

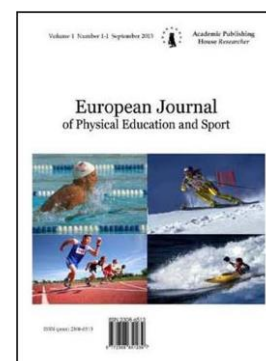
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Actualization of the Professionally Applied Physical Training of Students with Disabilities

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Abstract

The requirement of readiness for the professional activity of a modern specialist is the expressed application of means of physical culture, related to the character of the forthcoming work. Aspects of application became the theoretical foundation for achieving the necessary level of professional readiness of future specialists, development of professionally important qualities that contribute to a more successful vocational training and further its improvements.

The best way to ensure the optimal development of physical qualities, the formation of applied motor skills that meet the requirements of a particular production, is the professionally applied physical training (PAPT).

Practice shows that in educational institutions of higher education there are poorly developed concepts and methods for the use of PAPT tools and the choice of the classes program, the rational acquisition of training departments, the operative control under the optimal physical load, sufficient in volume and adequate for students with disabilities in health status. Students with deviations in health status of temporary or permanent nature require significant restrictions on physical activity taking into account the performance and functional features, many not fully ready to perform the standard training applied physical training.

In this regard, there is a need to address the issue of the formulation of the specific practical recommendations for the construction of professionally-applied physical training for students with disabilities.

Keywords: students, application, readiness, profession, health, physical culture, system, pedagogy, education, university.

1. Introduction

In the modern period of the development of Russian society, there is a huge number of professions that determine specific demands on workers, and the number of them is constantly increasing. An evidence of this is the current transformations associated with the enlargement of higher education institutions, the transfer of the higher education system to a two-level basis, and the establishment of multi-disciplinary universities (Viktorov, 2017).

In this regard, an essential role is played by ensuring the necessary level of preparedness of future specialists for professional activity: physical development, physical preparedness, functional preparedness. The influence of professional-applied physical training on each of the components of

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the formation of readiness for work in the educational process of the university is constantly being understood, reevaluated, leading to a more holistic view on vocational training (Korovin, 2005).

2. Materials and methods

Under the readiness for professional activity we understand, following the authors (Arkhangelsky, 2000; Bepalko, 2004; Zagvyazinsky, 2008; Nine, 2012; Neverkovich, 2013 and others) – that this is not an innate quality, but a result of special training, indicating that the subject achieves an appropriate level of professional activity, which is the basis for the manifestation of competence and the formation of competitiveness.

The process of man's readiness for professional activity was adjusted along with the growth of civilization, culture, a change in the methods of production, and a natural-science picture of the world. Constant comprehension, re-evaluation leads to a more holistic view of the creation and replenishment of the able-bodied society, and physical culture is included as the basic factor in the formation of motor skills and skills necessary for the realization and expansion of the person's capabilities.

Physical culture was formed as a socially determined region of the general human culture, which is a qualitative, systemic, dynamic state of the person, characterized by a certain level of knowledge and abilities, motivational and value orientations acquired as a result of upbringing and self-education and integrated into practical life, physical and psychophysical health on the basis of medical experience of individual and public disease prevention, effective programs and the health of the population (Balsevich, 2000, Stolyarov, 2001 and others).

In accordance to this, the side of physical culture claimed by society, integrating with education, provides a social need for full physical preparation of the younger generation for work – the main condition of human existence. The result of this integration became the modern physical education.

Physical education is an integral element of physical culture, characterized by widespread experience in the development of an individual and social strategy for mastering knowledge and skills of physical self-improvement, the formation of the need-motivational sphere of an individual (Guzhalovsky, 1999; Natalov, 2001 and others). The process of physical education, as a specially organized pedagogical influence within various educational institutions, made it possible to single out the problem of vocational education as a separate goal of education, aimed at successfully mastering of the chosen profession.

Physical education is the concept of the development of the higher professional educational system, which allows to effectively realize the health and educational potential of physical education, the didactic principle of activity, to build a logical system for the formation of needs, determine the strategy of prophylactic health work, thereby embody a social cultural experience affecting various aspects of man's attitude to his professional training. Traditional emphasis on the physical (motor) component is shifted towards the education through the holistic potential of the physical culture.

