

## Formation of professionally important qualities of students with weakened motor fitness using a health related and sport-oriented training program

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### Abstract:

The purpose of the work: analysis of effectiveness of trainings in sport section by health related program, oriented on formation of professionally important qualities for students with weakened motor fitness.

Material and methods: in the research students of main and preparatory health groups participated. We formed experimental group of students with weakened motor fitness (n=47, age 21.14±0.36 years). In sport section trainings, in this group special complex of exercises for attention, static exercises from Hatha yoga and breathing exercises by A.N. Strelnikova's system were applied. Control group included students with higher motor fitness (n=40, age 21.44±0.26 age). Statistical distinctions in age between control and experimental groups were not confident (p>0.05). For determination of weakened motor fitness we conducted six pedagogic tests.

Results: we worked out training program, consisting of four parts: exercises for attention, specially selected Hatha yoga static postures, breathing exercises and technical actions from chosen kind of sports. It was found that all indicators (left and right hands' strength, vital capacity of lungs, breathing pause after inhale, heart beats rate in rest, Romberg's test, Kopylov's test) statistically confidently (p<0.05–0.01) improved after pedagogic experiment. It was also found that level of students' motor fitness formation increased (p<0.05–0.01) by tests: long jump from the spot, chin ups on high bar, shuttle run 3 x 10 meters, run during six minutes, forward bents. It was shown that formation of personality's professionally important qualities increased statistically confidently (p<0.05) practically by all tested parameters, with the only exclusion: awareness of significance of own study for modern society.

Conclusions: The received data about motor fitness level formation and students' interest to physical exercises' practicing permit to plan physical culture classes. The purpose of such classes is to form personality's professionally important qualities: concentration of attention, interpersonal communication, resistance to stresses of different character, acquiring knowledge and skills in independent practicing of physical culture.

**Key words:** sport section, program, students, fitness, indicators, experiment.

### Introduction

Higher education shall ensure students' professional training and their ability to independently and consciously choose a kind of physical culture – sport functioning as an element of life and culture. Such choice is possible only if personality's physical culture has already been formed, which would ensure possibility of self development, self regulation, self control, self perfection, self cognition, self determination and self actualization in modern society. Many researchers note special importance of physical culture for higher educational establishments (Kudryavtsev, Galimov, et al., 2012; Kopylov, Jackowska, et al., 2015; Podrigalo, Iermakov, et al., 2015). Attention of scientists is directed at solution of the following problems: students' weakened health (Prusik, Prusik, Kozina, et al., 2013; McGready, Brookmeyer, 2013; Kozina, Z., 2015); negative trends of increasing the quantity of students- members of special health groups (Pivneva, Rumba, 2013; Dudko, 2015; Hadden, 2015); reduction of students' mean level of physical and functional fitness (Zhanneta, K., Irina, S., Tatyana, B., et al., 2015; Prosvirina, Kolokoltsev, Kolchanova, et al., 2015; Dolan, Hancock, Wareing, 2015). That is why we see it urgent to work out health related block in students' physical education system, which would be based on specialized trainings of one kind of sports. Such approach is rather effective. It is especially important for students, who had serious deviations from normal health already before entering higher educational establishment (Kopylov, Kokova, Polianskaia, 2012; Kopylov, Polianskaia, 2014; Holm-Hadulla, Koutsoukou-Argraki, 2015). In this aspect importance of school physical education system is evident. It is noted in researches, devoted to schoolchildren's motivation for formation of health culture and positive attitude to healthy

life style (Iermakova, 2013; Ivashchenko, Khudolii, Yermakova, et al., 2015); conscious attitude to physical culture practicing (Sniras, & Malinauskas, 2005; Iermakova, 2010; Ionova, 2013). Results of comparative researches of students' health permitted to establish that health related orientation of school gives more successful results: in comparison with traditional schools' pupils Waldorf schoolchildren have better indicators of physical and mental health, more developed cognitive abilities and personality's qualities (individual initiative, creativity, independence of decisions, cooperation with people, social mobility) (Ionova, 2015). Not less important for school physical education is choice of adequate to age means, methods and tests for physical fitness (Ivashchenko, Yermakova, Cieslicka, et al., 2015; Khudolii, Iermakov, Ananchenko, 2015; Khudolii, Iermakov, Prusik, 2015). All these, taken together, will permit to increase health level of school leavers as future higher educational establishments' students.

