificity [16, 17]. An organism can’t react separately to nonspecific and specific characteristics of the active factors. But there is no specificity in mentioned above “scheme” and that is why it is not clear how the process of adaptation goes.

“Disadaptation” according to the ideas of the “scheme” creators is the process opposite to the process of “adaptation”, its “destruction” which is possible only in case of death. The use of the term “disadaptation” also proves the existing idea of adaptation as a process which happens occasionally. It should be noted that the appearance of the term “disadaptation” is closely connected with the idea that adaptation is always achievement by an organism some great opportunities, what is not correct.

The process of “readaptation”, according to the opinion of the most, means “return” of an organism to earlier achieved level of adaptation. But an organism is changeable and that is why all the following adaptation cycles will be not a return to “an earlier achieved level of adaptation” but an ability of a changed organism to achieve new “levels of adaptation” (which not always “exceed” according to their parameters achieved earlier results).

Thus the “scheme” - “stress – adaptation – disadaptation – readaptation”, orienting the coaches and the sportsmen to the training process creation according to the principle “the more the better” is absolutely absurd and doesn’t reveal real processes in the organism during its continuous adaptation to always fully acting environment factors. For the followers of this “scheme” we will say the words of G. Sele (1960): “There is nothing more harmful for the progress than maniacal assertion of one’s preconceived ideas” [15].

Adaptation is a process of an organism specific adjustment to always fully influencing on it environment factors and the process of structural – functional stability support of fully formed functional systems of an organism. The laws of adaptation: 1. The laws of adaptation are the same for all living organisms created according to one image. 2. The laws of adaptation are the part of the laws of a person’s development, maturity and ageing. 3. Adaptation is a continuous process which stops only if the organism dies. 4. Any living organism exists in four-dimensional space and that is why the processes of its adaptation can’t be described linearly. 5. In the base of the adaptation process of a highly organized organism is always the formation of specific functional systems, the adaptation changes in its components are one of the main “instrument” of their formation. 6. Constitutive factors of any functional system are the final and intermediate results of its “activity” and this defines its absolute structural – functional specificity. 7. The system reactions of an organism to a complex of simultaneous or (and) consistent environment effects are always specific and the nonspecific part of adaptation is an important component of any functional system and defines the specificity of its reaction. 8. It is necessary to say about simultaneously acting dominating and conditional afferent effects but it should be understood that an organism always reacts to the whole complex of environment effects forming a unique to the given complex
Each functional system is specific to the maximum and that is why relatively labile only at the stage of its formation (the process of an organism adaptation). Formed functional system (that corresponds to the state of adaptivity of an organism to definite conditions) loses its lability and is stable in case of its afferent part invariability. Any functional system can be formed only on the basis of “preexisting” physiological (structural - functional) mechanisms which depending on “demands” of a definite integral system can be involved or not into it as its components. The functional system components define its “behavior” in general, influencing each other, but a system in general always influences its components.

10. Any functional system can be formed only on the basis of “preexisting” physiological (structural - functional) mechanisms which depending on “demands” of a definite integral system can be involved or not into it as its components. Formed functional system (that corresponds to the state of adaptivity of an organism to definite conditions) loses its lability and is stable in case of its afferent part invariability. Any functional system can be formed only on the basis of “preexisting” physiological (structural - functional) mechanisms which depending on “demands” of a definite integral system can be involved or not into it as its components.

11. The functional system components define its “behavior” in general, influencing each other, but a system in general always influences its components. Formed functional system (that corresponds to the state of adaptivity of an organism to definite conditions) loses its lability and is stable in case of its afferent part invariability. Any functional system can be formed only on the basis of “preexisting” physiological (structural - functional) mechanisms which depending on “demands” of a definite integral system can be involved or not into it as its components.

12. Complexity and extension of “a working cycle” of the functional systems doesn’t have limits in time and space. An obligatory condition for a full formation of any functional system is constancy or periodicity of an influence on an organism of a standard, invariable complex of environment factors which “provides” a standard afferent part of a system. One more obligatory condition is the participation of memory mechanisms.

13. The process of adaptation, in spite of the fact that it goes according to general laws, is always individual as it is in direct relation to the genotype of this or that individual and is realized in the context of this genotype and in accordance to the conditions of a former life of a given organism’s phenotype [13].

In accordance to the presented laws of adaptation: 1. An organism always works as an integral mechanism and “forms” behavioural (motional) acts according to the conditions which it is placed in; 2. The systems of concrete motional acts are formed as a result of their frequent correct repetition; 3. Any activity of an organism is very specific concerning its external parameters and according to structural- functional characteristics of this activity; 4. Adaptive changes which form the base of a sportsman’s training level increase are determined by the specificity of his training activity. Exactly taking into account these regularities and observing the principles of purposefulness and optimality of the training loads should be build the training process of qualified sportmen, in this case it will be effective [18]. It should be noted that the fulfillment of a concrete work of an organism is provided by a concrete structural – functional complex of an organism and this structural – functional complex is “trained” in the process of a concrete work fulfillment. To train each complex an organism spends its “adaptive reserve” which is not unlimited. “In order to be fertile in one sphere nature has to be stingy in another” (Johann Wolfgang Goethe). “If nutritious saps come in plenty to one organ they seldom come to the other, at least plentifully” (Charles Robert Darwin). There is a firm law of nature: “If something comes to one place, in another place it will diminish”. In science this law is known as the law of conservation of energy. According to this law the more “not specific” is the fulfilled by the sportsman training work, the more is the damage inflicted on sports activity. This statement doesn’t exclude the use of additional exercises of not specific direction in the training process, but it should be noted that, “transfer of a training level” can be not only “positive” but also “negative”. So the group of additional training exercises should be chosen and used in the training complex in the way that each component of this training influence on a sportsman’s organism provided only a positive “training level transfer” to a competitive exercise [14]. The key to understanding the laws of “a training level transfer” is in the laws of system physiology and, in particular, in the laws of organism’s adaptation [11, 13, 16, 17]. Picture 1 shows schematically the principles of “a training level transfer”.

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The principles of a training level transfer (CE – competitive exercise; ATE – additional training exercise) (S. E. Pavlov, A. S. Pavlov, 2013)

“Automatic” positive “training level transfer” from the training exercises to the main competitive exercise is made in ±10-15% “corridor of specificity” of a fulfilled exercise (A.P. Bondarchuk) – in case of an optimal volume of the training loads observance. The use of relatively specific (beyond the bounds of 10-15% “corridor of specificity”) training exercises provides greater positive “training level transfer” the more specific (concerning the main competitive exercise) is used in the training exercise. In this case the main rule which is necessary to observe planning and creating the training process is the following: the effects of the specific training work should dominate in the training process.

Different authors offer different ways of the training process organization. The most popular are the theoretical projects of L.P.Matveev (periodization theory and methodology of sports training) and Y.V.Verkhoshanski (block theory of sports training). We should also mention, not very complimentary, V.B. Issurin who “thought out” his “block periodization of sports training”. Now he is an Israelitish “scientist” who just mixed the theories created by L.P.Matveev and Y.V.Verkhoshanski and, as a result, almost every reader can find in the book confirmation of his/her own ideas.

The most important for sport are theoretical and practical projects of an Olympic champion, doctor of pedagogics, professor A.P. Bondarchuk (1986, 2005, 2007, 2010 and others) who during almost 40 years “creates” the winners and awardees of world competitions of the highest level [2, 3, 20, 21]. He offered [3] the classification of the ways of sports training organization: a stage – complex way; a stage complex - variative way; a stage – variative way; a stage variative - complex way; a stage complex - combined way; a stage variative - combined way; a block – complex way; a block variative way; a block complex - variative way; a block variative - complex way; a block complex - combined way; a block variative – combined way; a variative way; a complex way; a combined way; a complex - variative way. Every coach independent of the choice of this or that way of the training process organization should understand that the final result of a sportsman’s training activity is always determined by the laws of physiology and that “…correct organized training should prepare a sportsman for the muscular activity which is necessary at competitions” [6].

An absolute priority in the way of the training process organization of native sportsmen is given to periodization theory and methodology by L.P.Matveev. Using “periodization positions” is written the program of swimmers training in sport schools for children and youth and sport schools for children and youth of the Olympic reserve [8], which is directed at “universal” swimmers.
upbringing. But even L.P. Matveev himself (1997) wrote: “… As an absolute level of sports results grew a popular practice of “sports universality became an anachronism”…”.

During two-month experiment we evaluated the effectiveness of a periodization – variative methodology of young swimmers training. The group’s average indices of the time spent to swim 50 meters distance were compared in a swimming test 4x50 meters in the initial test and the tests held biweekly during 6 weeks of training microcycles (table 1).

The dynamics of the group’s average indices of an average time spent to swim 50 meters parts (t_{average}) of young swimmers in the test 4x50 meters in the tests “1”, “2”, “3”, “4” during 6 weeks of training microcycles

<table>
<thead>
<tr>
<th></th>
<th>the 1(^{st}) (initial) test</th>
<th>the 2(^{nd}) test</th>
<th>the 3(^{rd}) test</th>
<th>the 4(^{th}) test</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>40,97</td>
<td>41,07</td>
<td>40,98</td>
<td>41,06</td>
</tr>
<tr>
<td>±m</td>
<td>0,70</td>
<td>0,69</td>
<td>0,69</td>
<td>0,70</td>
</tr>
<tr>
<td>s</td>
<td>2,98</td>
<td>2,93</td>
<td>2,93</td>
<td>2,95</td>
</tr>
<tr>
<td>t_{critical}</td>
<td>-0,11</td>
<td>-0,11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The absence of significant differences (p≤0,1) of the group’s average indices of an average time spent to swim 50 meters parts of young swimmers in the test 4x50 meters in the tests “1\(_{initial}\)”, “2”, “3”, “4” proves a real absence of these indices dynamics during two months of training in the studied groups of swimmers and, as a result, proves the inefficiency of the methodologies used in young swimmers training. So “a universal” training prevents the development of a swimmer’s functional qualities demanded in each separate case.
In a separate experiment as the training tasks young swimmers were offered a purposeful specific training work: swimming with different speed (50% from max, 75% from max, 100% from max) using a chosen style 25-, 50 and 100-meters distances and a specific speed – power work in water. The volume of an active swimming load, during each training, didn’t exceed 1000 meters. All sportsmen trained 4-5 times a week. The results dynamics of some sportsmen is presented graphically (picture 2).

On the basis of the research results we made the following conclusions: a) an idea of great training loads use to achieve high results in swimming doesn’t have real grounds; b) the use of specific, purposeful loads in swimmers’ training with an adequate to the level of sportsmen’s readiness to master an offered training load leads to the increase of sports results.

The base of a maximum training level achievement (for the present moment of his organism development) by a sportsman and “sports fitness peak” achievement should be a specific functional system of a concrete motional act. Picture 3 shows the dynamics of the sportsman’s individual results in swimming 50 meters distance using butterfly style during the period of adaptation to a standard training load in case of a complex way of the training process organization [2, 3, 20, 21]. We see a vivid improvement of sports result in swimming 50 meters distance using butterfly style. Moreover this experiment proved the opportunity and showed the ways and conditions of “sports fitness peak” achievement.
Picture 3. The dynamics of individual results in swimming 50 meters distance using butterfly style (A. Π-κ, 21 г, MC) during the period of adaptation and adaptation stage to a standard specific training load (a complex way of the training process organization)

Thus physiologically reasonable training process organization is the most effective way of highly qualified sportsmen training. During the training process organization first come out the problems of specificity and optimization of the training loads. The choice of the way of the training process organization should be realized according to the criterion of its highest effectiveness for each kind of sport.

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THE FUTURE ELECTRICIANS’ MINOR MOTILITY OF FINGERS DEVELOPMENT

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Keywords: tests, students of professional colleges, estimation using points, statistics, coordination.

