

Original Article

Student learning in Physical education in Russia (problems and development perspectives)

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Abstract This paper considers some of the most acute issues in the field of physical education of students of the Russian Federation and the countries of North America. Analysis of publications of Russian and foreign scientists revealed the following problems: a low level of physical health of young people entering universities; insufficient logistics base; absence of a unified assessment system of students' physical fitness; significant differences in the curriculum. The purpose of the research is to find the most effective forms of organizing physical education training sessions taking into account all these negative factors. The authors conducted a comparative study with two groups of the first year students: one group (students from Siberian Federal University – SibFU) participated in sports specialization program; the second group (students from Krasnoyarsk State Medical University – KrasSMU) was trained according to an individualized program of physical education. At the beginning of the academic year, the fitness test results showed that SibFU students outperformed ($P < 0,05$) KrasSMU students. At the end of this academic year the tests indicated a slight increase in the development of basic physical skills and functional vigour of SibFU students. KrasSMU students' level of development of physical skills and functional vigour rose significantly ($P < 0,05$ and $P < 0,01$) during this academic year. Thus the results of the experiment show that an individualized program of physical education is more productive for conducting training sessions during the first year of studies.

Key words: Physical education; higher schools; syllabus, students; physical qualities; functional well-being; sports-based approach; individualization.

Introduction

The survey of publications of leading American and European scientists in the field of physical education of personality allows us to draw disappointing conclusion about a significant underestimating the role of physical education in the preservation of young people, students and schoolchildren health. According to K. Hardman, physical education turned out to be under threat almost in all regions of the world today. Permanent reduction of the time devoted to physical education classes in the curriculum, budget restrictions, lack of material and human resources are the basis for the serious concern on the situation with physical education in schools and universities around the world. [9] Research done by the author finds out that physical education of students is not carried out in accordance with the curriculum, regulations or expectations of the heads of educational institutions in many countries. According to K. Hardman the highest percentage of deviations from the degree course scheme is identified in Africa (75%) and Asia (67%). U.S. deviation rate is equal to 26%, in Canada - 43% and in Europe - 13% [11]. Unfortunately, the data about the state of physical education of the youth (pupils and students) are not presented in the Russian Federation in his studies. In this regard it should be noted that physical education has some difficulties and numerous scientific publications about which Russian scientists are evidenced in our country [1; 6; 20; 23]. Thus, the aim of the paper is the study and interpretation of the existing problems in the organization of the process of physical education and the future prospects of its development in Higher Education Institutions in Russia and North America.

Analysis of the research papers of the North American scientists, such as K. Jenkinson, has shown that many students do not have knowledge about the health benefits of physical education and there are various organizational, psychological and other barriers which embarrass in the educational environment [12]. C. Barroso writes about the lack of administrative support, poor facilities and lack of sports equipment, the differences in the curriculum of various universities, lack of opportunities for teacher professional personal development of physical education in the United States [2]. Some concerns grow about a significant reduction of physical activity standards of young people and the growth of obesity among children and young people [10]. Despite the fact that one of the stated objectives of the US health care system is the increase of the number of