Alongside with it there are data that it is impossible to selectively improve physiological aspects of health in isolation from psychic and social-moral health (Brown, 2011; Kokova, Kopylov, 2015; Kozina, Iermakov, Kuzmin, et al., 2016). Therefore, for motor, psychic and social-moral components of health it is necessary to create specific programs. Such programs can completely differ from each other (Rengasamy, 2012; Kuzmin, Kudryavtsev, Kopylov, et al., 2014; Kuzmin, Kopylov, Kudryavtsev, et al., 2015). Probably it is due to this fact more and more factors, limiting effectiveness of physical education in higher educational establishments, have been being registered. (Dahlin, 2010; Zhelezniak, 2011). In this connection it is offered to completely reform physical education program in higher educational establishments and approach its tasks, content and methodic to medical-biological characteristics of students. High quality, methodically correct organization of such classes, their informational and emotional content are extremely important for students' active mastering of physical culture holistic potential. In its turn, rising of trainings' quality is in the plane of administration of education in higher school. Students note unsatisfactory quality and low level of trainings' methodic, monotonous character of classes and applied exercises, absence of understanding between students and instructors. In its turn, rising of trainings' quality is in the plane of education administration in higher school. Students note unsatisfactory quality and low level of training methodic and applied exercises; absence of understanding students and instructors (Yermakov, 1996). As per the data of Vilensky, & Petkov (2002) 18.2% of students think that quality of trainings can increase desire to actively include in physical culture - sport functioning. As per the data of Zajcev (1998) 5% of students give reasonable offers on organization of educational process, 14% - are not satisfied with organization of physical education in HEE and propose to completely reconstruct the whole system. Such low assessment of trainings quality by students requires profound analysis by HEE administrations and physical education departments.

In this connection we conducted complex researches on working out and realization of program for improvement of HEE students' individual characteristics (meaning students with reduced motor fitness). The basis of such researches was formed by health related trainings of one kind of sports (in our case – health related boxing). Such approach permitted to increase social moral health of students and opened some important regularities. For example, we found connection between some motor qualities' condition and students' socially significant qualities (Kudryavtsev, Galimov, 2013; Kuzmin, Kudryavtsev, Galimov, et al., 2014; Kuzmin, Kudryavtsev, Kopylov, et al., 2014). We found that correlation coefficient between these indicators was 0.44 with statistically confident values. Probably the registered correlation to large extent is conditioned by content of block on additional boxing training. In system of mastering boxing techniques students are put in conditions, which require the following: high commitment; collectivism; morality; constant concentration of attention; high emotional stability, supported by aesthetic principles; moral paradigm and cognitive aspects. Such approach is supported by researches of cultural substantiation of promising sport disciplines (Artamonova, 2008), protection and strengthening of youth's health (Ionova, 2013, 2015).

Our researches of students' with weakened motor fitness physical condition (Kuzmin, Kudryavtsev, Kopylov, et al., 2014) showed that they have relatively low level of speed-power qualities and endurance in comparison with students of main health group (Kopylov Yu.A., Kokova, Polianskaia, 2012). Considering these data we chose physical exercises and boxing techniques for improvement of insufficiently developed physical qualities. In boxing trainings criterion of applied orientation was directed to selection of physical exercises from kinds of sports, which can be used in everyday life, for entertainment and for health improvement. Criterion of students' interest to health related trainings in the whole shows students' readiness for mastering (by depth and by volume) of the offered material (Galimov, Kuzmin, Kudryavtsev, et al., 2014). On the base of the submitted criteria we worked out boxing training program for students with weakened motor fitness. Correctly built trainings in sport boxing sections significantly help to acquire control over emotions and feelings (Kolesnik, 2007; Ishioka, 2012; Okada, 2013; Schinke, Stambulova, Trepanier, et al., 2015).