Annotation: The future electricians’ minor motility of fingers development is a complicated task and demands a complex many-sided approach to this problem solution. According to the passport of this speciality an electrician must know how to install electric equipment. His labour productivity depends on “hands neatness”, attentiveness, acuity of vision. That is why the future electricians’ minor motility of fingers development is very important.

Research methods: scientific literature analysis, test creation with estimation by points and test fulfillment of hands motions coordination. The statistical analysis of the test results was held.

Materials. Was 50 students of the 1st course from the professional college -31 in Ulyanovsk (the speciality “Electrician”).

The research results. The students of the 1st course got 3,1±0,2points for the first test; for the second test they got 2,8±0,1points; for the third test they got 3,5±0,1 points; for the forth test they got 2,6±0,3 points; for the fifth test - 2,3±0,1points;for the sixth test - 2,8±0,4points; for the seventh test - 3,1±0,1points;for the eighth test - 3,7±0,2points;for the ninth test - 2,4±0,2 points; for the tenth test - 3,3±0,1points. The average grade according to all tests was 2,87±0,2points.
The received data show the low level of students’ minor motility of fingers development and the necessity of special exercises for its development creation and fulfillment.

Conclusion. The tests and the estimation using points of the students’ minor motility of fingers are created. A low and a middle level of minor motility of fingers development is set among the 1st year students’ from the professional college -1.

Innovative projects’ of industry development in Russia is impossible without highly qualified workers.

In the professional college -31 in Ulyanovsk the students are taught according to several specialities among which are the future electricians. According to the passport of this speciality an electrician must know how to install electric equipment. His labour productivity depends on “hands neatness”, attentiveness, acuity of vision. That is why the future electricians’ minor motility of fingers development is very important. We didn’t find the information on this problem in an available literature and that is why we consider this research work to be very urgent.

The aim of the research work: to create the tests and the estimation using points in order to estimate the students’ from the professional college -31 minor motility of fingers development on the speciality “electrician”.

The objectives of the research work:
1. To create the tests and the estimation using points in order to estimate the students’ from the professional college -31 minor motility of fingers development.
2. To determine the level of the students’ from the professional college -31 minor motility of fingers development on the speciality “electrician”.

**Research methods** included tests creation with the estimation using points and test fulfillment on hands motions coordination. The test was held among 50 students from the professional college -31. Two groups were formed: the control group (CG) and the treatment group (TG) with equal quantity of students. The statistical analysis of the test results was held.

**Research results**

Ten tests were created for the research work with estimation scale of 5 points for each level of minor motility of fingers development of each student.

**The tests for the level of minor motility of fingers development determination**

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Unscrewing and Twisting of the lids of 10 plastic bottles in a minute</td>
<td>5 points – all 10 bottles are untwisted and twisted; 4 points – 9 bottles are untwisted and twisted; 3 points – 8 bottles are untwisted and twisted; 2 points – 7 bottles are untwisted and twisted; 1 point – 6 bottles are untwisted and twisted.</td>
</tr>
<tr>
<td>3rd</td>
<td>Cutting the paper of А4 format by the scissors into 4 pieces in 30 seconds</td>
<td>5 points – 15 sheets; 4 points – 13 sheets; 3 points – 10 sheets; 2 points – 8 sheets; 1 point – 5 sheets.</td>
</tr>
<tr>
<td>4th</td>
<td>Buttons threading onto the wire in 30 seconds</td>
<td>5 points – 50 buttons; 4 points – 40 buttons; 3 points – 30 buttons; 2 points – 25 buttons; 1 point – 20 buttons.</td>
</tr>
<tr>
<td>5th</td>
<td>Knots tying on the laces in 30 seconds</td>
<td>5 points – 12 knots; 4 points – 10 knots; 3 points – 8 knots; 2 points – 6 knots; 1 point – 5 knots.</td>
</tr>
<tr>
<td>6th</td>
<td>Zippers closing and opening in 30 seconds</td>
<td>5 points – 20 zippers; 4 points – 18 zippers; 3 points – 15 zippers; 2 points – 12 zippers; 1 point – 10 zippers.</td>
</tr>
<tr>
<td>7th</td>
<td>Inking with the marker of the card squares on the window glass in 30 seconds</td>
<td>5 points – 5 squares; 4 points – 4 squares; 3 points – 3 squares;</td>
</tr>
</tbody>
</table>
The 8th test. Puzzle making (20 centimeter x 30 centimeter):
- 5 points – in 1 minute;
- 4 points – in 2 minutes;
- 3 points – in 3 minutes;
- 2 points – in 4 minutes;
- 1 point – in 5 minutes.

The 9th test. Cutting of the circles from a paper (diameter 10 centimeters) in a minute:
- 5 points – 10 circles;
- 4 points – 8 circles;
- 3 points – 6 circles;
- 2 points – 4 circles;
- 1 point – 2 circles.

The 10th test. Selection of 20 screw-nuts of different size to the appropriate 20 screw-bolts in 30 seconds:
- 5 points – 20 screw-bolts with screw-nuts;
- 4 points – 18 screw-bolts with screw-nuts;
- 3 points – 15 screw-bolts with screw-nuts;
- 2 points – 10 screw-bolts with screw-nuts;
- 1 point – 8 screw-bolts with screw-nuts.

**Picture 1. The test results of the students’ from the professional college -31 minor motility of fingers development level in Ulyanovsk**

The test results showed that the students of the 1st course got 3.1±0.2 points for the 1st test; for the second test 2.8±0.1 points; for the 3rd test 3.5±0.1 points; for the 4th test 2.6±0.3 points; for the 5th test 2.3±0.1 points; for the 6th test 2.8±0.4 points; for the 7th test 3.1±0.1 points; for the 8th test 3.7±0.2 points; for the 9th test 2.4±0.2 points; for the 10th test 3.3±0.01 points.

The average grade according to all tests was 2.87±0.2 points.

The received data show the low level of students’ minor motility of fingers development and the necessity of special exercises for its development creation and fulfillment.

**Conclusion:**

1. The tests and the estimation using points of the students’ minor motility of fingers development are created.
2. A low and a middle level of minor motility of fingers development is set among the 1\textsuperscript{st} year students’ from the professional college -31. It was 2.87±0.2 points.

**References:** Taking into account the research results it is necessary to create and then use a complex of exercises for the future electricians’ minor motility of fingers development.

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Keywords: adaptive reserve, environment, result, extrapolation.

Annotation. The sportsman’s body is regarded as an open biological system in this research work. Adaptation to a specific training load happens in case of an appropriate functional system formation. In the process of adaptation a permanent extrapolation of an organism’s adaptive reactions is fulfilled.

One of the important methodological problems in modern theory and methodology of sports training is the fragmentariness of system notions concerning a sportsman’s organism. Very often an organism is defined using a complex of notions and definitions from some science (biochemistry, physiology, biomechanics, pedagogics, psychology). On the one hand this approach is rational while describing different sides of its activity. On the other hand none of the sciences crosses its bounds and that is why incapable of providing knowledge interpenetration of private theories for their transformation on the integral level.

Each theory puts an organism into created by it theoretical bounds and doesn’t take into consideration the things beyond these bounds. Offered in this research work approach is directed at integration of knowledge from different theories on one object – a person’s organism (an athlete’s organism). Such an approach is fully realized in the theory of functional systems [1], including the achievements of the systems general theory, the theories of information, probability theory, adaptation.

In the systems general theory an organism is an open self-regulated biosystem which exchanges substance, energy and information with the environment. For us it is urgent to see the reactions of an open system in the conditions disturbing environment influence. The open system consists of some compulsory components (picture 1), such as a reservoir, an entrance, an exit, regulation valves, feedback loop.

To the entrance of the system a continuous stream of substance, energy and information from outside is supplied. As energy and information have a material base, i.e. the substance is the carrier of energy and information, to simplify the understanding of the processes under study it is rational to abstract our minds from the notion “substance” as the carrier of the characteristics, taking into consideration only the streams of energy and information.

The entrance has a valve which regulates in some range the entrance stream. The absolute closing of this valve would lead to reservoir exhaustion and in the end to the break-up of the system.

The reservoir of the system has a limited volume. It characterizes the system state (an organism) and its adaptive capacity. In addition to the entrance the reservoir has an exit with the
regulation valve with the help of which the system brings out energy and information into environment.

![Diagram](image)

**Picture1. Open system scheme**

CAR – current adaptive resource  
RS – “reserve stock”

The presence of the entrance and the exit lets the system to hold a definite stationary level of a continuous stream going through the reservoir and eliminates the possibility of the reservoir overfilling and exhaust. The stream regulation happens both at the entrance and at the exit.

Having an opportunity to regulate the intensity of the entrance and the exit streams, the open system has a great number of the stationary states which in general can be showed with the help of the reservoir filling levels. Among these stationary levels it is necessary to define two levels which are fundamentally important: minimal and maximum.

A minimal level of an energy resource doesn’t correspond to the bottom of the reservoir. It shows the system that reserve stock (RS) of energy which can be spent only in case of extremal situation. The energy is accumulated in the reservoir till this level only to provide the system’s self – survival.

A maximum level of an energy resource provides maximum comfortable for the system state. The maximum level is limited only by the volume of the reservoir. The energy which is higher than a minimal level gives the system an opportunity to spend it on achievement of good results, connected with the development, complication and adaptation to environment changes. The energy volume in the reservoir, between these two levels, can be defined as current adaptive resource (CAR).

In the theory of adaptation an organism preserves inner stability in conditions of changeable environment. On the one hand the system tries to preserve its balanced homeostatic state which corresponds to the maximum level of CAR. The digression from the state of balance is always accompanied by the increase of energy expenditure (urgent adaptation) and, as a result, by the decrease of the current level of the energy resource in the reservoir. The additional energy expenditure in this case is the result of disturbing environment factor influence which is not removed yet. On the other hand the organism is ready to spend any amount of CAR in order to find
the most effective and economical way of adaptation to this disturbance influence and return to the balance. This is the second reason of energy expenditure.

Thus CAR level decrease is a result of two parallel processes:
1) the influence of a new disturbing factor on the organism;
2) the search for the ways of adaptation to this influence.

The exit provides the free energy drainage of the system (CAR) in order to achieve the aim. The exit, as well as the entrance, has a valve which regulates the amount of given energy in a time unit. The system exit can’t be regarded as a thick drainage pipe through which the energy “fountain” spontaneously goes into environment. The energy, going out of the reservoir, should be structured to a useful result achievement. The exit stream structuring is the base of the notion “A functional system”.

The structuring is revealed in the fact that the exit stream is divided into a great but a limited number of functional elements each of which provides the system with an elementary function. It means that the system exit canal has not one but many valves equal to the number of the branches on all floors. The functional system is a selective involving of the functional elements with the unnecessary elements cut-off (the degrees of freedom) which provides the most economic and effective result achievement.

Thus in the theory of functional systems an organism adaptation to the environment disturbance influence happens in case of an appropriate functional system formation. The information about the given images of the functional systems is held in the memory as an informational – structural model. This model shows in which “floors” and “pipes” the valves should be open and where they should be close.

If a known environment disturbance factor influences an organism there is no homeostasis violation because in this case an organism instantly activates formed before and kept in the memory as an image a functional system, which provides its adaptation to this factor influence.

In another extreme case the environment disturbance factor is not known to the organism and it means that there is no ready image of a functional system for it and the organism is out of balance. But it doesn’t mean that a new functional system formation starts from scratch. In case of time deficiency an organism is guided by the principle of the least damage and uses one of the existing functional systems (let’s call it “base”) which minimizes (to the maximum) the loss of CAR. Then starts the search for some active functional elements (according to probabilistic feature) by means of their regulatory valves management. The search effectiveness is evaluated by the system (organism) on the basis of information coming to the entrance by means of the feedback loop.

The structure of the loop on the level of information elements receiving is multichannel, in other words the number of the sensory (gathering information) elements corresponds to the number of the functional elements.