students who are actively engaged in physical activity. The significant progress in its implementation was not achieved as it was indicated by S. Fairclough [8]. M. Kilborn approves that the analysis of the content of training programs for physical education students from 10 different provinces of Canada allows a significant discrepancy between the stated objectives of the syllabus and its practical content to declare. [12] If the main stated objectives are: the orientation of young people on healthy lifestyles and physical increase in activity of students, so the practical content is devoted to the teaching of the individual sports technique. It should be noted that a significant sport popularization of educational process on physical education in schools and universities occurs not only in North America. So in Europe according to the point of R. Naul's view sport physical training is syllabus criteria of academic studies of in-depth study of technology in the program of one or more kind of sports and participation in sporting events is in force since the mid of 60-ies of the last century [18]. At the same time you can meet the authors' review of the scientific literature that does not approve the excessive sport popularization of physical education of schoolchildren and students. In their opinion sport is connected with the consequence of competition between children and adolescents that can lead to psychological problems and improvement of physical training will contribute to the harmonious personal enhancement. [16] It is noted some equality of activity in physical education classes. B. Warner asserts that in Canada physical education is only in football, basketball and volleyball in the majority of schools and universities and the classes consist of the preparation for a competition and competitive games. [25] In her opinion the lack of choice of form implementation of the classes and its uniformity is a significant cause of missing physical training classes by pupils and students. Kohl and Cook noted there are substantial differences in the state standards regarding to the time allocated directly to physical education along with differences in curriculum [14]. According to their data 44% school administrators report on the reduction of teaching time to physical education in order to increase the time for other subjects of study. Only 7.9% among comprehensive schools and 2.1% of institutions offer training programs that provide daily physical activity [15]. In this regard M. Chin says physical health and educational aspects of teaching physical education should give a subject second thought in schools and universities [5]. According to his point of view the school and university programs of physical education should be reoriented again primarily on the fight against global health threats of modern human - overweight and lack of physical activity. It is also necessary to develop similar criteria for monitoring and assessing the level of physical development of young people. Today, its own system of physical education assessment of students operates in every higher educational institution. Z. Beddoes encourages creating a system of overall ratings of physical education of students from various universities to analyze the level of physical development of young people [3]. At the same time it is necessary to change the trend of reduction of time for physical education in the educational institutions. There is a widespread belief that the decline in time spent on physical education and an increase in time to the study of other disciplines: mathematics, physics, etc., leads to the improvement of success level. S. Trost shows that a comprehensive review of research shows the other side that the progress remains the same or decreases in this case. The improvement of success level can be achieved by increasing the time allotted for daily physical activity of schoolchildren and students. [24]

Survey results of foreign publications of many experts from the United States and Canada suggest the attitude of excessive occupancy of physical education academic programmes by specific exercises from different kinds of sport at the expense of improving orientation of physical education of young people. The results of the national survey of the scientific literature show a different idea. Most Russian scientists consider a sports-oriented physical education of pupils and students is the only way out of the difficult situation in which physical education remains today [1]. In the Russian Federation according to M.V. Osychenko, mass practice of physical education in high schools is focused only on achieving a certain physical condition level of students to the detriment of spiritual and value consciousness and creative style of thinking of young people [22]. T.V. Skoblikov notes that in the 90-th in our country there was a degradation of material-and-technical equipment of the process of physical education in the educational institutions. This process has had a significant negative impact on the emotional content-training component which greatly impoverishes and limits the attractiveness of physical training for young people [23]. According to A. Yu. Osipov [20], there is the fact that in the majority of Russian higher educational institutions teachers orient students to pass a test in the subject of "Physical training" and they are not engaged in the formation of specific knowledge, skills and competencies that enable young people to maintain and strengthen the level of their physical health]. There is a serious problem of low level of motivation of young people to regular physical training. Due to these negative circumstances it becomes necessary to create an efficient system for attracting students leading a healthy lifestyle and regular physical activity as it was indicated by A. Bolotin [4]. Many scientists consider certain sport popularization of educational process of physical training of students is an effective way to overcome existing difficulties under these circumstances. Some experts believe that the sports-oriented approach will help to replenish the reserves of the national team in various sports at the expense of students who are actively engaged in physical culture and sports. [6]

The main conclusions of experts about the state of physical education system in higher educational institutions in North America and Russia are presented in Table 1.

Table 1. Data of the state system of physical education in the North American and Russian universities.

