

Physical Fitness Monitoring as an Enhancing Means of Specialist`s Training Quality in Higher Education Institution

Zinaida Kekeeva^a, Vladimir Burlykov^a and Sergey Proshkin^a

^aKalmyk State University, Elista, RUSSIA

ABSTRACT

The relevance of the investigated problem is due to the needs of modern society in the preservation of the physical health of the nation, development of physical education in higher school. The purpose of the article is to disclose theoretical and methodological basis of organisation of physical fitness monitoring of a specialist as a means of enhancing the quality of his/her training in higher school. The major method of the study of this issue is physical fitness monitoring of a specialist as a means of improving the quality of vocational training in higher school, allowing to identify the features of his/her physical fitness. The main results of the article are the analysis of national and foreign scientific and methodical literature on the organization of physical fitness monitoring, for example at Kalmyk State University, students` physical fitness testing, a comparative analysis of the results, which led to the findings of the organization forms of work on the preservation and strengthening of young people health. The materials of the article have practical value in solving economic, social, demographic and cultural problems of the society in creating a stable motivation for a healthy and productive lifestyle, formation of the necessity in physical development of young people based on physical fitness monitoring as a means of improving the quality of vocational training at school and university.

KEYWORDS

Monitoring, activity, fitness, specialist, culture

ARTICLE HISTORY

Received 21 April 2016
Revised 30 May 2016
Accepted 22 June 2016

Introduction

The relevance of the investigated problem is caused by the needs of modern society in the preservation of physical and mental health of the nation, the development of physical education system in educational institutions, promotion of a healthy lifestyle. In today's world the need for knowledge and understanding of physical education as a value-humanistic bases of reproduction, safety, quality of life and activities of the individual in the

CORRESPONDENCE Zinaida Kekeeva ✉ kekeeva-zo@yandex.ru

© 2016 Kekeeva, Burlykov and Proshkin. Open Access terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>) apply. The license permits unrestricted use, distribution, and reproduction in any medium, on the condition that users give exact credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if they made any changes.

conditions of a complex and contradictory development of human civilization is very urgent. The state policy on sports education of the population in all countries is aimed primarily at young people.

The physical health of modern youth is the major concern which contributed to the study of theoretical and methodological bases of monitoring the formation of recreational physical culture in the society. This is due to the growth of importance of the problem of self-identification in the process of familiarizing to physical education as a means of disease prevention (including mental health) among young people. This very youth physical activity leads to a significant reduction in negative phenomena among the younger generation (stress, lack of exercise, drug addiction, etc.). It is a powerful factor and the mechanism of socialization. The main focus of these searches is to develop a permanent system, dynamic monitoring of the health and physical fitness of young people in the course of vocational training in high school. A competent physical fitness and propaganda of the value of physical culture contribute to restore the genetics of the nation, confront the demographic crisis and a crisis of consciousness, enhance and promote the spiritual and physical principles in an individual.

Students are the most vulnerable part of the youth who are facing a number of difficulties associated with an increase in the teaching load, low physical activity, relative freedom of college life, problems in social and interpersonal communication. Therefore, one of the most urgent and serious modern problems being faced by the society and the state is not just a problem of a healthy lifestyle of the modern youth and distraction it from antisocial manifestations, but also the alignment of social chances of young people through the formation of physical fitness as a means of improving the quality of specialist's training in higher education institutions.

Literature Review

In fact, modern educational practice in physical education does not fully justify social and personal expectations. University graduates in their majority are not active, independent bearers of values accumulated in the field of cultural development, which significantly limits the transfer of the acquired knowledge, practical skills, attitudes to culture, educational and professional work, life, leisure, lifestyle, attitude to health, lowers humanistic personal development in general. Educating active-positive attitude of young people cannot be successful without creating cultivating sports environment and developing interest in the sport.