However, at present time such form of special training is not widely used. Many aspects of such trainings have been out of serious scientific research up to present time. It concerns, in particular, health related boxing. With such approach program material can and shall be worked out in compliance with individual psycho-physiological characteristics of students (Kokova, Kopylov, 2014) who have different motor functioning levels, different workability and adaptation to physical loads (Siegel, 2009; Okada, 2013; Malinauskas, Dumciene, Mamkus, et al., 2014). In the frames of our research physical fitness is regarded as student's ability to

control own thoughts, feelings and motor actions. For this purpose in health related physical culture and sport functioning sport section trainings are implemented (Kudryavtsev, et al, 2012; Kudryavtsev, Galimov, Strelnikov, 2012). It is especially important to select adequate training programs for students with weakened motor fitness. In this case the recommendations on selection of physical education means, offered by us witness about need in accounting of students' individual-typological features in planned motor mode.

As a hypothesis we assumed that content of section boxing trainings shall be adapted to students' with weakened motor fitness psycho-physiological status. Such content of health related trainings significantly helps formation of physical fitness. Our idea can be explained by the fact that usage of trainings with elements of boxing permits to make training of new motor actions more interesting and emotional; shortens period of mastering of material; increases effectiveness of students' progress in discipline "physical culture". The purpose of the work is to work out program of formation of professionally important qualities for students with weakened motor fitness on the base of health related boxing trainings.

### Material and methods

In the research students of main and preparatory health groups participated. Every student was informed that he could give up participating in experiment at any stage of the research. We formed experimental group of students with weakened motor fitness (n=47, age 21.14±0.36 years). In section trainings of this group boxing techniques were used. Besides, we used special complex of exercises for attention, static exercises from Hatha yoga (Swami Vishnu-devananda, 1967) and breathing exercises by system of A.N. Strelnikova (Schetinina, 2011). Control group was composed of students with higher level of motor fitness (n=40, age 21.44±0.26 years). Statistical differences by age between control and experimental groups were unconfident (p>0.05).

The researches were approved by Committee on Ethic of Siberian Federal University.

For determination of students with reduced motor fitness we used six pedagogic tests: 30 meters' run from high start (seconds); long jump from the spot (centimeters); chin ups on high bar (quantity of times); shuttle run 3 x 10 meters (seconds); forward bending from sitting position (centimeters); run during six minutes (see table 1).

Table 1. Formation of main motor qualities of students with low and higher motor fitness (M ± m)

Tests	Group		Differences	Confidence of differences	
	Low fitness	Higher fitness		t	p
30 meters' run from high start (sec.)	4.3±0.5	4.2±0.6	0.1	0.13	>0.05
Long jump from the spot (cm)	195.2±9.5	240.1±10.0	44.9	3.26	<0.01
Chin ups on high bar (times)	7.2±2.0	12.8±1.9	5.6	2.03	<0.05
Shuttle run 3 x 10 meters (sec.)	8.2±0.4	7.4±0.3	1.5	3.00	<0.01
Forward bending from sitting position (cm)	8.4±1.7	12.0±1.2	3.6	2.11	<0.05
Run during six minutes (meters)	1284.2±111.4	1564.4±109.6	312.2	2.00	<0.05

Analysis of results showed that low motor fitness is accompanied also by relatively low level of other indicators. And vice versa: high indicator of one of motor qualities is followed by high indicators of other qualities. The only exclusion from this rule is indicators of 30 meters' run from high start, where such regularity was not registered. This fact can be explained by high genetic predisposition of quickness.