Parameters	North America (USA and Canada)	The Russian Federation
The level of theoretical knowledge of students concerning the role of physical education	Insufficient	Insufficient
The level of physical health and physical fitness of young people entering higher educational institutions	Low	Low
The level of physical activity of students during training	Inadequate	Inadequate
Material and technical resources	It is not complete, but corresponds to the main request	It does not meet the demands
Implementation of the state educational standards and curriculum	Implementation depends upon the position of the university administration	It is mainly performed
Form in which a teaching process is conducted	Generally the sport classes are basketball, football, etc.	It depends on the position of the university administration and the material and technical resources
Strategic pathways of development of the system of physical education of young people	Individual programs of physical education - the fight against obesity and lack of physical activity	Sport popularization of physical education – realization of classes based on different kinds of sports

Material & methods

Analysis of published data shows that to the modern and the most effective forms of physical training of students the specialists of North America include individualized form of physical education of young people. The Russian scientists propose greater use of sport popularization of physical education. However, some experts expressed a different point of view to solve the problem of reducing the level of physical activity and motivate young people to regular physical training and sports. According to it the sports-specific approach is not able to solve the problem completely. And talk about a significant advantage sport popularization of physical education over other forms of training is premature. A number of studies analyzing the effectiveness of various forms of physical training of students of Russian universities are: sports specialization, modular learning, blended learning, individual programs do not let a significant advantage of any form of classes realization on the other to approve. [20] According to some scholars who are A.I. Zavyalov and D.G. Mindiashvili this fact is explained by significant differences in the methodological orientation of the educational process on physical education in various universities, the lack of a unified model of education and syllabus [17]. The studies of A.Yu. Osipov state, for example, about significant differences in the use of sports-oriented approach to physical education in various universities of Krasnoyarsk [19].

In connection with these circumstances scientists have conducted studies on the analysis of the effectiveness of these forms of physical education of the individual in the context of increasing the level of development of basic physical qualities and functional readiness of young people who have entered the universities. The studies were conducted in the major universities of Krasnoyarsk: Siberian Federal University (SFU) and Krasnoyarsk State Medical University named after Professor V.F. Voyno-Yasenetsky (KrasGMU). For the study 200 young men were selected randomly who are the 1st year course students of different majors and specialties with 100 students from each university. SFU students were engaged in physical training programs for sports-orientated approach to the organization and realization of classes. This approach is a specific conversion of sports technology teaching to the techniques and tactics of sport for training chosen by students. According to S.A. Doroshenko, a class will enhance the physical preparation of young people in the period of study in high school on the basis of this approach [7] Young people were invited to attend physical training within sports specialization, such as volleyball, basketball, soccer, etc., according to their choice. KrasGMU students were engaged in syllabus including a certain amount of muscle loading taking into account the initial level of physical health and functional readiness of young people. Thus, the total volume and intensity of the students performed physical exercises was limited in view of the functional state of young people and it did not depend on the teacher's position which is often subjective. [21] Classes included a range of general developmental exercises, jogging and walking, outdoor and sports games. To analyze the effectiveness of forms of realization the classes, the authors used a set of tests of control, physical education teachers used to assess the level of physical development and functional proficiency of students. Development of physical power was assessed by the number of pull-ups on the bar, the speed - time to overcome the distance of 100 m, flexibility - lean forward in a sitting position with the fingers touching the floor, endurance - time to overcome 3000 meters, test which includes 30 squats at maximum pace. This test is widely used in the practice of sports medicine and

pedagogy. It consists of 30 deep knee bends in the shortest possible time. It is necessary to measure the students' heart rate and blood pressure to obtain the results. The measurements are done before doing knee bends and right after them. The authors used computed tables of Professor A.I. Zavyalov to calculate a more informed measure of the body's response to physical activity - cardiac output [17].

Results

At the beginning of the first term the test results showed a significant ($P < 0,05$) advantage in the development of basic physical qualities of students of SFU comparing the students of KrasGMU. At the end of the second term tests only showed a slight increase in the level of development of basic physical qualities and functional proficiency of SFU students involved in the program of various sports specializations. Level of development of physical qualities and functional training of the students of KrasGMU involved in the framework of individual proportionment of physical activity was significantly ($P < 0,05$ and $P < 0,01$) increased during the first and the second terms. Thus, after two terms of classes, indicators of physical development and functional training of the both student groups are virtually leveled out. Complete test results are presented in Table 2.