Such researchers as M.Ya. Vilenskiy et al. (2000) outline that physical culture is the integral quality of an individual which is the condition and prerequisite for effective teaching and professional work, a generalized indicator of professional culture of the future specialist and the purpose of self-development and self-improvement. The well-known American educator J. Goodlad (2008) mentions that the intellectual, physical and spiritual personalities develop only in integration, a personality developed physically and mentally is successful in general. According to the theory of S.L. Rubinstein (2000), L.S. Vygotsky (2005), human activity is a factor that depends on consciousness, which regulates the activities by categories such as knowledge, motivation, needs, interests and goals. A specific feature of physical culture,



unlike other aspects of culture, is the focus at the same time both at "physical" in the human and socio-psychological aspects of his development. Influencing the physical body by a complex of specific tools and techniques, physical training also has a positive influence on the intellectual, emotional, spiritual sphere of the person by virtue of the unity and interdependence of the functioning of the material and spiritual principles in an individual. B.V. Endaltsev & S.A. Malashenko (2014) note that at present it is found that the use of exercise, developing physical endurance, can greatly accelerate the adaptive reactions to the work or the environment, increase performance.

In the process of physical education a person not only satisfies the need for physical education, but also generates interests, motives, feelings, norms and rules of human behavior. According M.V. Kuzmina & S.E. Lazareva (2004), moral education in the sphere of physical culture is aimed at the formation of such moral qualities as patriotism, a sense of responsibility for behavior, the ability to subordinate personal interests to those of the collective and society. Dedication, perseverance and tenacity, endurance and self-control, independence and initiative, courage and determination, the ability to overcome difficulties, and other character traits are successfully developed in the process of physical training and sports. An individual is active in the process of physical education and sports, he moves along the path of knowledge, develops and improves an individual system of physical self-improvement. On the other hand, a person grows in a culture and becomes its integral part, adopts rules, customs and habits, develops a model fund of the community and becomes a competitive person in the labor market. From the point of view of researchers M.V. Aleksandrova (2007) and Z.O. Kekeeva (2009), the country's transition to market economy makes the competitiveness of specialists in the labour market extremely important. In these circumstances, a person is an active subject in the labour market, he/she has the ability to freely dispose his primary capital - qualifications. In conjunction with the freedom to choose the sphere of professional activity, it gives him/her the opportunity to build a successful professional career. In modern multicultural society the individual's ability to design his/her social and career qualifications and improve physical health that is of particular importance. The solution to this problem is quite complicated for modern youth.

In many foreign countries recreational and sports activities organically combine and unite efforts of the state, government, public and private organizations, institutions and social institutions.

For example, overseas there is a variety of programs and strategies for the organization of sports activities for young people. In England more than 459 million pounds are invested on the development of physical education and sport in educational institutions, more than 750 million - on the development of supporting infrastructure. According M. Donovan, G. Jones & K. Hardman (2006), the state investment policy is based on the results of medical research of the nation, obesity, sedentary life and lack of sport of high achievements.

In the US sports schools special attention is paid to the cultivation of the body and health culture. In American public or private schools a significant place in training is taken by religion and sports, which are the main subjects. The credibility and recognition of students and teachers in the society is largely defined on the basis of their achievements in sports. Researchers V. Donlić, O.

Marušić Štimac & S. Smojver-Ažić (2005) point that a good sports school attracts the attention of sponsors and it increases the opportunities for enhancing athletic achievements. Besides maintaining health, employment and defense capabilities sport also plays a significant role in public life. This role is primarily focused on education and training values. Sport is very important for the formation of a personality. Sport allows children to develop human qualities and convey genuine human values (19).

According to M.O. Cavalli (2010), the rational organization of the integrated control system will help to understand functioning of adaptive processes in the human body and what is the price of a training load, how they affect the level of physical and mental performance, the state of psycho-emotional sphere and health of students. Currently, according to J. Seghers, K. Martelaer & G. Gardon (2009), an urgent necessity for scientific substantiation of methods and technologies to improve the efficiency of the process of physical education for young people is observed, taking into account the development of physical abilities and psychological personal traits that contribute to the development of leading and significant qualities at the labour market.