#### *The methods of the research*

*Assessment of indicators:* strength of right hand (kg); strength of left hand (kg); breathing pause at inhale (seconds); vital capacity of lungs (liters); heart beats rate in rest (b.p.m.); Romberg's test (seconds); Kopylov's test (seconds). Right and left hands' strength was measured with hand dynamometer "DK-45" in three attempts with intervals between them of 20 seconds. The best result was registered. Vital capacity of lungs was determined with dry-air spirometer "CC-34". This procedure was fulfilled thrice with intervals of 30 sec. Breathing pause at inhale (Shtange's test) was conducted in the following way: the tested inhales deeply and exhales in sitting position (in volume approximately 80% from maximal), then he again inhales and close nostrils with fingers. Maximal time of pause is measured. Stopwatch is switched on at the end of inhale and switched off, when breathing is started.

*Assessment of formation of personality's socially significant qualities:* collectivism, respect to people, activity, moral position, civil position, love for work, creative activity and commitment. For assessment of formation of personality's socially significant qualities by questioning method of Blair, Golovina, Kopylov (2008) students were proposed to assess statements about their personalities' features. Every statement was assessed by 5 points' scale. In total 24 statements were in the questionnaire. After calculation of points, gathered by every student, we determined level of personality's socially significant qualities' formation.

*Assessment of motor qualities' formation* (strength, quickness of movements, dexterity, flexibility, speed-power indicators) was fulfilled with the help of tests by methodic of Arosev, Mejkson, Liubomirskij (1989), which are reliable and informative.

In the course of the researches, in processing of the received data we determined the following: mean arithmetic (M); mean square deviation ( $\pm m$ ); mean error of mean arithmetic (s). Confidence of differences of mean values was determined by t-criterion of Student.

*Organization of the research:* the research was being conducted during 2011 – 2014. Pedagogic experiment was fulfilled on the base of pedagogic faculties of higher educational establishments of Moscow and Krasnoyarsk. Medical workers (from medical dispenser) and physical culture teachers were involved in the research. In total 68 training sessions (twice a week) were conducted.

We worked out methodic and content of program of section trainings, which permitted to formulate the following tasks:

1. Cultivation of interest to boxing and ability to hard work;
2. Comprehensive physical development;
3. Strengthening of health;
4. Study of theoretical principles of boxing;
5. Training of boxing techniques and tactic at far distance.

Physical training of boxer-novice is one of the most important tasks and is regarded in boxing practice as foundation, required for sport achievements. At boxing trainings different exercises for health strengthening and for main physical qualities (dexterity, quickness, strength and endurance) were used. The trainings were built on principle of gradual complicating and increasing of physical load. Exercises were selected, considering their comprehensive impact on trainee's organism. When planning the content of trainings instructor shall consider basic principles of general didactic – “from simple to complex”, “from known to unknown”, “from mastered to not mastered”.

Boxing training system for students with weakened motor fitness is oriented on individualized training; it is simple for mastering and facilitates simultaneous and uniform development of motor qualities. This system attaches students to regular physical exercises' practicing, forms their interest to such trainings.

## Results of the research

Testing of motor qualities' formation level in students with weak physical fitness showed the following: (see table 2).

Table 2. Motor qualities' formation level in students with weak physical fitness at the beginning and at the end of pedagogic experiment (M  $\pm$  m)