The main aspects of the interrelation of physical education and readiness for professional activity which stand on the basis of the unity of training mechanism and adaptation to work are: a) the importance of physical culture in the development of working capacity; b) correction of professional disproportions in a physique; c) prevention of occupational diseases; d) socialization of the individual in the working group. Thanks to this, it is possible to prepare the person for the forthcoming professional activity in the lessons of physical culture by combining various exercises, elements or integral types of physical activity.

The tasks of developing professionally significant physical qualities, teaching of applied motor skills are solved in the professionally applied physical culture (PAPC), as a form that lies in the depth of physical education, on the basis of the principle of the organic connection of physical education with work activity (Il'inich, 2000; Kabachkov, 2010; Korovin, 2011).

Without reducing the positive value of PAPC, we note that this is a physical culture in the whole variety of its means, serving the goals of comprehensive physical training of a specialist (Zholdak, 2000; Menschikov, 2012 and others). However, in this case, PAPC becomes the main, rather than an applied means of professional training and the term application»is used without a strict certainty.

In physical education, the application of physical upbringing is presenting the discovered fact of its suitability and usefulness to the chosen professional activity.

Practice shows that the scientific and methodological support of this process for students with disabilities does not always give the proper effect: on the one hand, students are limited to performing applied educational activities within the range of their health possibilities. On the other hand, the teachers do not possess sufficient level of knowledge necessary for understanding the essence of the pathological processes occurring in the various body diseases, they show unreasonable passivity and inertia in this important work, which has a significant impact on the functional preparedness and, ultimately, on the readiness for the future professional activity.

In our work we give the author's definition of the term "applied physical culture education (APCE)" – it is a pedagogical process that is sufficient in scope and adequate professional and applied physical training, regardless of the factors and conditions of the chosen professional activity, capable of forming professionally in students with deviations in the state of health important qualities that contribute to successful functional preparedness, reflecting the increase in the range of adaptive capabilities of the body.

In conditions of enlarging of the universities, increasing specialties, it is difficult to highlight the most significant physical abilities, motor skills and habits, mental characteristics and personal qualities that ensure the effectiveness of a variety of professional activities, and, consequently, it is difficult to build a professional program for a future specialist (Kabachkova et al., 2015). This circumstance leads to increased attention to applied physical culture education (APCE) as all of the components of highly professional human stability can be fully realized only if there is an adaptation of the genetically conditioned capabilities of the organism to physical activity. In the context of our research, this fact will denote the success of pedagogical activity.

The specialized physical education is a unified educational space in the field of professionally-applied physical training, regardless of the state of health and the conditions of the chosen professional activity. Since the concept of the educational space is not new in pedagogy and is oriented toward the educational result (Cherepov, 2015), contrary to traditional practice, the authors believe that in modern realities the metaprofile approach should aim at stimulating the increase in the adaptive capacity for forming readiness for selected professional activities, including students with health disabilities.

The study of the labor peculiarities of future specialists who study in the teaching units of SUSU, and since 2016 in the new schools and institutes of the National Research University shows that three directions of training specialists coexist and interact within the university: technical, natural and humanitarian. Consequently, it is difficult to compose the recommendations on the formation of the necessary knowledge, physical and special qualities, abilities and skills that contribute to the student's readiness for successful professional activity. The reasons are: merging within the same educational unit of being previously various specialties; the requirements of many professions of similar qualities that can be trained by one method; The impossibility of covering the entire range of working professions with a limited contingent of teachers; The natural transition of students from one specialty to another during 1 and 2 courses of study.

The analysis of the composition of students medical groups at the South Ural State University shows the following pattern of the distribution of morbidity and, consequently, the restriction of physical education: first place – diseases of the musculoskeletal system (34,6 %), the second – cardiovascular system (19,2 %), the third – (15,4 %) respiratory organs, then (11,5 %) with myopia and visual impairment, i.e. the most important diseases for life support.

There is a sufficiently large number of students with diseases of the nervous system, the pathology of the digestive tract continues to increase intensively. Otorhinolaryngology, endocrine system (obesity), kidneys, skin, genitourinary system, oncology are common. There were also cases of lack of physical development and disability. About 22 % of students have from two or more negative deviations.

At the same time, it should be noted that there is an undefined number of students who have serious health restrictions, but who deliberately did not provide the educational institution with any information about their limitations of health opportunities.

Despite a wide range of available research on the positive impact of the organization of professional and applied physical education in educational institutions of a wide range of professional activities (V.I. Il'inich, V.A. Kabachkov, S.S. Korovin and others), technologies and

techniques that focus on the professionally applied physical education of students with disabilities are poorly developed.