In other countries sport at its all levels is a universal mechanism of the improvement of citizens' health by self-realization of a person and development, as well as a tool in the fight against anti-social phenomena. The global trend is also a huge increase in interest to sport of the highest achievements which reflects fundamental shifts in modern culture. To a certain degree, the processes of globalization were stimulated by the development of modern sport, especially the Olympic.

It should be noted that the most important is the social order of comprehensive monitoring of health status and quality of life of the young generation. So, B. Lown (1998), professor of cardiology at Harvard School of Public Health notes that modern medicine focuses on acute diseases and emergency assistance, rather than prevention of diseases and preservation of health. Major and rigorous preventive measures are important for the health maintenance.

Thus, a healthy lifestyle in general, physical preparedness of an individual for life is becoming a social phenomenon, a unifying force and a national idea, promoting the development of a strong state and a healthy society. In many foreign countries, recreational and sports activities are naturally combined and they unite the efforts of the state, its government, public and private organizations, institutions and social institutions.

Research Methods

In this article research methods of organization of physical fitness monitoring a specialist as a means of improving the quality of vocational training in higher school are the analysis of scientific and methodical literature, questionnaires, testing physical fitness of students, a comparative analysis of the results which led to the findings and conclusions about the peculiarities of the organization of physical training and introducing them to the sport in the education of healthy lifestyles among young people. The purpose of the study is the organization of monitoring of physical fitness of specialists as a means of enhancing the quality of vocational training in higher school. Research objectives is to carry out the analysis of national and foreign scientific and



methodical literature on the organization of monitoring of physical fitness, to evaluate and analyze the results in the design of the educational process, contributing to the creation of conditions for the development and self-realization of student's personality in higher school. Research stages include diagnostic, informative and activity ones which enabled the correction of physical fitness of the students on the subject "Physical training" for the physical culture teachers in higher school.

Results and Discussion

Designing and implementation of monitoring the condition of physical health system is the task of the state in social policy which allows not only to analyze the situation, but also to make informed management decisions to improve the health of students during their professional development (Resolution of the RF Government N 916, 2002). Professional personal development requires a change in the severity of socially and professionally significant features. Psychologists consider an individual as a complex structured unity where each of its constituent elements is interconnected with all the other and functionally dependent on the entire structure as a whole.

In the Republic of Kalmykia researches on the assessment of physical health monitoring results of students in higher school are conducted (Burlykov & Burlykova, 2015). Currently, monitoring as a specific kind of research covered the most diverse spheres of human activity: ecology, sociology, psychology, politics, economics, education (Alekhina, 2007; Lexin, Seliverstov & Shvetsov, 2000; Samozhenkov, 2001; Mayorov, 2005; Holodnova, 2000; Tsgoev, 1997). Monitoring is targeted and action-oriented, i.e. it is applied to the specific objects and processes for solving specific tasks. Monitoring is an ongoing process being organized on a sufficiently prolonged period of time, allowing to record the state of the object at certain points, to assess trends and processes and carry out the forecast of development.

Modern educational process in universities is characterized by a large amount of mental stress on the background of the adverse environmental and social factors, a high level of psycho-emotional overload of modern life, having a negative effect on the functional status and health of students. The physical health condition of the young generation representatives raises serious concerns which contributed to the scientific search for theoretical and methodological plan in the system of formation of physical training of students' youth (Baranovskaya & Vrublevskaya, 2005; Kuzmina & Lazareva, 2004). The main direction of the given searches is due to the development of the system ensuring a constant, dynamic monitoring of the state of health and physical fitness of students, depending on the capabilities of rational implementation of the system of collection, analysis and processing of the received data within the management of monitoring studies (Baranovskaya & Vrublevskaya, 2005; Izaak, 2006; Kuzmina & Lazareva, 2004).