Tests	Testing		Differences	Confidence of differences	
	Initial	Final		t	p
30 meters' run from high start (sec.)	4.31 $\pm$ 0.5	4.32 $\pm$ 0.6	0.01	0.01	>0.05
Long jump from the spot (cm)	195.2 $\pm$ 9.5	235.4 $\pm$ 9.8	40.2	2.95	<0.01
Chin ups on high bar (times)	7.2 $\pm$ 1.1	10.6 $\pm$ 1.2	3.4	2.08	<0.05
Shuttle run 3 x 10 meters (sec.)	8.2 $\pm$ 0.2	7.6 $\pm$ 0.2	0.6	2.14	<0.05
Forward bending from sitting position (cm)	8.4 $\pm$ 1.1	11.6 $\pm$ 0.9	3.2	2.25	<0.05
Run during six minutes (meters)	1284.2 $\pm$ 93.2	1557.1 $\pm$ 95.1	272.9	2.05	<0.05

After pedagogic experiment we received the following results (see table 1). We registered improvement ( $p < 0.05 - 0.01$ ) of indicators of the following tests: long jump from the spot, chin ups on high bar, shuttle run 3 x 10 meters, run during six minutes and forward bending from sitting position. Time of 30 meters' run did not change statistically confidently. Probably absence of changes in quickness is genetically determined by students' predispositions to such motor quality (Gurevich, 2008). Analysis of data, received after pedagogic experiment permitted to find the following changes of motor qualities in percents (see Fig. 1).

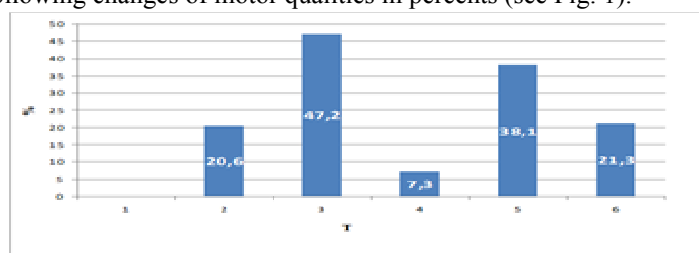


Fig. 1. Changes of tests' indicators in the course of pedagogic experiment: 1 – 30 meters' run; 2 – long jump from the spot; 3 – chin ups; 4 – shuttle run 3x10 meters; 5 – forward bending; 6 – run during 6 minutes. T – tests

Analysis of the received data showed that the highest improvement was registered in chin ups on high bar (in average by 47.2%). At second place there was flexibility indicator (forward bending, in average by 38.1%). Improvement in long jumps from the spot was, in average, by 20.6%. 6 minutes run indicator improved in average by 21.3%; indicator of shuttle run 3x10 meters – in average by 7,3% indicator of 30 meters' run improved in average by 0.2% (for the period of pedagogic experiment this indicator did not change statistically confidently). Analysis of results of students with weakened motor fitness after pedagogic experiment showed the following: application of boxing elements with breathing exercises and Hatha yoga static postures permitted to significantly improve motor qualities of students. In table 3 we present comparison of experimental group data with indicators of students, who initially had good motor fitness.

Table 3. Formation of main motor qualities in students with low and high motor fitness after pedagogic experiment ( $M \pm m$ )

Tests	Groups		Differences	Confidence of differences	
	Low level	High level		t	p
30 meters' run from high start (sec.)	4.32±0.6	4.20±0.6	0.12	0.13	>0.05
Long jump from the spot (cm)	235.4±9.8	240.1±10.0	4.7	0.34	>0.05
Chin ups on high bar (times)	10.6±1.2	12.8±1.9	2.2	0.98	>0.05
Shuttle run 3 x 10 meters (sec.)	7.6±0.2	7.4±0.3	0.2	0.56	>0.05
Forward bending from sitting position (cm)	11.6±0.9	12.0±1.2	0.4	0.27	>0.05
Run during six minutes (meters)	1557.1±95.1	1564.4±109.6	7.3	0.05	>0.05

Analysis of Table 3 data showed, that in both groups indicators of motor fitness did not differ statistically confidently. Thus, boxing trainings in group with weakened motor fitness increased tests' results to the level of group with initially higher indicators.

*Assessment of physical condition indicators:* the data of initial and final testing are given in table 4. It was found that all tested indicators statistically confidently improved ( $p < 0.05-0.01$ ).