The goal of the study is to modernize the readiness for professional activity by building a unified educational space for metaprofile physical education and to justify its effectiveness for students with disabilities.

In the study, students of SUSU (NIU) and South Ural State Institute of Arts named after P.I. Tchaikovsky referred to the main and preparatory groups took part. Well-known and widely used functional tests were used to assess the speed of adaptation of the body to physical activity or mainly showing the development of any quality.

Taking into the consideration that the physical training that underlies the MPE has a multifaceted and systematic impact on the body, Serkin's test was used as an integral criterion covering all aspects of the process, and for the purpose of timely correction, as well as for evaluating the functional state of the organism (three-stage respiration delay). Each stage of this sample unites the important categories of the functional state: 1 stage – physical possibilities, 2 stage – physical abilities, 3 stage – energy resources. This allows Serkin's test to be used as an assessment of the effectiveness of MPEs for readiness for selected professional activities (Yanchik, Yanchik, 2015).

In the 1-2nd semesters conditions are created for the formation of a unified educational space for the metaprofile physical education of students with disabilities. Taking into account the record of the individual opportunities, carried out according to morpho-functional indicators, the MPE is enriched with information about the features of physical training, physical exercise parameters, determining adaptive effect, improving physical fitness against the background of limited health opportunities.

In the 3-4th semesters, students of all medical groups using a variety of physical exercises, the content of which is selected taking into account health opportunities, rely on the information obtained at the previous stage of education. Such consolidation of knowledge forms, and knowledge – in action allows providing positive dynamics of morphological and functional capabilities and reserves of students with limited health opportunities, orienting them not only to mastering knowledge, but also to practical ways, models of activity development. Thus, students improve their physical condition and preparedness, improve their physical skills, and acquire skills of self-control and self-education. Elements of the uniform educational space of MPE are the forms of physical exercises that are regulated by the educational standard and independent occupations for the professionally applied physical training.

In the 5-6th semesters, the practical work on the basis of its own value position allows students to consolidate the special skills of metaprofile physical culture education, acquire the necessary and permissible professional and applied skills in situations requiring direct and compulsory participation, thereby fixing the close relationship of physical performance with a functional state of a person.

3. Discussion

We do not dispute the opinion of the authors (Dyakova, Mironov, 2015) who believe that it is HPC, being a means of complex treatment of various diseases and prevention of exacerbations, which remains the main method of training that contributes to the social adaptation of the body of students with limitations in health.

However, relying on the generalized data of domestic (Apanasenko, Popova, 2000) and foreign (Gudrun, Pauw, 1996) scientists, we come to the conclusion that a main part of metaprofile physical culture education for students with disabilities, as well as for students of the main medical group, is physical education and other forms of training activities. It should be understood that pedagogy does not have so many tools to influence the future professional, what is more, physical exercises and knowledge that allow them to be used, occupy a special place, including students from different medical groups in the activity of forming readiness for the profession, which makes physical culture the only means of participation in the healing process. This mechanism provides a selective increase in functionality, due to the constant impact on the body of physical activity.

When comparing the indicators of the level of physical readiness with the functional state of various body systems of students with disabilities, it is noted that the normative indicators of the morphofunctional development of the individual are not a reasoned reason for determining the

difference in the state of human health. This is justified by the fact that the basis for the separation of students into medical groups is based on the nosological principle, when the doctor does not take into account the level of physical preparedness. Despite the different approaches to the formation of medical groups, classes with such students are conducted without taking into account the optimization of physical activity in accordance with the normalization of the functional condition; therefore teachers at each department of physical education have the opportunity to develop their own program for conducting practical classes.

Based on the foregoing, it is objectively established that the results of physical development (anthropometric measures according to generally accepted indicators) of students of the studied educational institutions testify to the accordance with age norms. We agree with V.I. Zagvyazinsky (2010), that the rapid development of science and technology does not allow to provide the preparing of specialists in any educational institutions ahead of their time. Therefore, an essential principle of the vocational education system becomes the development of professional forms of thinking that determine attitudes toward the chosen profession, readiness for professional activity. That is why this direction is realized directly in the process of physical education with the disabled students through the development and improvement of physical qualities, motor abilities, which in turn stimulate the processes and functions of the body and body systems.

4. Results

The conducted Serkin's test showed significant differences ($p < 0.05$) in the first stage of the girls training (1-2 semesters) (Table 1) of CMG SUSU and CMG SUSIA and in the 2nd and 3rd stages of the test, which may indicate a sufficiently high aerobic capacity.