Thus, at the present time it is necessary to develop and implement a system of monitoring the process of physical education for continuous monitoring, evaluation and analysis of its conditions and results to the design and implementation of the educational process, creating the conditions for the development and self-realization of the student's personality. The proposed physical fitness of university students of monitoring technology developed by us

with a support of such researchers as L.A. Semenov (2007) and S.P. Mironova (2004), consists of 3 interrelated components: diagnostic, informative and activity-based.

The study was conducted within the framework of the intra university grant of Kalmyk State University from 2014 to 2015 at the Department of Physical Culture and had 3 stages.

The main content of the first stage was:

- to design the content of the physical fitness monitoring (based on the analysis of scientific and methodical literature data);

- to conduct the survey of students (in order to identify the degree of awareness about the state of physical fitness). About 150 students (boys and girls) of 1-2 courses studying in different faculties of Kalmyk State University took part in the survey. A conducted questionnaire revealed problems in the lack of sports and recreational activities in a large number of students: 87% of respondents expressed the view of the positive role of physical culture and sport for the preservation and strengthening of health, however, 66% of girls and 53% boys do not participate in it. Regular necessity for an active motor activity is typical for only 24% of girls and 42% boys;

- to organize testing of the students` physical fitness. The results showed that the overall level of development of physical qualities in students is assessed as low, which primarily can be attributed to the lack of attention of the teachers to the focused impact on the growth of the results due to the lack of information about the real state of physical fitness of students.

At the same time, physical activity among young people contributes to a significant reduction of negative phenomena among the young generation (stress, lack of exercise, drug abuse and so on). The negative trend of recent years in the health status of the working population of Russia is largely due to increasing alcohol abuse of the population, which increases mortality from diseases of the cardiovascular system, liver, gastrointestinal tract, domestic and industrial injury rate. It is a powerful factor and the mechanism of an individual socialization. Physical culture in the system of higher professional education should be aimed primarily at improving health, formation of the motivational sphere of students on the use of means of physical culture in everyday life.

During the second stage the obtained information underwent computer processing with the help of the program "Passport of Physical Fitness of Students of Kalmyk State University" (State Registration Certificate of computer program № 2015615492) and was presented in tabular and graphical format for the analysis at the administrative and pedagogical level. After processing of the received results and their interpretation, the development of guidelines for students was carried out, aimed at correcting their physical fitness, adapting of the rating system of checking students' learning activity in educational discipline "Physical Training" for teachers of physical education and students of all fields and specialties.

All this made it possible to determine the direction of further activity in the organization of educational process on physical training and to carry out the development of targeted planning on the basis of the revealed level of physical fitness of students. The following categories of students demonstrating low, medium and high levels of physical fitness were identified. Students of the first



group had sessions which were of correctional orientation, and other categories of students were offered to take part in sports sections of Kalmyk State University.

Identified individual physical fitness level indicators allow teachers to develop a set of physical exercises aimed at correction of individual physical qualities, as well as recommendations for the students' independent work.

Information and methodical provision included preparation of teaching and diagnostic materials: questionnaire forms, protocols of assessment of physical fitness level and "diaries of physical fitness", as well as the development and production of information stands containing materials by the method of execution of tests and rating scale. The study found that there is a reduction of the number of students with a low level of development of physical qualities, on average, by 15%. There is a decrease in the proportion of young men not coping with regulatory requirements in the manifestation: speed qualities by 7%, endurance-10%, power qualities- 19%. The growing rates of physical fitness are typical for the girls as well: the proportion of girls showing a low level of high-speed display qualities decreased by 10%, endurance - 11%, power characteristics- 11%.