Table 4. Functional indicators of students with weak physical fitness at the beginning and at the end of pedagogic experiment ( $M \pm m$ )

Indicators	Testing		Differences	Confidence of differences	
	Initial	Final		t	p
Right hand strength, kg	49.2±0.89	53.0±0.83	3.49	2.87	<0.01
Left hand strength, kg	45.5±1.00	48.7±1.07	3.2	2.18	<0.05
Vital capacity of lungs, l	3.2±0.08	3.5±0.07	0.3	2.82	<0.01
Breathing pause at inhale (sec.)	54.2±1.15	58.5±1.11	4.3	2.69	<0.01
Heart beats rate in rest, b.p.m.	71.6±2.24	64.8±2.12	6.8	2.20	<0.05
Romberg's test, sec.	32.1±2.12	42.6±4.15	10.5	2.25	<0.05
Kopylov's test, sec.	15.2±0.53	13.6±0.48	1.6	2.24	<0.05

Positive changes of functional indicators of students with weak physical fitness permit to use boxing trainings as one of effective categories in system of students' training by discipline "Physical culture". Probably, boxing trainings set increased requirements to functional fitness. That is why students' organisms respond to training load by quick changes in different organs and systems.

*Formation of socially significant qualities of personality:* after pedagogic experiment with participation of students with weak physical fitness we received the following results (see table 5). We found that practically all qualities improved confidently ( $p < 0.05$ ); the only exclusion was awareness of significance of own studying for society.

Table 5. Socially important qualities of students with weak physical fitness at the beginning and at the end of pedagogic experiment ( $M \pm m$ )

Qualities	Testing		Differences	Confidence of differences	
	Initial	Final		t	p
Collectivism	2.4±0.3	3.4±0.3	1.0	2.36	<0.05
Awareness of own labor significance for society	2.3±0.5	2.5±0.7	0.2	0.23	>0.05
Ability to hard work	2.8±0.4	4.2±0.5	1.4	2.19	<0.05
Respect of people	3.4±0.5	4.6±0.3	1.2	2.06	<0.05
Creative activity	2.7±0.4	3.9±0.4	1.2	2.12	<0.05
Commitment	2.6±0.4	3.8±0.4	1.2	2.12	<0.05

Thus, the conducted research revealed principle possibility of purposeful formation of professionally important qualities in students with reduced motor fitness in process of boxing trainings. Application of worked out by us methodic permits to form most of personality's socially important qualities.

### **Discussion**

The received data about approaches to improvement of students' physical fitness supplement researches of other authors (Pivneva, Rumba, 2013; Prusik, et al., 2013; Podrigalo, et al., 2015). Authors note need in consideration of trainees' individual characteristics (Jagiello, et al., 2014; Kozina, Iermakov, 2015; Kozina, 2015; Iermakov, Arziutov, JagieĤo, 2016). With it important significance is acquired by formation of health culture (Vilensky, Petkov, 2002; Iermakova, 2011; Ionova, 2015), by purposeful development of professional-applied skills and abilities (Kosyns'kyi, Khodinov, Khrypliuk, et al., 2013), by formation of personality's psychological characteristics (Kozak, et al., 2002; Korobeynikov, et al., 2003, 2010; Gorelov, Kondakov, Belikova, 2013). In this connection it becomes evident that it is necessary to increase students' motivation for physical culture – sport functioning. It can be regarded as one of priority direction of educational process's perfection in HEE (Iermakova, 2010; Kosyns'kyi, et al., 2013). Not less important is development of youth's interest to physical culture (Stoliarov, Kudriavcev, 1998), effective administrating of youth's physical education and physical training (Yurchyshyn, 2015; Zaporozhanov, Borachinski, Nosko, 2015), orientation of students' physical education on formation of healthy life style (Kuzmin, et al., 2015), perfection of program of students' physical education (Kopylov, Kokova, 2014; Kuzmin, et al., 2014). Methodically correct organization of such trainings, their emotional and informational intensity are extremely important for students' active mastering of physical culture's value potential.