Informational elements then join into bigger canals. To the system entrance goes a unified information canal which integrates all elementary signals. That is why the entrance canal can be considered as integrating information and the exit canal as differentiating energy canal.

A feedback loop gives the system the information about the influence of opening and closing of this or that regulation valve on the level of CAR dynamics in the reservoir in the canals of exit net. If the influence is positive the functional element is taken into the structure of a new forming functional system, if the influence is negative the element is excluded. A multistage search for the functional elements allows to create a new functional structure of the activated elements (a functional system) which make the CAR level maximum, making the system balanced (a lasting adaptation).

In real conditions the extreme situations almost don’t occur and we take into consideration more or less known to the system environment disturbances. The presence of two even identical according to their parameters environment disturbances is impossible, that is why the maximum
CAR level is an “ideal” to which a real CAR level aspires. The system has to correct the structure of the functional elements of the “base” functional system in each case of disturbance.

Thus the energy and information go to the entrance of the system. The reservoir on the basis of the information manipulates available to it energy. The exit canalizes the energy to achieve the result and to form informational signals. A feedback loop directs the information about the intermediate and the final results and also about the state of the reservoir at the system’s entrance.

It is known that the main factor for a functional system is a useful result achievement which exists as an informational model of a required future [2], i.e. at the time scale of consequence (a purposeful active functioning of a system) precedes the reason (the result model). The organism is always to forecast and then make a choice adequate to disturbing influences.

In this situation the organism extrapolates its actions concerning the choice of the routes of exit energy canalization. Taking into consideration a great number of functional elements, it would be not efficient to think that all functional elements are equally useful. That is why the order of the search of the functional elements is set according to the rating of their contribution to a useful result achievement. The elements having a low contribution are cut off (switching off unnecessary freedom degrees) and it saves time and energy. In the end the organism has comparatively small amount of useful functional elements among which the search happens.

In case of unfamiliar to the organism disturbances appearance it activates a “base” functional system according to a probable feature, then restricts the number of searching functional elements from those which were not involved in “base” one. It gives the organism an opportunity to create a new functional system, saving time and energy.

If the environment disturbances never coincide in reality according to all their parameters and there are no the same situations, there are only similar ones, a question appears: what is the structure of the functional systems persisting in the memory of the information models? The external disturbances qualitatively are united by the organism into some groups. Each group has important (often recurring) and subordinate (seldom recurring) parameters. The structure of the informational model elements of the functional system assumes their ranking according to the importance (probability of demands). That is why in case of this functional system activation as the “base” one first of all subordinate functional elements are changed, probably useless elements, taking into account the present situation.

The hierarchy in the memory of the informational models themselves is fulfilled according to the same probability feature, i.e. according to the frequency of their use in the past. Dominant will be the model which is used more often.

If we take the sphere of physical upbringing and sport training many facts are explained by means of the probability approach. The load is sustained by the organism as an external environment disturbance. A low rate of movements repetition the organism considers as randomness which has a low probability in the future. That is why in these circumstances the organism doesn’t apply adaptation processes to them. And only after several repetitions, when the analytical mechanism of the nervous system states that this regimen is not accidental but a regular act and has a high probability of repetition in the future, the organism starts to use actively morphofunctional adaptive processes.

The organism, which has a limited adaptive resource, adapts oneself to new environment conditions developing the functional system which is most likely to accept a specific disturbance influence of the environment. The concentration of the adaptive resource happens in the direction of only one, the most important for an organism in the given conditions functional system development. And this system becomes dominating for this period of time.

In the probability theory the motion activity of the organism adequately reflects the environment conditions of life. To the organism motion activity should be peculiar the predominance of the definite, the most appropriate for these conditions regimens of demonstration with gradually decreasing parts of the movements regimens with more or less high qualitative
features. The general view of the movements’ regimens statistic allocation has a symmetric character, i.e. can be described by the function of a normal allocation.

The normal type of allocation is widely spread. But the symmetric (normal) allocation of the motional activity features of the organism is not typical of sports training, as the main aim of the sports training is not in a definite state of the organism support but in its intensive purposeful development. The stabilized state of the organism overcoming demands the violation of the motional activity features’ symmetric allocation. For this it is necessary to bring into the process of affecting the factor which would violate the symmetric allocation of the motional activity features’ symmetric allocation and it would be a reason for development. This factor becomes a “super factor” [3]. In the sphere of physical upbringing and sports training this “super factor” is a general orientation of the loads. In case of noncentrality in motional activity features allocation a qualitative shift of a modal class happens – the biggest part of the allocation to which the organism directs its main adaptive efforts. Adapting to the changes of the environment and at the same time having a limited adaptive resource, the organism redistribute it to achieve urgent adaptation violating the symmetry of the dome till the formation of the appropriate functional system is not finished.

Thus studying an organism using a system approach helps to determine the following:

- a sportsman’s organism is an open self-regulated biosystem which exchanges substance, energy and information with the environment;
- an organism preserves inner stability in conditions of changeable environment;
- an organism adaptation to the environment disturbance influence happens in case of an appropriate functional system formation;
- in the process of adaptation a permanent extrapolation of an organism’s adaptive reactions is fulfilled with evaluation of development possibilities for the situation on the basis of the law of normal allocation;
- the motion functions of the organism development is achieved in case of violation of motion activity features’ symmetric allocation.

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Key words: sports psychology, sports reserve training, the requirement of motivational sphere.

Summary: Modern state of Russian football has led many experts to reflect on the development of new approaches and methods, quality assessment of training not only high-class sportsmen, but also the middle of the reserve. This reflects the General tendencies in the world of sport and the evidence of the efforts made to improve the efficiency of management of educational-training process in all sports. With the increasing competitive pressures and close attention to the promising athletes from the public and the media, the ability of the coach to manage the requirement of motivational sphere of the young sportsmen, to recognize and prevent the phenomenon of beyond motivation becomes more urgent.

Research methods: analysis and generalization of scientific and methodological literature, the analysis of pedagogical documentation, psychological testing, pedagogical supervision, pedagogical experiment, methods of mathematical statistics.

Materials: personality theory, theory of sports training, control theory preparation of sports reserve, modern concepts of motivation theories stress, research in the field of psychological training of sportsmen and results of competitive activity.

Results. To individually-psychological characteristics of the individual football players, determining the expediency of differentiated approach to this sport training should include: particular requirement of motivational sphere, emotional burnout and localization of subjective control. It is established that the success of the sports activities is caused by the predominance of the players motivation to success with the obligatory saving motivation to avoid failures. Contributes to the success of the sports activities, serves as a prevention of emotional burnout the urgency of the need for self-expression. More favorable for athletes in comparison with externalities should be considered moderately internal locus of control. All components of a burnout syndrome, depersonalization, emotional exhaustion, reduction of personal achievements are connected with negative states of sportsmen and do not contribute to the success of the sports activities. Factor analysis has established linkages between indicators requirement of motivational sphere and components of a burnout syndrome in different groups of players: continued playing football after a sports school and graduated to playing football.

For experimental work methodology was carried out with the use of such psycho-pedagogical tools as talking, explaining a story, discussion, psychological games and exercises. The effectiveness of this method was determined in two directions: 1 - evaluation of the significance of differences in individual psychological indicators players of the experimental group before and after the experiment, 2 - analysis of the safety of the troops and the success of the sports activities of players after the end of the sports school.

Introduction

Individually differentiated approach is one of the basic pedagogical principles. The necessity of its application in practice of the sport contributed to the study of issues of individualization means and methods of sports training, to identify areas of individualization of training process, in
particular, in specialized sports school of Olympic reserve [5]. In the late 90's it summarizes the results of research on the problem of individualization of training of young sportsmen [2]. At the beginning of 2000-ies investigated within the framework of doctoral dissertation devoted to the differentiated approach to the construction of training process of young sportsmen at the stage of long-term training [1].

The complexity and importance of the problem, the variety of sports, the specifics of which involves the development of special methodical ways of realization of the individual and differentiated principle, not only require further research, but a significant activation of the scientific-methodical work in this direction [6,7 and other]. Currently, research, greater attention has been paid to the individualization of various aspects of preparation of athletes, such as pre-training of boxers, distinguished individually-psychological features [4].

In recent years there has been a marked intensification of the processes of change in composition of football teams, and not only in sports, but in youth sports teams. In some cases, the transition of young football players in the other team is initiated his trainers, management of sports school. In the team often attract new pupils. Instability conditions of training activities for young players have negative effect on their psychological state, morally-strong-willed preparedness, which leads to a lower level of technical and tactical actions on training and competitions and gives athletes a feeling of dissatisfaction and disappointment. Screening of players from the sports school and then at the end of the sports school of up to 50% of the players are not fixed in adult teams and leave football, is a serious problem in the development of this sport in the country.

The problematic situation is created largely by the fact that the young athlete needs not only psychological support and care from the side of the coach, but also individual approach, taking into account its physical, functional, technical and tactical abilities and psychological characteristics of a person. However the coaching staff of the team, especially to beginners, experienced difficulties in understanding the inner world of the pupils. Many coaches do not own the means of regulation of unwanted mental States players do not have the scientific and methodological knowledge in the field of diagnostics of individual psychological characteristics of the young players. In this connection, they ignored the possibility of construction of the training process, including tools and teaching methods of its individualization based on the psychological properties of the players.

In theoretical works sports professionals, examines the essential features of the individual and differentiated approach in sports training. The application of this approach was more prevalent in individual sports and, as a rule, working with highly skilled sportsmen. For other sports, such as football, and soccer players in the age range of 14-16 years this problem in psychological-pedagogical aspect practically was not considered. All the above led to the choice of subjects of this study.

The object of the research was the training process footballer 14-16 years. The subject - individual-differential approach to ensure the process of preparation of young football players on the basis of their individual psychological characteristics.

The aim of the study was to develop methods of psycho-pedagogical support individual and differentiated approach to preparation of football players 14-16 years as a means of enhancing the security troops and the success of their sports activities. During the survey the following tasks were solved:

1. To determine the individual-psychological characteristics of the person, determining the expediency of differentiated approach to sports preparation, and the degree of their manifestation in young players.

2. To identify typological aggregate of individual-psychological characteristics of the players taking into account the success of the sports activities.

3. To develop and experimentally validate methods of psychological-pedagogical support individual and differentiated approach to the training of young footballers in the conditions of the sports school.
Methods and organization of research: the analysis and generalization of scientific and methodological literature, the analysis of pedagogical documentation, psychological testing, pedagogical supervision, pedagogical experiment, methods of mathematical statistics.

The study was conducted on the bases of CYSS PFC «CSKA» (Central sport club of army), «Lokomotiv» (Moscow), the CPC FC «KAMAZ» (Naberezhnye Chelny) which was attended by 128 different players playing roles in the age of 14-16 years.

The research results and their discussion.
1. To individually-psychological characteristics of the individual players, determining the expediency of differentiated approach to them sport training, should include: particular requirement of motivational sphere, emotional burnout and localization of subjective control. It is established that the success of the sports activities is caused inter alia by the predominance of the players motivation to success with the obligatory saving motivation to avoid failures. Contributes to the success of the sports activities, serves as a prevention of emotional burnout the urgency of needs and self-expression (development of his strength and abilities, commitment to new and unexplored, the desire to do business, requiring a full commitment). More favorable for athletes in comparison with externalities should be considered moderately internal locus of control. All components of a burnout syndrome, depersonalization, emotional exhaustion, reduction of personal achievements are connected with negative states of sportsmen and do not contribute to the success of the sports activities.

2. In 69% of the surveyed players prevails motivational orientation on achievement of success, more favorable motivational sphere from the point of view of motivation of achievement observed in 37% of players (i.e. more than one third) at 32% - also prevails motivation success, but with a very (too) high level that can be evaluated as a negative factor. 18% of the players revealed no domination of one over another motivation, that can be evaluated positively, as motivation to success must prevail. The remaining 13% of subjects predominant motivation to avoiding failures, which is considered by specialists as a negative factor. You should note that athletes with a low level of motivation failure avoidance, with strong performance in the motivation of success exhibit a tendency to overestimate their capabilities.