Comparative assessment of the indicators of monitoring students' assessment (Autumn 2014- Spring 2015) on the test tasks on model physical training program (Kekeeva, 2009) revealed a statistically significant trend of the results ($P < 0.05$). Based on the received data it can be stated with confidence that the physical culture and sport are essential in the education of students aimed at healthy lifestyle. However, at the same time, the practice of the organization of physical culture and sports in higher educational institutions points to the insufficient work to implement these features.

The analysis of the condition of the issue shows that the scientific and technological development of society makes new demands to the level of human physical condition. At present, the organization of the optimal human motor mode ceases to be a private matter and is becoming a social value.

Conclusion

Organization of the process of physical education of students through the use of physical fitness monitoring technology enables to improve the state of the physical fitness of students and the quality of their training at the university. This fact actualizes the necessity to exercise monitoring for management decision-making in the process of physical education of students at the university. The obtained data would contribute, with appropriate implementation, improvement of the effectiveness of the impact of means of physical culture on the process of improving the quality of vocational training in higher school.

Physical education of students of higher schools includes the formation of the physical culture of an individual and the ability to use a variety of tools of physical culture, sport and tourism for the preservation and strengthening of health in the process of training of specialists for the future professional activity. Personal involvement of students in the development of professional activities as a part of human culture not only provides a simple reproduction of already known social experience, but its enrichment at the expense of the creative development of the personality of the future specialist.

Preservation and strengthening of health of young people is one of the most urgent problems of our time, and it has not only a scientific and practical interest, but also contributes to the solution of economic, social, demographic and cultural tasks of society which is reflected in the development strategy of physical culture and sports. Thus, the result of physical fitness monitoring should be creation of a sustainable motivation for a healthy and productive lifestyle, formation of the necessity in the physical self-improvement. To assess the monitoring of the physical fitness of youth in the conditions of fitness centers special literature of national and foreign researchers has been analyzed. Regular physical exercises not only improve health and functional status, but also increase the efficiency and emotional tone.

Acknowledgements

The results published in the article were obtained with the assistance of the colleagues - V. V. Gabunshina, S.N. Marsunova, D.N. Syukieva and D.P. Tserenova. Their participation enabled the research team to investigate the condition of physical fitness of students - the most important criterion of the physical capacity of the individual and society as a whole.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Zinaida Kekeeva, Doctor of Pedagogy, Associate Professor of the Psychological Department, Dean of the Faculty of Pedagogical Education and Biology of Kalmyk State University, Elista, Russia.

Vladimir Burlykov, PhD, Associate Professor of the Department of Physical Education and Medical and Biological Disciplines at the Faculty of Pedagogical Education and Biology of Kalmyk State University, Elista, Russia.

Sergey Proshkin, PhD, Associate Professor of the Department of Physical Education and Medical and Biological Disciplines at the Faculty of Pedagogical Education and Biology of Kalmyk State University, Elista, Russia.

References

- Alekhina, S.V. (2007). *Psychological monitoring – a tool for the development of education: a guide for students of the psychological faculty*. Moscow: MSPPU, 342 p.
- Aleksandrova, M.V. (2007). *Support of teachers' career in the territorial educational system: monograph*. Novgorod: Novgorod State University named after Yaroslav Mudriy, 238 p.
- Baranovskaya, D.I. & Vrublevskaia, V.I. (2005). The role of physical culture in the formation of motivation to physical culture in students. *Acute Problems of Physical Culture and Sport for all at the present stage: materials of the VIII International scientific sessions on research results in 2004*. Minsk: BSUPHC, 13-16.
- Burlykov, V.D. & Burlykova, E.B. (2015). Organization of the process of physical education of higher school students on the basis of physical fitness monitoring results. *Innovative processes of transformation in the field of physical culture, sport and tourism. Proceedings of the XVIII International scientific and practical congress-conference*. Vol. 1. Novomikhailovskiy, 28-33.
- Cavalli, M.O. (2010). *Considerations on contemporary physical education and sport. Should PE and sport change?* Direct access: <http://www.efdeportes.com/efd140/should-physical-education-and-sport-change.htm>
- Donlić, V., Marušić Štimac, O. & Smojver-Ažić, S. (2005). Odgojni aspekti sporta - slika o sebi i problemna ponašanja obzirom na uključenost i uspješnost djece u sportskim aktivnostima. *VI konferencija o sportu Alpe-Jadran*. Zagreb, 197-207.