Results of the conducted research permitted to specify the data about prospects of students' more effective and conscious participation in improvement of main health indicators through practicing of definite kind of sports (Gorelov, et al., 2013; Giovanis, Aschenbrenner, & Erdmann, 2013; Ottoboni, Russo, Tessari, 2015). It permits to positively influence on medical-biological and psychological-pedagogical health indicators (Purzycka, Prusik, Bohdan, et al., 2011; Eynon, Banting, Ruiz, et al., 2014; Levandovskaya, & Prusik, 2014).

Alongside with it the worked out program implies construction of trainings on the base of one kind of sports with breathing gymnastic and Hatha yoga. In this case realization of program of individual characteristics' improvement in students with weakened motor fitness on the base of trainings in sport section shall be maximally approached to their specificities and be of individualized character. Content of physical culture functioning and directly physical culture lessons shall include exercises from different kinds of sports, facilitating formation of different aspects of students' health.

Our approach expands information about possibilities of application of Hatha yoga exercises (Gorelov, et al., 2013). Application of boxing as a mean of youth's health improvement is presented in researches (Lennox, 2012; El Ashker, 2012; Ottoboni, et al., 2015; Scandurra, 2015). The authors show potentials of social organization of boxing clubs' functioning on example of young people, who attend boxing clubs every day after classes in educational establishments. For them boxing is a way out from frustrations, and a key to adaptation with social medium.

For the first time we worked out content of boxing trainings for students with weakened motor fitness. We received new information about possibility of health improvement, considering individual psycho-physiological characteristics of students with weakened motor fitness. It permits to substantially improve spectrum of medical-biological and psychological-pedagogic indicators. The received data permit to outline new approaches to formation of educational process, considering specificities of students with reduced motor fitness. We can affirm that traditional educational process can not completely solve the tasks, faced by pedagogic staff. It is witnessed by the fact that significant quantity of students differ from mean-statistic levels by a number of indicators.

### **Conclusions**

The worked out program is recommended to be used for improvement of professionally significant qualities of students with reduced motor fitness on the base of sport section's trainings. Experimental program of trainings consists of four parts: exercises for attention, specially selected static postures (asana) from Hatha yoga, breathing exercises and boxing techniques. All static exercises (postures) are to be fulfilled in sequence (one by one). Breathing exercises are fulfilled after static Hatha yoga postures in sitting on heels position.

The pedagogic experiment, conducted with students, who had weakened motor fitness, showed the following:

a). All tested indicators (right and left hands' strength, vital capacity of lungs, breathing pause at inhale, heart beats rate in rest, Romberg's test, Kopylov's test) statistically confidently ( $p < 0.05-0.01$ ) improved after pedagogic experiment;

b). Formation of students' motor qualities increased ( $p < 0.05-0.01$ ) in tests: long jump from the spot, chin ups on high bar, shuttle run 3 x 10 meters, 6 minutes' run, forward bending. Time of 30 meters' run did not change statistically confidently;

c). Formation of professionally important qualities of personality confidently ( $p < 0.05$ ) improved practically by all tested qualities with the exclusion of awareness of own studying significance for society.

#### *Practical recommendations*

The worked out boxing component can be used in physical education process at higher educational establishments; in different forms of physical exercises' practicing; for training of physical education specialists at faculties of physical education of pedagogic institutes.

The received data about formation of students' motor fitness and their interest to practicing of physical exercises permit the following: to plan physical culture lessons with aim of formation of personality's professionally important qualities (concentration of attention, interpersonal communication, resistance to different stresses, ability to independently practice physical culture); to work out new technologies of students' training on the base of presented in this research scientific approaches.

#### **Conflict of interests**

The authors declare that there is no conflict of interests.

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