3. Needs of individual players are satisfied for the three levels of satisfaction, not partial satisfaction and not satisfaction. Not satisfied needs are most relevant at the time of testing, these include: the need for self-expression is not satisfied more than half of the players (53%). Assessed as not meeting the needs in the recognition of 13% of subjects. Other needs are not satisfied with the small number of players: social, material, the need for security (respectively, 5%, 4%, 2%). For these needs some players celebrate their full satisfaction at the time of testing, i.e. they are not relevant. The need for self-expression - 3%, and in recognition of 1% of players. It satisfied the requirements include: material, social, need for security (respectively: 39%, 31%, 22%). Satisfaction of material needs, social and security needs to reflect the positive tendencies in the requirement of motivational sphere. When assessing the satisfaction of the needs of the players have not indicated partial satisfaction against all demands, in addition to needing to express themselves, that they have not been granted.

4. Diagnostics of level of subjective control, showed that athletes are divided about equally on the internals, that is, places responsibility for the events of his life (51%), and externalities, are inclined to lay responsibility for the events of his life on others and circumstances (49%). On other scales obtained the following results: - internal (internal control) on average for the whole sample prevails in the field of achievements (Ia - 85%), interpersonal relations (Ir - 59%) and on the scale of «health-illness» (Ih - 63%); - externalities (external) type of control is mainly celebrated in the field failures (If - 76%) and industrial relations (Ii - 71%). The obtained results testify about expediency of use in the work with the players-the externalities of tools and methods for enhancing their responsibility in different situations and to warn among athletes internals extreme manifestation of this property.
5. Signs of burnout syndrome players predominantly in the form of depersonalization (cynicism about colleagues in the team) and reduction of personal achievements, to a lesser extent - in the form of emotional exhaustion. It was established that the high level of all components of emotional burnout often marked in the group of players with a very high level of motivation to success (61% - depersonalization); 52.2% - reduction of personal achievements; 19.5% - emotional exhaustion. High level indicators burnout syndrome marked by components (depersonalization - 37%, reduction of personal achievements - 32%, emotional exhaustion - 13% of all examinees).

6. Factor analysis has established linkages between indicators requirement of motivational sphere and components of a burnout syndrome in different groups of players: for athletes who continued playing football after sports school are clearly targeted at the achievement of success and self-realization (the need for self-expression through the reduction of personal achievements; the need for recognition. Factors affecting athletes who finished playing football, different content on such variables as: «motivation failure avoidance», «emotional exhaustion, depersonalization». The sample selected from the players, who continued playing football at the end of the sports school (n = 78) by 67 % describe four factors, the components of which are: «motivation of achievement», «the need for self-expression», «reduction of personal achievements» - 20%, «material needs» and «social needs» - 17%, «the need for security», «emotional exhaustion»- 16%, «the need for recognition» - 14%.

The sample selected from the players who finished playing football at the end of the sports school (n = 50) 67% describe as four factors, which include the following individual psychological peculiarities: «social needs», «the need for recognition» - 18%, «the needs of the material» and the «need for self-expression» - 17%, «motivation failure avoidance» and «emotional exhaustion» - 16%, «depersonalization» - 16%.

In the group of players continuing to play football does not stand out, «motivation failure avoidance» and «depersonalization» that are available in the band stopped playing football. In contrast, in the group ceased classes not identify the «reduction of personal achievements» and «motivation to succeed».

7. For experimental work methodology was based on the principles of individual and differentiated approach, advance planning psycho-pedagogical support, strong backward linkages and related correction, humanistic impact on the identity of the athlete with the use of such psycho-pedagogical tools as talking, write a story, discussion, psychological games and exercises. The effectiveness of this method was determined in two directions: 1 - evaluation of the significance of differences in individual psychological indicators of the players of the experimental group before and after the experiment, 2 - analysis of the safety of the troops and the success of the sports activities of players after the end of the sports school.

8. The experimental method of psycho-pedagogical support individual and differentiated approach to preparation of football players 14-16 years, taking into account their individual psychological characteristics on a sample of athletes CPC FC «KAMAZ», showed a significant change parameters requirement of motivational sphere of the subjects on the following indicators: «the security needs» (p=0.018) and «social needs» (p=0.016) - a reduction not of satisfaction of the needs; the need for self-expression» (p=0.018) - rising satisfaction, and hence the relevance to the subjects; «internality in the field of failures» (p=0.20) and «interpersonal relations» (p=0.17) - that is increase of the rate of internal control according to the scales of internality. The decrease in «depersonalization» (p=0.21), indicating a tendency to relieve tension in relations with teammates and coach. In connection with this technique can be recommended for use in the conditions of the sports school for this age cohort.

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DYNAMICS OF AN ABSOLUTE FERTILITY DEPPENDING ON LEHGTH, WEIGHT AND
AGE OF ROACH IN WATERS OF KUIBYSHEV RESERVOIR STORAGE

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Keywords: an absolute fertility, trade length, food, spawn, temperature rate.

Annotation. Fertility is a mechanism of roach quantity regulation and is an adaptive feature of a species. There is an absolute fertility indices dependence on weight, length and age. Our data show the following regularity: with the increase of the trade length, weight and age increases an absolute fertility. It is important to note that an absolute fertility changes are less expressed speaking about small size fish. The dynamics of an absolute fertility increase in case of weight increase, in contrast to age and length, has lesser deviation.

The factors, influencing an absolute fertility, can be hydrological, hydrochemical, thermal rates and food provision. Fertility increase happens in case of food provision increase.

In case of food provision decrease, slows down the growth, and as a result decrease the indices of an absolute fertility.

Research methods: scientific literature analysis, ichthyological material capturing, fish fertility determination according to the method of Pravdin (1966).

Material. Ichthyological material for an absolute fertility study was gathered during the period of 2010-2012 on the territory of Staromaiski bay in Kuibyshev reservoir storage. An absolute fertility was studied counting eggs in 5 grams, taken from separate parts of an ovary with further converting to the weight of gonads.

Results. Depending on age an absolute fertility of roach on the territory of Staromaiski bay in Kuibyshev reservoir storage, during the period of 2010-2012, varied from 5987 to 112151 pieces. The data show the following regularity: with the increase of the trade length, weight and age increases an absolute fertility, but analyzing the dependence of fertility change on age, we see that in case of shift from 8 to 9 years and from 9 to 10 years the increase of an absolute fertility slows down, it is connected with fish ageing. The changes of an absolute fertility are less evident speaking about small size fish.

Conclusion. The research results show that an absolute fertility of roach is determined by food provision, a level, temperature and wind rates in a reservoir storage.

Urgency. An absolute fertility provides optimal quantity of population preservation in case of changing conditions of an environment (Ivankov V.N., 1985, 2001). Fertility is a mechanism of population quantity regulation in charge of a definite level of spawn and young fish death-rate. Great changes of population absolute fertility cause changes in the level of brood survival rate that is why fertility is not so important in dynamics of population quantity. More modern hypothesis, expressed by Rothschild (2009), shows that increase of population fertility leads to increase of brood survival rate. The problem of ratio of spawning herd and the brood first was stated by G.V. Nikolski (1980), who mentioned that “very often as a result of adverse conditions of development and in case of population fertility increase we can have low level of harvest and vice versa in case of low level of population fertility in favorable conditions – a high level of brood”. Many factors of ecological and biological character can influence fish ontogenesis, define brood variability.

In modern conditions the most important are the scientific works connected with the study and prognostication of fishery. One of the main indices of roach breeding capacity is an absolute fertility.

The aim of this research work is to reveal the dynamics of an absolute fertility depending
on length, weight and age of roach in modern conditions of Kuibyshev reservoir storage.

**Research results and their discussion.** Fish fertility is an adaptive feature of a species and it varies greatly. On the territory of Kuibyshev reservoir storage in 2010-2012 we studied an important biological index – an absolute (individual) fertility (spawn quantity which a female roach lays during one spawning period).

The received data can be seen from table 1 (ratio of an absolute fertility and a trade length), 2 (ratio of an absolute fertility and age) and 3 (ratio of an absolute fertility and weight).

<table>
<thead>
<tr>
<th>Table 1</th>
<th>An absolute fertility dynamics depending on a trade length during the period of 2010-2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade length, centimeters</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td>Min thousand</td>
</tr>
<tr>
<td>12,6-14,5</td>
<td>-</td>
</tr>
<tr>
<td>14,6-16,5</td>
<td>8050</td>
</tr>
<tr>
<td>16,6-18,5</td>
<td>9750</td>
</tr>
<tr>
<td>18,6-20,5</td>
<td>15556</td>
</tr>
<tr>
<td>20,6-22,5</td>
<td>20450</td>
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<td>22,6-24,5</td>
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</tr>
<tr>
<td>24,6-26,5</td>
<td>32987</td>
</tr>
<tr>
<td>26,6-28,5</td>
<td>48089</td>
</tr>
<tr>
<td>28,6-30,5</td>
<td>-</td>
</tr>
<tr>
<td>30,6-32,5</td>
<td>-</td>
</tr>
</tbody>
</table>

In the process of the received information analysis it was revealed that with the increase of a trade length, age and weight also increases an absolute fertility. It is important to note that an absolute fertility changes are not so expressed speaking about small size fish (a trade length from 12,6 to 16,5 centimeters, weight from 49 to 140 grams, age from 3+ to 4+ years). In each mentioned group an absolute fertility increase is unessential.

To compare 2011: the individuals with the trade length of 12,6-14,5 centimeters had an absolute fertility which varied from 6100 to 7690 thousand pieces. The individuals with the trade length of 14,6-16,5 centimeters had an absolute fertility which varied from 6750 to 8950 thousand pieces. Comparing two groups of individuals (12,6-14,5 centimeters and 14,6-16,5 centimeters), we see the indices increase of an absolute fertility to 9-10%.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>An absolute fertility dynamics depending on age during the period of 2010-2012</th>
</tr>
</thead>
</table>

- 108 -
Comparing groups according to weight 49-90 grams and 91-140 grams, we see the increase of average indices to 24-27%, transferring from the age of 3+ to 4+ fertility increase is 24-29%. Almost the same was in 2010, 2012. An absolute fertility increase is clearly seen in different age groups. The reason of such kind of tendency is in the fact that a fast-growing fish achieves its puberty earlier, but their fertility (as for the first time taking part in spawning) is lower.

Depending on age an absolute fertility on the territory of Staromaiski bay in Kuibyshev reservoir storage (during the period 2010-2012) varied from 5987 to 87560 pieces (table 2). As it was mentioned above with the increase of age increases an absolute fertility. It should be noted that this regularity was revealed during the whole period of the research work, in all age groups, in spite of the fact that an average water temperature, a level rate in 2010 differed from the indices in 2011-2012.

Depending on a trade length (table 1) an absolute fertility of a roach on the territory of Staromaiski bay in Kuibyshev reservoir storage (during the period 2010-2012) varied from 6100 to 112151 pieces.

Tables 1, 2, 3 present the maximum and the minimal indices of an absolute fertility and we can notice two regularities: a slight increase of an absolute fertility that small size fish had and a tendency to a general number of eggs increase depending on age. Picture 1 shows that with years the dependence of an absolute fertility from length has a curvilinear character. The dynamics of a roach absolute fertility increase in connection with mass increase, in contrast to age and length, has a lesser deflection and is expressed by means of a linear equation (picture 2).
Summarizing the received results we can conclude that an absolute fertility increase is directly proportional to increase of weight and length, but if we analyze dependence of fertility change on age we see another tendency: in case of transfer from 8 to 9 years and from 9 to 10 years an absolute fertility increase slows down and it is connected with the individual’s ageing.