- Donovan, M., Jones, G. & Hardman, K. (2006). Physical education and sport in England: Dualism, partnership and delivery provision. *Kinesiology*, 38, 16-27.
- Endaltsev, B.V. & Malashenko, S.A. (2014). Improving adaptation capabilities - a basic direction of physical training of military specialists. *Theory and Practice of Physical Culture*, 9, 20-23.
- Goodlad, J. (2008). *What is called school*. Moscow: Education, 476 p.
- Holodnova, L.F. (2000). *Sociological monitoring of the regional educational system: based on the studies of Moscow region*: PhD Thesis. Moscow, 136 p.
- Izaak, S.I. (2006). *The status of physical development and physical fitness of Russian young generation and their correction on the basis of population monitoring technology*: PhD Abstract. St.Petersburg: SSUPHC, 55 p.
- Kekeeva, Z.O. (2009). *Preparation of the teacher in the cultural and educational space of the university: theory, methodology, practice: monograph*. Volgograd: VSSPU Press "Brake" Publishing House of the SGMP's "Change", 256 p.
- Kuzmina, M.V. & Lazareva, S.E. (2004). Problems of physical education in the educational institution and some ways of their solution. Acute problems and prospects of sports education in higher education institutions. *Proceedings of the international scientific-practical conference*. Volgograd, 35-37.
- Lexin, V.N., Seliverstov, V.E. & Shvetsov, A.N. (2000). On the formation of the state system for monitoring socio-economic, national-ethnic and political situation in the regions of the Russian Federation. *Project TESIS "Regional policy directed at reducing socio-economic and legal asymmetry"*. Moscow-Novosibirsk: Ekor, Siberian agreement, 70-83.
- Lown, B. (1998). *Lost art of healing*. Moscow: Kron-Press, 367 p.
- Mayorov, A.N. (2005). *Monitoring in education*. Moscow: Itellect-Centre, 424 p.
- Mironova, S.P. (2004). *Pedagogical monitoring as a condition of efficiency increase of the management of process of students` physical*: PhD Abstract. Yekaterinburg, 25 p.
- Regulation on the all-Russian system of monitoring the state of physical health, physical development of children and youth: Resolution of the RF Government from 29.12.2001 №916 (2002). *Official documents in education*, 4, 67-69.
- Rubinstein, S.L. (2000). *The basics of general psychology*. St.Petersburg: Publishing House "Piter", 712 p.
- Samozhenkov, V.M. (2001). *Monitoring and management of the investment process at the industrial enterprises*: PhD Thesis. Kislovodsk, 145 p.
- Seghers, J., Martelaer, K. & Gardon, G. (2009). Young people's health as a challenge for physical education in schools in the twenty-first century: the case of Flanders (Belgium). *Physical Education & Sport Pedagogy*, 14(4), 407-420.
- Semenov, L.A. (2007). *Monitoring of conditional physical readiness in educational institutions: monograph*. Moscow: Soviet Sport, 168 p.
- Tsgoev, T.F. (1997). *Development and research of the automated environmental monitoring management system: the case of the North Ossetia-Alania*: PhD Abstract. Vladikavkaz, 23 p.
- Vilenskiy, M.Ya., Zaitsev, A.I., Ilyinich, V.I., Kislitsyn, Yu.L., Kovalenko, V.A. & Shcherbakov, V.G. (2000). *Physical education of students*. Moscow: Gardariki, 385 p.
- Vygotsky, L.S. (2005). *Psychology of man`s development*. Moscow: Publishing House Sense, Publishing House Eksmo, 1136 p.