Table 2. Test results of students of SFU and KrasGMU.

The physical quality	The students of SFU		The students of KrasGMU	
	At the baseline	End of study	At the baseline	End of study
Power	12± 3	14± 4*	9± 3	14± 3***
Speed (s)	14± 2	13± 3*	16± 4	13± 4**
Flexibility (cm)	8± 2	10± 3*	6± 3	10± 2***
Endurance (min)	14± 4	13± 3*	16± 3	13± 2**
functional fitness(l)	5,4±0,4	5,2±0,4*	5,7±0,4	5,1±0,4***

Note. * - Inaccurately, ** - accuracy- $P < 0,05$, *** - accuracy - $P < 0,01$

Discussion

A significant advantage of the level of physical development of students at the beginning of the SFU research should not be a big surprise as for admission to the various sports specialization young people go through a selection process. The selection process consists of performing benchmarking for general physical training by the students: pull-ups, running, jumping, etc. It is obvious that those young people, who have passed the screening successfully and were enrolled in certain sports specialization will have a higher level of overall physical development. As the condition of the material and technical resources does not allow all students to attend their chosen specializations (number of limitations attending the sports halls), teachers are screened out most of the students who do not have a sufficient level of physical development. And the results obtained at the end of studies suggest that KrasGMU students who have lower levels of physical activity at the beginning of the course were able to compensate this difference during one year. According to the authors studies this result were possible due to the implementation of an individual approach to physical training with students of KrasGMU expressed in the organization of the control over the level of physical activity obtained by young people, the optimum selection of physical exercises and their correct proportionment. At the same time, students of SFU could not optimally develop their physical qualities as well as specialized classes which cause the study of a large number of specific technical elements peculiar for the sport. As the level of technical skills of the most students does not meet the optimal parameters as indicated by recent studies [19], teachers have to spend a lot of time to the study and development of technical elements to the detriment of the development of basic physical qualities. Thus, the level of development of basic physical qualities and functional fitness of students in both groups were about the same. Consequently, at the beginning of training (on the 1st course) it will be preferable to use customized forms and programs of physical education of young people for the significant increase in the level of their physical and functional training. The authors do not encourage abandoning sport forms of physical education - sports majors, etc., but it is recommended to use them on the 2-3 year course of training when the level of physical development of the majority of students will meet the optimal parameters.

Conclusions.

Analysis of scientific research conducted by both Russian and foreign specialists demonstrates that the modern world seems to have an obvious underestimation of major role of physical education of young people in terms of strengthening their physical health and prevention from different diseases. Considerable differences of curriculum standards have been identified, reduction of time devoted to physical culture in educational institutions, unreasonable reducing of financing and another difference. At the same time research proves the considerable worsening of physical health of modern young people, lack of motive activity and a considerable amount of schoolchildren and students, suffering from obesity. Sorting out these problems in possible in case of searching and introduction new effective forms of organization and implementation of physical education classes with young people in the educational process, that is specified in both Russian and foreign specialists research.

A comparative analysis of efficiency of the similar programs in terms of increasing a level of physical development of young people of the first course in higher schools showed that the highest rate in development of physical qualities is provided by the individualized programs of physical education. These programs allow measure out the level of student physical activity to the major degree and concentrate on systematic development of those physical qualities, the level of development of which do not correspond to the optimal parameters. Students who are engaged in sports based approach programs, turned out to achieve insignificant level of development of physical qualities. It can be explained by the insufficient level of technical preparation of young people to these types of sports. Teachers are forced to spend considerable time on technical elements study and improvement instead of curriculum prescribed purposeful development of student basic physical qualities.

Conflicts of interest - If the authors have any conflicts of interest to declare.

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