As tables 1 and 3 show, an absolute fertility of even-aged individuals is not the same: the highest indices the roach had in 2012. This fact is explained by favorable conditions (a temperature, a level rate) in the previous 2011. In 2011 the indices of an absolute fertility were lower because of unfavorable conditions in 2010. It is important to note that an absolute fertility depends on several factors:
V.A. Kuznetsov (2009) mentions such kind of regularity: rapid growth, early aging, fertility increase happens in case of food provision improvement.

Table 3

An absolute fertility dynamics depending on weight during the period of 2010-2012

<table>
<thead>
<tr>
<th>Weight, grams</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min thousand</td>
<td>Max thousand</td>
<td>n</td>
</tr>
<tr>
<td>49-90</td>
<td>5423</td>
<td>11987</td>
<td>2</td>
</tr>
<tr>
<td>91-140</td>
<td>9870</td>
<td>16678</td>
<td>3</td>
</tr>
<tr>
<td>141-190</td>
<td>12990</td>
<td>23134</td>
<td>8</td>
</tr>
<tr>
<td>191-240</td>
<td>16020</td>
<td>35600</td>
<td>5</td>
</tr>
<tr>
<td>241-290</td>
<td>30100</td>
<td>34100</td>
<td>1</td>
</tr>
<tr>
<td>291-340</td>
<td>31100</td>
<td>52950</td>
<td>2</td>
</tr>
<tr>
<td>341-390</td>
<td>33368</td>
<td>59580</td>
<td>3</td>
</tr>
<tr>
<td>391-440</td>
<td>41245</td>
<td>49895</td>
<td>2</td>
</tr>
</tbody>
</table>

Comparing data of the research works in water area of Staromaitski bay in Kuibyshev reservoir storage on an absolute fertility of roach with the results in an open part of middle Volga we see higher indices in the reservoir storage. It is connected with the fact that roach living in the rivers grows slowly as the benthos in the rivers is poor (O.P. Rodnenko, 2010).

Cyprinoid fish fertility, as the research works of S.S. Gainiev show, varies greatly in different years within different populations and within one population, including one size fish and even-aged fish. Spawn quantity is connected with weight and linear growth and also with the age of puberty. In works of V.A. Nazarenko (1966, 2009) the question of roach growth dependence on food quality is studied. Aged forms of roach which eat mollusca are characterized by a high rate of growing. In case of good food provision they have higher absolute fertility.

Bibliography


THE QUESTION OF PHYSICAL ACTIVITY RATIONING AT THE LESSONS OF HEALTH - IMPROVING GYMNASTICS WITH MIDDLE-AGED WOMEN

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Keywords: physical fitness, motional readiness, motivation, individualization, group training, health.

Annotation. The choice and regulation of the physical activity at the lessons of health-improving gymnastics is difficult because the members of the group are not constant, individual characteristics and the initial level of physical fitness are not taken into account. In these conditions the principle of the training process individualization is important for health preservation and strengthening of middle-aged women.

Research methods: scientific – methodical literature analysis and generalization; survey; anthropomorphic measurements; somatoscopy; physical development evaluation; functional diagnostics; pedagogical testing; pedagogical observations; pedagogical experiment; methods of mathematical analysis and statistics.

Materials. In order to realize the program individualization the methodology of lessons holding was created. It takes into account the initial level of physical fitness and motivation. A complex test was held using the computer program. According to the complex test results each woman was given a report with the results and recommendations on motional regimen for independent training or with the trainer.

Results. Taking into account the initial level of physical fitness, motivation, aims of the lessons, individual profile of morphofunctional state allowed to increase the indices of physical and psychoemotional state of middle-aged women.

Conclusion. The offered methodology of lessons provides working capacity increase of those who train and can be recommended for use in fitness clubs, health-improving centers for trainers – teachers.

Introduction. The amount of fitness clubs grows. But not in all of them enough attention is paid to the questions of physical activity individualization and the monitoring of clients’ physical fitness [1]. As the practice shows the clients should solve themselves the problems of physical fitness level determination and the intensity of physical activity, they don’t receive competent professional help [4]. The choice and regulation of the physical activity at the lessons of health-improving gymnastics is difficult because the members of the group are not constant that is why the instructor can’t form the training program for more or less long period of time and is guided by averaged parameters. Smirnov S.I. [3] pays attention to the fact that the instructor should not only hold a lesson but should competently improve the health of those who train. The urgency of our research work is in solving the problem of contradiction between the necessity to create the conditions for middle-aged women’s health preservation and strengthening, by means of physical health-improving culture, and poor methodical supply of this process individualization. The effort to find the solution to this contradiction defined the problem, of our research work.
**Research methods** - scientific – methodical literature analysis and generalization; survey; anthropomorphic measurements; somatoscopy; physical development evaluation; functional diagnostics; pedagogical testing; pedagogical observations; pedagogical experiment; methods of mathematical analysis and statistics.

Research organization – the research was held since November 2004 till April 2010 on the basis of shaping colleges, fitness gyms, a municipal children's polyclinic № 14 in Saint Petersburg. To reveal the demands and motivation to health-improving gymnastics a survey was held among 160 women (age range 35-55). To define the initial level of morphofunctional state and motional readiness, the first test was held among 80 women with the help of the computer program created in Saint Petersburg Scientific Research Institute of Physical Culture. This program is created for mass researches in order to define the level of physical development, the level of motional readiness and individual recommendations formation for independent and group lessons [2,5]. The test was held according to 30 parameters. Women under study attended the lessons more than 2 years. 210 lessons of health-improving gymnastics were held 2 times a week. Each lesson lasted 60 minutes.

**The results and their discussion.** The scientific – methodical literature analysis showed that the existing lessons of health-improving gymnastics for women are directed at body correction and working capacity increase. It is set that in women’s individual characteristics and the initial level of physical state are not enough taken into account in the offered systems of gymnastics exercises. That is why while creating the experimental methodology of health-improving gymnastics lessons with middle-aged women we first of all tried to adapt the used means and methods of the lessons to the abilities of the women. Also it is necessary to take into account the initial level of physical, functional state, motional readiness, nervous – psychical tension and motivation to attend lessons. On the basis of programs creation experience and a strict consistency of pedagogical techniques we created the methodology of lessons holding in order to individualize a program.

The characteristics of the offered methodology are the following:
- questionnaire survey fulfillment, on the basis of which the main priorities and aims, necessary to form an individual training program, are evaluated;
- test fulfillment, the results of which help to define the initial level of motional readiness, to evaluate the nervous – psychical state, the type of bodybuild and body constitution using Matiegka method, to define the problem zones;
- the evaluation is given to physical development level, functional sate, motional readiness, nervous – psychical tension;
- the individual profile of morphofunctional state is defined on the basis of test results and anthropometric measuring; the regime of the lessons is defined (duration and the number of lessons a week, energy expenditures, loads intensity according to heart rate);
- an individual program is created, taking into account motivation the means, directed at the stated problems solution, are added;
- the effectiveness of the training process is increased by means of additional exercises and special techniques introduction into preparatory, main and final parts of the lesson, the load regulation is fulfilled during the lesson;
- repetitive tests are held in 2-3 months in order to correct the training program.

According to the complex test results each woman was given a report with the results and recommendations on motional regimen for independent training or with the trainer. The work in group includes individual approach, taking into account the received recommendations. The way of exercises fulfillment is stream-oriented.

During the questionnaire survey an orientation of gymnastics exercises was revealed – the correction of the body and the functional state improvement of a cardiovascular and respiratory systems, psychoemotional tension, working capacity increase.
Depending on the aims of the lessons and the results of a questionnaire survey middle-aged women were divided into two age sub-groups.

According to the results of the test and the questionnaire survey two treatment and two control groups were created: in the first sub-group (35-44 years old) the lessons were directed at the decrease of the psychoemotional tension level, body and bearing correction; in the second sub-group (45-54 years old) the lessons were directed at functional state improvement of the cardiovascular and respiratory systems and at working capacity increase. It was stated that the treatment and control groups of two sub-groups were equal in indices of morphofunctional state.

According to the results of the test an individual profile of a motional readiness and a morphofunctional state was built. It allowed to form an individual program: the regime of the lessons determination - loads intensity according to heart rate; duration of the lessons, the number of lessons a week and energy expenditures; use of additional means in the preparatory, main and final parts of the lessons.

Each woman was given a report with the results of the test and recommendations on motional regimen: loads intensity, the lessons duration and multipleness of the lessons for independent work or with the trainer. After 1.5 -2 months the second test was held in order to correct the training program.

As the means the programs on aerobics and shaping were used. In the control groups women went in for shaping according to an ordinary program and in the treatment groups according to an offered methodology. For all women equal conditions and demands for lessons, observations and test were created.

Load regulation was held individually in accordance with the indices of power endurance of the main muscular groups, taking into account the physical state of women and the set goals. All women were divided into three levels of physical readiness: a low level, a medium level and a high level. During the lessons there was a medical-pedagogical control.

On all stages of the experiment the analysis of the physical state was held using a testing computer system. On the final stage of the research work the comparison of the research results was held in two sub-groups and the conclusions were made about their effectiveness and the ability of practical application.

As a result of the main pedagogical experiment (210 lessons with duration of 60 minutes each) reliable changes happened.

In sub-group 1, the main aim of which was psychoemotional state improvement and body correction, positive reliable changes happened in the indices of vegetative coefficient, muscular endurance, flexibility, co-ordination, heart rate in orthostatic test, timed inspiratory capacity test, the index of functional changes, aerobic endurance, speed, general level of physical readiness, physical fitness evaluation (according to Apanasenko). In the indices of situational and personal anxiety according to Spielberg-Khanin some changes happened but they are not reliable.

Picture 1 presents the psychoemotional state indices dynamics of a treatment group according to AT-norm, vegetative coefficient (according to Luscher color test) and health self-evaluation (according to Voytenko). There were positive changes in the treatment group in all indices. In the control group there were positive changes in the indices of a subjective health evaluation.
**Picture 1.** The psychoemotional state indices dynamics of 35-44 year old women of the treatment group

In sub-group 2 (45-55 years old), oriented at functional state of cardiovascular and respiratory systems improvement and working capacity increase, reliable changes happened in the indices: heart rate at rest, autogenic norm (according to Luscher), muscular endurance, coordination, the level of physical readiness, physical state evaluation. In other indices also happened positive changes but their differences were not reliable.

Picture 2 presents the evaluation of women’s physical fitness (45-55 years-old) from the treatment group 2. The notion of physical fitness according to Apanasenko includes the following indices: Quetelet index; power, life index, aerobic endurance, double product (Robinson index).

**Picture 2.** Physical fitness evaluation according to Apanasenko of women (45-55 years old) from the treatment group

**Conclusion.** The results of the pedagogical experiment showed that taking into account the initial level of physical fitness, motivation, aims of the lessons, individual profile of morphofunctional state allowed to define the methodology of the lessons and to specify its content. All this allowed to increase the indices of physical and psychoemotional state of middle-aged women. The considered choice of exercises and inclusion of approved additional means into the training process provides the increase of the women’s working capacity.

The offered methodology of lessons can be recommended for use in fitness clubs, health-improving centers for trainers – teachers.

**Bibliography**


FEATURES OF SPATIAL-TEMPORAL PARAMETERS OF VISUAL PERCEPTION IN QUALIFIED SHOOTERS IN SPORT

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Key words: individual profile asymmetry, functional asymmetry, sensory asymmetries, skilled shooters in sport, the critical frequency of light flashes.

Abstract. Physical and psychological stress in elite athletes close to the borders of biological and social norms that limit human adaptation abilities. Individual profile asymmetry is neurophysiological basis of individual differences in motor activity and is one of the factors differentiating growth reserves of human functional abilities. Sport activity - one of the bright manifestations of human higher mental functions, which can not be implemented in isolation from the properties of the nervous system and maintaining of the necessary excitability and lability of cortical departments of analyzers. The analysis of nervous processes lability characteristics and functional state of the cortical departments of visual analyzer based on lateral preferences of shooters was shown in the article.