Table 1. Three-stage breath holding

University, group	Serkin's test		
	1stage	2 stage	3 stage
	BH, rest (s)	BH, after exercises	BH, recovery
SUSU, CMG (m)	86,5	38,9 %	73,6 %
SUSIA, CMG (m)	77,3	29,3 %	79,9 %
SUSU, CMG (f)	39,6	53,9 %	85,9 %
SUSIA, CMG (f)	36,7	31 %	62 %
SUSU, SMG, (m)	63,4	36,3 %	78,9 %
SUSIA, SMG, (m)	57,2	38,6 %	79,7 %
SUSU, SMG, (f)	32,5	42,8 %	67 %
SUSIA, SMG, (f)	31	46,3 %	74,8 %

The result of the first year of training shows that students of different groups often have different physical possibilities. However, the importance of the personal theoretical knowledge for the rapid adaptation of one's organism in difficult professional conditions and the awareness of the necessity of activity in the direction of the work of those systems of the organism that are not involved in the pathological process, contributes to the prophylaxis and strengthening of the whole organism. This becomes the first element of the unified educational space of metaprofile physical education, as well as the formation of preparedness for professional activity as a systemic effect.

In the 3-4th semesters, there are significant differences ($p < 0,05$) in the Serkin's test of the young men of the CMG SUSU and SUSIA from the results of the 1-2nd semesters at the third stage. This can serve as the evidence of an increase in the adaptive capacity of the body. As for students with various health problems, this means the formation of motor qualities in accordance with the functional capabilities of the body systems. Depending on the functional state, training ability and the course of the disease, the exercise stress was initially of low intensity, then- of average, thus this technique of conducting the lessons led to the fact that the organism of the practitioner had to adapt to the created conditions.

SMG SUSU students of both sexes in the sixth semester shows the higher results and significantly differ from their own results at the 2nd semester at all stages of the Serkin test. This convincingly indicates that SMG students have higher functional and reserve capabilities of the body by the end of the third year.

The obtained results allow to assume that within the Institute of Sport, Tourism and Service (ISTIS) established at SUSU, it is possible to form a unified educational space for metaprofile physical culture education, according to which a person's preparedness for professional activity is formed through physical training that promotes the development of basic physical qualities, functional stability and resistance of the human body. The process is being phased, at each stage it is supposed to conduct a certain pedagogical work, which is aimed at bringing the student to a higher level of adaptive capabilities of the body and, consequently, the formation of readiness for professional activity.

Our opinion coincides with the opinion of many scientists (Balsevich, 2008; Kazin, 2014; Moskovchenko, 2007 and others) that the adaptation of an organism is one of the conditions for not only differentiating the load, but also its optimization. Conducting the Serkin's test convincingly indicates that the common group results, regardless of gender and level of physical condition, shows a tendency to increase adaptive shifts and the adequacy of physical activity. In particular, in SMG groups, this is expressed in an increase of respiratory arrest at stage 2, which indicates that students with limited health abilities have been able to tolerate hypoxic conditions and economical work of the respiratory and muscular systems, thereby justifying the effectiveness of this approach for preparing readiness for future professional activities.

5. Conclusion

1. Applied physical education is the pedagogical process which transfers the values of professional physical culture, determines the formation of readiness for future professional activity, and has its own specific characteristics for students with disabilities, who engaged in physical culture and mass sports.

2. The specifics of the formation of the unified educational space of the APE is that it is not reserved within any particular branch of science, but it is distributed in many of its spheres to indicate the concretization of general methodological regulations, the substantive aspect of justifying factors, self-knowledge through the process of professional education.

3. The pedagogical functions of applied physical education for students of the common medical group and for students with disabilities coincide in the unity and continuity of the means and methods aimed at improving physical conditions, and that makes it possible to predict the realization of the main goal of professional education - the formation of readiness for the future professional activities.

4. Applied physical education is a new stage of the development of professionally-applied physical training, which forms readiness for professional activity during the work with students of various medical groups due to the adaptation of the body to physical activity, which is not related to specific professional functions, and not to the degree of expression (volume and intensity) motor activity.

5. The great importance in mastering the technique of applied exercises for students with disabilities, with parallel elimination of functional failure of organs and systems, improving the working capacity of the organism, has the opportunity to use mechanotherapy or work with simulators and exercises with their own weight, significantly increasing the effectiveness through the use of non-traditional means and methods in the process of studying with students of this category.

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