Research methods: the analysis laterality of paired organs in 44 tests to identify preferences in motility of hands, feet, in vision and hearing. Functional state of the cortical departments of visual analyzer and differential sensitivity of color perception is determined by the critical frequency of light flashes pulsed light.

Materials. 40 qualified shooters specializing in pistol shooting (n = 12) and rifle (n = 28) were studied. The average age of shooters was 20 ± 0,5. The control group consisted of 22 youngsters at the age of 19 ± 0,5, who didn’t do any sport, with "absolutely right" IPA ("rrrr"). Athletes and untrained persons, participated in the study on a voluntary basis, provided written informed consent.

Results: It was found that in the shooters the degree of asymmetry, estimated by Kas (%) reaches the limit indices due to the peculiarities of monocular sighting. Indices KChSM on the stimulation by green color is higher than on the stimulation by red color in shooters of the right (leading) and the left (non-leading) eyes. Comparative analysis of the data obtained using the light pulse generator of the transistor (KChSM-1) and the complex PAKF -1 - (KChSM-2) showed the following: the indices values of KChSM on the stimulation by red color obtained by using complex PAKF-1predominate over those that have been obtained by using a transistor oscillator (table 2).

Conclusion. Bilateral asymmetry of the differential sensitivity of light flashes is shown in advantage of the non-leading (left) eye, regardless of the shooting of events. In untrained right-handed youngsters differences between indicators of flicker frequency threshold for right and left eyes are absent. Asymmetries nuances are specific to shooting specializations depending on the definition of condition (color fusion situation or flicker differentiation), as well as color marker.

Introduction. Extensive way of optimizing athletic training does not meet the realities of today's sport. Physical and psychological stress in elite athletes came nearer to borders of biological and social norms, a limit of human adaptation abilities [2, 11]. It is crucial that in athletes of the highest qualification optimal adaptation is observed when using loads aimed at maximum development of genetically determined individual inclinations (especially from CNS) [1, 3].

It is known that the neurophysiological basis of individual differences in motor activity of a person is made by an individual profile asymmetry [3, 7]. Reflecting features of regulatory
mechanisms, it is one of the factors differentiating growth reserves of human functional abilities. Many physiological researches are directed on studying of human adaptation to the requirements of different sports [9, 12, 14, 15, 21], however, questions relating to the asymmetries in shooting, are rarely affected by them. Shooting, being complex coordinating sport is characterized by the unique requirements to a strictly limited and asymmetric structure of monotone motor actions. Specific character of the requirements for the athlete in shooting, helps to create special conditions for the manifestation of motor and sensory asymmetries - visual, auditory, vestibular [10, 17, 23]. Advisability of sensory analysis of asymmetries in shooters is associated with visual deprivation at the sighting; depending on its features of holding weapons and expressed asymmetry of pose by doing shooting exercises that must surely affect the vestibular stability.

Sport activity - one of the bright manifestations of human highest mental functions, which cannot be realized separately from properties of nervous system and maintenance of necessary excitability and lability of cortical departments of analyzers [16]. In this regard methods of diagnostics of indicators of the individual psychophysiological status are especially valuable. In this regard expediency of the detailed analysis of the lateral preferences caused by their features of lability of nervous processes and a functional state of cortical department of the visual analyzer in shooters is represented actual.

The critical frequency of light flashes (KChSM) is a threshold frequency flicker above which it is appeared the impression of continuous light. This research method is widely used in ophthalmic practice as a criterion for diagnosing the state of the visual analyze from retinal photoreceptors to the cerebral cortex, and in some cases, in treatment of the visual system. KChSM research allowed to determine its performance standards for different age groups, the degree of decline with age, and also revealed KChSM independence from visual acuity, refraction, and the absence of significant differences between the indices during stimulation with different colors [8, 20, and 22].

In sports researches using techniques CFFF are aimed at identifying the degree of fatigue and lability of human visual analyzer [13, 15]. We have made an attempt to analyze the possibility of applying this method to the determination of the asymmetry.

Research methods and organization. Assessment of laterality of paired organs was studied in 44 tests to identify preferences in motility of hands, feet, in vision and hearing. Character and degree of hemispheric asymmetry were assessed by the sign and size of the asymmetry coefficients (%).

The functional state of cortical visual analyzer and differential sensitivity of color perception were determined by the critical frequency of light flickers of pulsed light (KChSM). This method is based on the principles of discretometria and refers to the spatial-temporal parameters of visual perception. CFFF is the maximum frequency at which the human subject still distinguishes the separate light flashing rhythmically served with increasing and decreasing frequency.

The critical frequency of light flickers fusion (KChSSM) is the minimum of flickers frequency of intermittent light emission per unit time at which the human eye stops to distinguish the flickers and the light source is perceived by them as a continuous light [20]. The critical frequency of light flickers discriminating (KChRSM) is the decreasing of the flicker frequencies below the critical boundary at which the human eye begins to distinguish flickers, and the light source again is perceived by the subject as flashing.

To determine the threshold of the critical frequency of fusion and distinguishing light flickers it was used two versions of the test: 1) using a transistor oscillator of light pulses through multivibrator with a smooth change of the pulse frequencies from 30 Hz to 55 Hz [6] ; 2) using hardware-software complex for psychophysiological research PAKF -01 "Mirage" (St. Petersburg, 2007). At the same time the subject consistently determines critical frequency of fusion and distinguishing of light flickers (KChSSM and KChRSM) of red color, and then green color by the right eye. After one minute of rest with eyes open the examination was repeated in the same sequence for the left eye. [16]
The subject consistently performed four options of tasks 2 times each defining at himself: KChSSM and KChRSM of red and green colors performed in the frequency range from 7 to 60 Hz. Individual indices of upper and lower limits were recorded. Indices of the asymmetry (%) of flicker perception by leading and non-leading eyes were calculated.

**Results and discussion.** As shown in previously published papers [18, 19], in sports shooting, degree of vision asymmetry, estimated by Kas (%) reaches the limit indices due to the peculiarities of monocular sight. However, for efficient evaluation of asymmetry in shooting it is important to know about other quantitative parameters of visual function, and display of their asymmetry one of which is lability of the visual analyzer in the test KChSM.

Analysis of the obtained data showed that athletes KChSM indices on the stimulation by green color was higher than on stimulation by red color for both right (leading) and left (NLO) eyes (Fig. 1).

![Graph showing the critical frequency of light flickers (Hz) of right (KChSMp) and left (KChSMl) eyes (median)]

* - P <0.05 - significance of differences between red and green colors;
° - p <0.05 - significance of differences between the right and left eyes.

In shooters specializing in pistol and rifle shooting flickers frequency of green color for subdominant (left) eye was higher (p <0.05) than for the dominant (right) eye.

In the control group no significant differences between CFFF indices on red and green colors were revealed, the asymmetry was seen in the prevalence of CFFF indices of left eye on red color.

CFFF index in all groups exceeded 41 Hz, which indicates of a high level of cortical lability of the visual analyzer [16].

As stated earlier, the shooters were revealed differences of CFFF indices (for both right and left eye) on stimulation by green and red colors, more expressed in pistol shooters. At the same time the difference between CFFF indices on stimulation by green and red colors, obtaining in studies of K.V Golubtsova [5], was 3-4 Hz, which is slightly higher than our results, which ranged from 2-2.2 Hz for the right and left eyes in pistol and rifle shooters.

For a detailed evaluation of the asymmetry of functions of the visual analyzer, we used parameters such as the critical fusion frequency (KChSSM) and discrimination (KChRSM) light flickers. They revealed that in all subjects KCHSSM of green color dominates over KChSSM of red color (p <0.05). It is especially true of right and left eyes (Fig. 2), except for the index of this indicator for the right eye in the group of pistol shooters. Predominance of KChRSM on green was found in the group of rifle shooters and untrained young men and only for the right eye (p <0.05).
The comparative analysis of KChSSM of right and left eyes showed that subjects in all groups had tendency to predominance of KChSSM of red color of leading eye over non-leading eye, but credibility (p 5) was revealed only in pistol shooters (37.5 and 36.9 Hz). According to the opinion of A.B.Petrova, V.V. Romanova [14], it is connected with predominant role of the left hemisphere of brain, but also with competitive activity conditions. Asymmetry of KChSSM on stimulation by green color was not revealed.

Asymmetry of KChRSM in group of athletes specializing in rifle shooting, opposite, presented but in favor of left (non-leading) eye. In untrained young men the KChRSM asymmetry was not revealed. In group of athletes specializing in pistol shooting it was revealed the predominance of KChSM index (table 1) of leading right eye on stimulation by green color (45,1Hz) over leading right eye in athletes specializing in rifle shooting (43,8 Hz).

The athletes of this group also showed the predominance of KChSSM index of green color and KChRSM index of red and green colors (46.8 and 50.4 Hz) for the right (leading) eye over the same indices but in the control group. In shooters, and untrained young men it was observed the absolute predominance of KChRSM index over KChSSM index.

Table 1

<table>
<thead>
<tr>
<th>Specialization</th>
<th>KChSM</th>
<th>KChSSM</th>
<th>KChRSM</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>right eye</td>
<td>left eye</td>
<td>right eye</td>
</tr>
<tr>
<td>pistol shooting</td>
<td>37.5°</td>
<td>39.4</td>
<td>36.9</td>
</tr>
<tr>
<td>rifle shooting</td>
<td>46.6</td>
<td>50.4</td>
<td>51.7</td>
</tr>
<tr>
<td>untrained young men</td>
<td>30</td>
<td>35</td>
<td>40</td>
</tr>
</tbody>
</table>

Figure 2. Critical fusion frequency and distinguishing light flickers (Hz) of the right and left eyes (median)

* - P <0.05 - significance of differences between red and green colors;
° - p <0.05 - significance of differences between the right and left eyes.
KChSSMp and KChSSMi - critical frequency of light flickers fusion of right and left eyes;
KChSRMp and KChSRMi - critical frequency of light flickers distinguish of right and left eyes.
The comparative analysis of the data obtained by using of the transistor generator of the light pulse (CFFF-1) and the complex PAKF-1 (CFFF-2) [16] showed the following: the quantities of CFFF on red color stimulation obtained by using complex 1 PAKF predominated over those which were obtained by using a transistor oscillator (Table 2).

<table>
<thead>
<tr>
<th>Specialization</th>
<th>KChSM - 1 right eye</th>
<th>KChSM - 1 left eye</th>
<th>KChSM - 2 right eye</th>
<th>KChSM - 2 left eye</th>
</tr>
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<tr>
<td>pistol shooting</td>
<td>30,8</td>
<td>31</td>
<td>42,5</td>
<td>43,8</td>
</tr>
<tr>
<td>rifle shooting</td>
<td>31,1</td>
<td>30,7</td>
<td>41,8</td>
<td>43,2</td>
</tr>
<tr>
<td>untrained young men</td>
<td>29,5</td>
<td>29,2</td>
<td>41</td>
<td>43</td>
</tr>
</tbody>
</table>

The difference is true for the right and left eyes p <0.05) only for shooters specializing in rifle shooting, and for the right eye in untrained young men. Thus, athletes, regardless of the shooting specialization were characterized by large KChSM index on stimulation of green color for the right and the left eyes than the untrained young men.

The correlation between KChSM indices on stimulation by green and red colors is characterized by the small difference between their values. Asymmetry of KChSSM to the stimulus of red color was revealed only in pistol shooters in favor of the right (leading) eye. In shooters, like the young men with the right IPA, not practicing sports, KChRSM exceeded KChSSM. Index of all parameters obtained using a computer program (PAKF-1) was higher than using a transistor oscillator of light pulses, but revealed regularities were not fundamentally different.

**Conclusion.** Summing up the above study, it should be noted that the average KChSM index of skilled shooters (when averaged of indicators of KChSSM and KChRSM for red and green colors, regardless of the shooting specialization, was higher than in untrained young men, indicating that athletes have a high level of lability of cortical areas of the visual analyzer, located in both hemispheres [16]. However, a detailed analysis revealed a significant dependence of the sensitivity of the color differentiation on test conditions. Thus, KChSM of green color perception by left and
red eyes was almost always higher than red. With monocular testing of a leading (right) and non-leading (left) eye KChSSM index always was less than KChRSM index.

The asymmetry of the differential sensitivity of light perception (KChSM) is manifested in favor of the non-leading left eye: in rifle shooters - for green and red colors, in the control group - for red color. Functional visual asymmetry revealed during detailed analysis was observed only in a situation of discrimination of light flickers (KChRSM) and thus in favor of the non-leading (left) eye in rifle shooters - on red and green light, in untrained young men - only on red light. Bilateral differences in situation of light flickers fusion (KChSSM) in all groups on the incentives of red and green colors are not available, except for pistol shooters - on red.

Results of the study of spatial-temporal parameters of visual perception - KChSM - first demonstrated functional asymmetry of lability of the cortical divisions of the visual analyzer and sensitivity of color differentiation, regardless of the shooting specialization in favor of the non-leading left eye. In untrained right-handed young men differences between indicators of flickers frequency threshold for right and left eyes are absent.

However, the nuances of asymmetries for shooting specializations showed specificity depending on the definition of (situations of color fusion or flicker discrimination), as well as color marker. The most expressed advantage of athletes over untrained young men was recorded during stimulation of the green color signal, and in pistol shooters compared to rifle shooters KChSM index on both markers is prevailed. When pistol shooters were stimulated by red and green light stimuli recognition by dominant eye allowed getting large KChSSM quantities. It was stated large KChRSM quantities separately for dominant eye on stimulation of green color (above red). Overall, KChRSM index of all the shooters dominates over KChSSM index.

Functional asymmetry of the sensitivity of the color differentiation in skilled shooters, regardless of the shooting specialization appears on the background of a higher average index of KChSM than in untrained young men, indicating a high level of lability of the cortical divisions of the visual analyzer [4, 16]. It should be noted that the index of parameters obtained by using the computer program testing (complex PAKF-1) was higher than obtained by applying the transistor generator of light pulses.

Bibliography

DEVELOPMENT PROSPECTS OF AN INTEGRATED EDUCATIVE PHYSICAL-SPORT ENVIRONMENT IN A REGION

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Keywords: physical upbringing, pupils, students of higher educational establishments, effectiveness increase, a model, functioning, strategy, humanitarization, regional educational policy.

Annotation. Effectiveness increase of pupils’ physical upbringing is connected with the formation of physical – sport environment on the basis of its humanitarization and functioning development. A model of functioning of an integrated educative physical – sport environment is created. It is directed at harmonious pupil’s personality development, provides the balance between the state and the main subjects of education and realizes the mechanisms of regional education systems functioning. The prospects of an integrated educative physical – sport environment development in a separate region are defined. These prospects are connected with the realization of the regional educational policy; procedures directed at optimization of pupils’ psychophysical state, effectiveness increase of physical upbringing in a higher educational establishment, taking into account the revealed problems of the students.

Research methods: content analysis of the literature and documentary materials, sociological research works, test, modeling, methods of mathematical statistics.

Materials. In order to reveal the development prospects of physical upbringing system in the integrated educative physical – sport environment the potential abilities are substantiated. The abilities which determine the optimization of pupils’ and students’ psychophysical state, and adaptation of pupils from the country to educative student environment of the town by means of the integrated physical – sport environment.

Results. The prospects of the integrated educative physical – sport environment are determined, which provide the optimization of pupils’ psychophysical state, perspective directions of development of the integrated educative physical – sport environment functioning, taking into account the revealed problems of the students from higher educational establishments. The principles of the regional educational policy are defined as the objective and subjective development factors of the integrated educative physical – sport environment. It is stated that the search for the ways of development and satisfaction of a regional educational needs determines the opportunity of the integrated environment perfection in two main directions: as a system of different types of educational, medical and social establishments co-ordination and as a system of interrelated educational programs on all stages of pupils’ and students’ physical culture education.

Conclusion. The denoted development prospects of the integrated educative physical – sport environment in the region provide the effectiveness increase of pupils’ and students’ physical upbringing, provide the improvement of integration relations in a regional educational system.

Introduction

In the Strategy of physical culture and sport development in the Russian Federation during the period till 2020 physical culture modernization in educational establishments is reflected as one of the priority directions. The analysis of the present-day situation allows to contend that
effectiveness increase of pupils’ physical upbringing is connected with the formation of the physical – sport environment on the basis of its humanitarization and functioning development. The urgency of our research work is determined by the state and society order directed at pupils’ physical upbringing effectiveness increase, taking into account the regional peculiarities, which is possible in the integrated educative physical – sport environment.

During the research work the model of the integrated educative physical – sport environment functioning was created, which is presented by the components and factors of co-ordination, i.e. important conditions influencing this environment development. The model creates a consistent notion of the integrated educative physical – sport environment, the main factor of which is an axiological – objective component. This axiological – objective component is a harmonious personality development as a process and a result of a pupil’s development in this environment. The presented model corresponds with the pupils’ physical upbringing conception, in the context of which the integrated educative physical – sport environment is formed. The integrated educative physical – sport environment provides the balance between the state and the main subjects of education (a pupil, parents, a teacher) and realizes the mechanisms of the regional educational systems functioning [10].

The prospectivity of the developed integrated educative physical – sport environment model is substantiated. The integrated environment is presented as dynamically developing educational system in the model. This system is ready to innovations and gives an opportunity to its renovation and development in accordance with the sociocultural development of a society, with new pedagogical ideas and allows to make them from potential to real ones, where the social order is realized. The prospects of the integrated environment are connected with the fact that the paradigm of integration and humanitarization, chosen for its formation, reflect not only modern orientation in pedagogics and practice, but also priority development strategies of Russian education and the tendency of society development in the world. Today the main resources of a person’s social development become a healthy lifestyle, opportunities of self-realization in a society which provides the importance of the integrated environment functioning.

In the context of this article it is rational to define the prospects of the integrated educative physical – sport environment development in the region. In modern educational normative documents the creation of the development strategies of the systems of education in the regions is stated as the mechanism of education development.

**Research results**

Regional and interregional educational policies in modern Russia are still developing. In modern conditions there is a change from a unitary model of the center and regions co-ordination to the role of the regional factors actualization. Today almost all regions create their own models of education development and define the specificity of their regional educational system, in the state educational standard of school and University regional component is determined, the specification of which, according to the content, define the regions themselves. In this case there is a contradiction between the tendency of the subjects of the regional educational systems to choose their strategies, to project typical for a region ways of education development and the lack of scientific conception of education regionalization, in particular from the position of physical culture education as a constitutive part of an integral regional educational system.

Education regionalization is an educational policy direction connected with the rights expansion, independency and responsibility of some regions for education; and is opposite to centralization [6]. It provides conditions creation for the regional educational systems functioning and development in accordance with social – economic, cultural and educational demands of the regions [7]. Regionalization is a multivariable according to the aims and forms social-pedagogical process, which includes the system of education organization and management and influences the state of educational environment, health, activity and socialization of the educational process members [1]. Regionalization nowadays is a dominating factor of an educational system.
development and it determines a new stage of variative education formation on the territory of modern Russia [3].

An important aspect of transformations in the process of Russian education modernization is the principles of a regional educational policy formation, which are adequate to a general ideology of a state in the sphere of education [2, 5].

When creating the strategies of new types of pedagogical systems, which include the integrated educative physical – sport environment, the prospects of its development in a separate region should be connected with the regional educational policy realization. In this connection, on the basis of the research work by N.V. Bordovskaya [4] the principles of regional educational policy are defined as the objective and subjective factors of the integrated educative physical – sport environment development:

- the increase of the cultural-educational level of the population in a region;
- the cultural-educational traditions of a region renewal and preservation;
- conditions creation for the innovations spectrum increase in the educational systems of a region;
- satisfaction of demands in specialists of a region and provision of a person’s life-time learning with the help of a region.

In the process of a research work it was stated that the search for the ways of educational demands development and satisfaction of a region defines an opportunity of the integrated educative physical – sport environment development in two main directions.

First of all, the model of the integrated educative physical – sport environment should be presented as an interaction system of different types of educational, medical and social establishments, which reveals the character of connection between them in a region.

Secondly, regional integrated educative physical – sport environment can be seen through the system of interconnected educational programs on all levels of pupils’ and students’ physical culture education. These programs experimentally in advance work over all possible variants of educational demands of a region satisfaction on the basis of students’ psychophysiological state analysis and their needs study in physical education perfection.

The difference between the notions “regionalization” and “regionality” was stated. Regionalization is a social process of a regional component increase in social events (the elements of culture, upbringing), in other words, it is a process of gaining or connection, the mechanism of “growing accustomed” in a region. Regionality is a quality of the social processes or events in a definite region.

We will define the prospects of the integrated educative physical – sport environment development by the example of Far-Eastern region.

The analysis of the results of the integrated educative physical – sport environment were the base for its perfection factors search and the prospects of its development in Far-Eastern region. The guiding lines in this search were the social effects of the integrated educative physical – sport environment, taking into account the regional specificity, which are the evidence of positive changes in the direction of physical readiness formation and effectiveness increase of physical upbringing.

First of all, we’ll define the measures, directed at the pupils’ psychophysiological state optimization in accordance with the principles of a regional educational policy.

The prospects of the integrated educative physical – sport environment development are connected with the effectiveness increase of “Presidential competitions”. The analysis of the stages of “Presidential competitions” shows that if the territorial and All-Russian competitions turn into sports holidays and they are well-organized, in this case, school (correspondence) stage loses its importance and creates problems in comprehensive educational establishments. Let’s define some of them.

Very often real competitions between the pupils at school are held only among the streams where regional and Russian competitions will take place. Teachers see in this an additional stimulus
for the pupils as the children ask beforehand in which classes the competitions will be held this year and start to prepare.

The teachers of physical culture mention that to make “Presidential competitions” effective at school it is rational to hold the competitions among all classes of a school, in order to make the competitions a holiday and invite the parents and to hold the competitions between neighboring schools.

To increase the effectiveness of the school stage of “Presidential competitions” it is necessary to raise their status and to involve the members of additional education establishments, sportsmen and others into their organization. To make the competitions effective and the results reliable it is necessary to involve a special committee into their organization. This committee should consist from the teachers of physical culture and the members of school administration, the best sportsmen of a school, civil society organizations (for example sports veterans).

It is necessary to reconsider the tables of age evaluative normatives of “Presidential competitions”, to make them adequate to each age group of pupils, taking into consideration regional standards of physical readiness and to define the criteria of physical readiness level calculation (according to the average mark of all six tests) for a school stage.

The prospects of the integrated educative physical – sport environment development are also in organization and holding competitions in physical culture for pupils. Competitions in physical culture for pupils become popular and important in educational environment. They reveal the level of modern pupils’ theoretical and physical training and the quality of teaching the subject “Physical culture” in educational establishments.

In 2009 there were the 7th regional competitions for pupils in “Physical culture”. The representative of 15 municipal units of Khabarovsk Krai took part in these competitions (68 people). The analysis of the theoretical – methodical test results shows that the general level of pupils’ theoretical training is not high. More than 75% of the tasks fulfilled only one participant, most of pupils fulfilled no more than 50% of the tasks and 7 participants answered less than 25% of the questions. This proves that the teachers of physical culture in their practical activity don’t pay enough attention to the theoretical part, included as compulsory into a school program. The results of a practical part show that in spite of general level improvement of training according to the sections “Gymnastics”, “Athletics”, “Sport games”, most participants have a low level of technical and physical readiness [8].

The analysis of the regional competitions results in “Physical culture” shows that modern organization of physical upbringing at schools doesn’t provide a complex mastering theoretical knowledge, specified by a curriculum, tactical skills in kinds of sport and obtaining a proper level of physical and functional training.

An absolute problem is the fact that the training for all health-improving measures at school, including the competitions in physical culture, is mainly defined as the duty of a teacher of physical culture. Many teachers of physical culture, in order to represent a school or a region successfully during the competitions, use the lessons of physical culture to prepare pupils for the competitions, replacing the program content of the subject, which is to provide health-improvement.

As a result, a school has good results at the competitions which are achieved not by participation of all schoolchildren and their involvement into a health-improving activity but by participation of a group of trained students, who present a school each year (many of them attend sports sections and that is why achieve good results).

Another problem is that the main attention the teachers of physical culture pay to physical readiness of the pupils. A project and reviewing work are very often fulfilled formally but not to involve pupils into work with theoretical material, search for information, theme development.

Integration of a school and a social environment, which is educative physical – sport environment based on, allows to direct mutual efforts at the search for the most effective means, forms and methods of the lessons with the pupils to increase their theoretical, physical, tactical,
psychological training in physical culture and accustoms them to physical culture and a healthy lifestyle.

One more aspect of the integrated educative physical – sport environment development prospects is in the evaluative activity of pupils’ physical readiness. For a long time the question of the quantitative scale of pupils evaluation change is being discussed on TV and in press. Different variants are offered: to introduce 10-12 points system of evaluation, to have no points at all.

Held by us survey among the teachers of physical culture of Khabarovsk Krai showed that 70.8% of the respondents are against the system without any points while teaching physical culture. The reason for this is that many children would consider physical culture to be a lesson which they can attend whenever they like, there would be no opportunity to stimulate the motional activity (evaluation stimulates, disciplines), there would be no normative base for examination.

Introduction of the system without any points into pupils’ physical upbringing, undoubtedly, would be a progressive step. In spite of the fact that the main aim of physical upbringing at school is a pupil’s physical culture formation, many teachers still work according to a traditional practice. Evaluating the progress they stress the fulfillment of educational normatives and pupils’ physical readiness increase. The use of the system without any points in physical culture will let pupils have equal opportunities in mastering motional skills and not worry if they can’t fulfill this or that control normative.

Education should form a free, ready to make decisions citizens. The important conditions for this are freedom and a responsible choice experience of the subjects of education. That is why the integrated educative physical – sport environment gives opportunities for the following: for the realization of the variability principle in the choice of a kind of sport by the pupils (different kinds of sport, physical culture or health-improving activity), depending on their demands and abilities in case of the base component of physical culture preservation; for the choice of motional activity regime, depending on the physical state and motivation to achieve sports results (but not less than three times a week); for the choice of the opportunity to develop in some kind of sport or motional activity; for different organizational forms of the training process introduction (groups formation according to the interests, organization of some lessons as an extracurricular activity); for the ability to choose co-operations of a comprehensive school, physical training clubs for children and teenagers, sport schools for children and teenagers and others in order to combine the potential of material - technical sports basis and a pedagogical staff.

The prospects of the integrated educative physical – sport environment development are also significant during the scientific –methodical and upbringing process projection, planning, organization and analysis will constantly be held diagnostics, monitoring and self- examination; if a social infrastructure of municipal education will be mobilized to physical–sports environment development in a region.

Mentioned above conditions, which form the base of physical – sport environment at schools of the northern rural regions, allowed to improve children’s and teenagers’ psychophysical state and to achieve definite sport results.

The main aim of the educational policy is in modern conditions – provision of high quality of education on the basis of its fundamental nature and compliance with the actual and perspective demands of a personality, society and a state. In this case increase the demands to physical culture teachers’ professional competence in higher educational establishments, which provide the organized system of physical upbringing in a definite higher educational establishment and influence the formation of students’ (who are the future specialists) healthy life style.

Today the urgent for Far Eastern region is the problem of students’ adaptation. The students come to towns from small settlements (city type settlements, rural territories). Besides there is a tendency of health state level decrease and the students’ insufficient physical training in all regions of a country. Fulfilled by us medical documentation analysis (2008–2011) in Pacific State University (PSU) in Khabarovsk revealed statistically reliable increase in students quantity who form a special medical group (10,1 %, 13,5 %, 15,9 %, p<0,01) and those who are exempt from
physical culture lessons (4.1%, 5.8%, 8.5%, p<0.05) in dynamics with the previous academic year.

We revealed that as the adaptation of the students from city type settlements or rural territory correlates with their attitude to physical culture and sport and with the desire to attend physical culture lessons and sport clubs in a higher educational establishment or not, it would be comfortable for them to live in town if they have a formed at school need for systematic physical culture lessons and a qualitative organization of educational-upbringing process of physical upbringing in a higher educational establishment. A reliable correlation between the desire of the students to attend sport clubs, fitness-centers and their desire to stay in town after graduation proves that one of the important factors, which motivates young specialists to stay in small settlements, is sports health-improving industry development in them [9].

Students’ adaptation is more successful if it is based on their interest in physical culture and an opportunity to choose different kinds of motional activity depending on their demands (available physical kinds of sport, physical or health-improving activity).

Our research work studies physical culture lessons in a higher educational establishment, students’ interest in this form of obligatory motional activity and also factors analysis which provide effectiveness increase of physical upbringing in a higher educational establishment.

Held by us questionnaire survey among the students from Khabarovsk in Pacific State University (one of the biggest higher educational establishments in the Far East) showed that only 16.6% of young people want to take up physical culture at the lessons.

The analysis of the negative factors, influencing the students’ attitude to the lessons of physical culture, showed that from several factors offered to the students of all courses the most unsatisfactory appeared to be the following: 1) holding the lessons outdoors; 2) absence of kinds of sport that the students wish; 3) absence of enough games at the lessons; 4) absence of individual approach to students.

We analyzed the students’ answers (according to 5 points system) about their interest in lessons of physical culture and only 53.1% of students said that the lessons are interesting (the lessons were evaluated as “good” and “perfect”).

Evaluating the general opinion of the boys and girls on the questions of changes in physical upbringing in a higher educational establishment it was revealed that the most important for students are: 1) introduction of other kinds of sport into a program, taking into account students’ desire; 2) good sports equipment, sports base improvement; 3) transformation of Physical culture into an optional subject.

The rating of priority kinds of activity at the lessons of physical culture (from 8 offered kinds of health-improving and motional activity, having an opportunity to choose several variants) showed the following: the most important for girls are different kinds of fitness, for boys is important body-building; then students define specialized kinds of sport and health-improving exercises. Less important for students is fulfillment of control-normative demands of the program.

Analyzing the organization of the physical upbringing system in higher educational establishments specializing not in physical culture, it is necessary to mention, that it is almost similar with the school system: an obligatory form of lessons, almost the same curricular material (basics of basketball, volleyball, general physical training and others), educational normative fulfillment, the emphasis is made on physical form of a person (theoretical aspects of physical culture are studied partially, 6-8 hours a year), and poor material and technical basis (deficiency of gyms, swimming pools, sports grounds, sports equipment).

The research showed that in a higher educational establishment only 25.8% of students are satisfied with the lesson of physical upbringing. As a result, their insufficient interest in the lessons is revealed. For many students these lessons are the only way of motional activity. The absence of interest in the lessons leads to low-quality of exercises fulfillment, lack of physical loads. Meanwhile, the interest in systematic lessons is high among the students, who go in for sport clubs choosing the kind of sport or motional activity in a higher educational establishment.
Unfortunately nowadays there is a tendency to reduce free of charge sports clubs in higher educational establishments making them chargeable, which is determined by lack of financing. Sports clubs in higher educational establishments, where students go in for sport free of charge, are mainly interested in high sport results, that is why they prefer "promising" students, who are able to achieve results at the competitions. Sport health-improving work at the faculties, in spite of mass character of sport activities during a year, is mainly directed at quantitative statistical indices (the quantity of students who took part in competitions, sport activities; the results of some competitions and complex sports and athletics meetings) but not at qualitative indices and this determines absence of system at the lessons and students' training for competitions. It shows that some students participate only once in the competitions and it is achieved by means of subdean’s on sport efforts at the faculties but not by means of personal motivation and necessity of students in these competitions.

The experience of foreign countries shows that the most effective in higher educational establishments is not the system of lessons but conditions and motivation creation for independent work of students, going in for kind of sport they prefer (in big higher educational establishments physical–sports environment includes more than 80 free of charge clubs).

Thus the tendency of students’ poor health state and poor physical training influences the educational process in a higher educational establishment. That is why it is necessary to change traditional approaches to physical upbringing in a higher educational establishment intensifying humanistic orientation at student’s personality. It is necessary to grade negative factors of physical culture lessons and to increase the factors which reflect the demands and motivation of students. The increase of students’ positive motivation towards the lessons of physical culture in a higher educational establishment and their satisfaction with the lessons are the important indices of social effect of the integrated educative physical – sport environment.

**Conclusion**

The prospects of the integrated educative physical – sport environment in a region are determined.

1. The prospects of the integrated educative physical – sport environment are determined, which provide the optimization of pupils’ psychophysical state: the effectiveness increase of the school stage of “Presidential competitions” and the Olympiad in physical culture; evaluating normative systematization for each age group of pupils, taking into account the regional standards of physical training; balancing of the negative factors of natural and social environments, by means of physical culture programs development; estimation scale systematization at the lessons of physical culture; different forms of lessons, humanitarian technologies and programs creation which take into account pupils’ interests and demands.

2. The prospects of the integrated educative physical – sport environment functioning are determined taking into account the revealed problems that students have: adaptation of students from rural territories to a town by means of interest formation in physical culture; conditions creation for effectiveness increase of physical upbringing in a higher educational establishment; students’ positive motivation creation concerning the lessons of physical culture and the search for the ways of a negative motivation decrease; orientation to students’ satisfaction creation with the lessons of physical culture in a higher educational establishment as a social effect of the integrated educative physical – sport environment.

3. The principles of a regional educational policy are determined as objective and subjective factors of the integrated educative physical – sport environment development: the increase of cultural-educational level of population in a region; cultural-educational traditions of the region renewal and preservation; conditions creation for innovations in educational systems of a region; the demands of a region satisfaction in staff and an opportunity provision for a person’s continuous education in a region. It is stated that the search for the ways of development and satisfaction of a regional educational needs determines the opportunity of the integrated environment perfection in
two main directions: as a system of different types of educational, medical and social establishments co-ordination and as a system of interrelated educational programs on all stages of pupils’ and students’ physical culture education.

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Welcome!

The Baltic Society of Sport Sciences (BSSS) welcomes you for its 7th conference in Tartu, Estonia. This old university town hosts the BSSS conference for the third time. The organization of the annual conference is the shared responsibility of the Faculty of Exercise and Sport Sciences and the Doctoral School of Behavioural, Social and Health Sciences, University of Tartu. The University of Tartu was founded in 1632 and is the leading academic institution in Estonia. The predecessor of the Faculty of Exercise and Sport Sciences was founded 86 years ago, in 1928.

The annual event brings together the teaching staff, research fellows and doctoral students from the institutions of university-level education in the Baltic states and several other countries. Traditionally, the conference offers the opportunity for colleagues to learn about the research results yielded by others and to launch or renew cooperation projects. The format of the conference hopefully encourages academic discussions and interaction between the participants and renowned scientists who have been invited to deliver keynote speeches.

The conference traditionally includes competition for the award of young scientists, who get the chance to exchange ideas and establish contacts for developing their research projects. We have also planned to conduct during the conference the round-table meeting on doctoral studies in the Baltic and other countries for further cooperation in this field.

The conference is held in the Dorpat Conference Centre that has excellent facilities for a successful scientific meeting. The conference venue is located in the city centre, allowing easy access to several hotels, shops and restaurants.

We are looking forward to seeing you in Tartu, Estonia.

http://www.kk.ut.ee/et/7th-conference-bsss

Mati Pääsuke
Vice-president of BSSS, Chair of the Conference