Physical education: taking into account the psycho-emotional state of students

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Abstract

Objective of the study was to justification for the application of techniques and strategies for managing students' emotional well-being in the context of physical education instruction.

Methods and structure of the study. A teaching experiment was carried out with a group of second-year male students (n=40) from the Mining Faculty of the Trans-Baikal State University. To enhance the physical fitness of students, a model for the modular planning of physical education classes was created, incorporating techniques and methods for regulating the emotional state.

Results and conclusions. The simulation of the educational process through the implementation of specific exercises designed to enhance and cultivate psychophysical attributes and the body's inherent adaptive capacities has proven to be a successful strategy for optimizing the physical education experience. This approach has also had a positive impact on the students' psychological well-being. The study's findings indicate a positive trend in the students' psychological state, cognitive abilities, and psychomotor skills.

Keywords: *physical education, students, psycho-emotional state.*

Introduction. Emotional stress during university studies causes a decrease in the adaptation processes in the body, has a negative impact on the physical and mental health of students. At the same time, as experts note, university graduates must have a high level of health and physical performance in order to carry out professional activities. In this regard, ensuring a balance of mental and physical performance is one of the main areas of organizing physical education at a university [1, 2, 4]. Experts have proven that psychoemotional qualities form the basis of students' mental performance. At the same time, the process of physical education causes tension in the psychoemotional sphere of students, therefore, according to experts, the traditional organization of physical education in universities does not rely on the psychophysiological capabilities of students. The adequacy of physical activity to the psychophysiological state of students is one of the factors in preserving the health of students. In this regard, when planning physical education and sports classes, the peculiarities of the psychophysiological state of students should be taken into account [3, 5, 6].

Objective of the study was to justification for the application of techniques and strategies for managing students' emotional well-being in the context of physical education instruction.

Methods and structure of the study. The pedagogical experiment was conducted with the participation of second-year male students (n=40) of the Mining Faculty of the Transbaikal State University. In order to optimize the physical education of students, a model of modular planning of physical education classes was developed using the means and methods of regulating the psycho-emotional state (Table 1).

Psychological and pedagogical support is one of the components of comprehensive control of physical education of students. Psychological and pedagogical testing was conducted in order to study the psychoemotional state, mental properties and psychomotor qualities of the students' personality. The following were used for the study: a) «Lemur-Tessier-Fillion Psy-

chological Stress Scale PSM-25» – an integral indicator of mental tension; b) «Spielberger-Khanin Test» – a person's emotional reaction to a stressful situation, a mental property of personality anxiety; c) «Munsterberg Test» – selectivity of attention, concentration; d) «Ability to psychophysiological self-regulation» – emotion management and the ability to control nervous and muscle tone.

Results of the study and discussion. The use of special exercises during the academic year aimed at increasing and developing the reserve adaptive capabilities of the students' body in regulating neuro-emotional stress had a positive effect on the dynamics of changes in the psycho-emotional state, mental properties and psychomotor qualities of the subjects' personality (Table 2).

The assessment of the stress level using the Lemur-Tessier-Fillion Psychological Stress Scale PSM-25 adapted by N.E. Vodopyanova at the beginning of the study revealed a low stress level, by the end of the study this indicator increased to the average level, the increase in indicators was 14,85%. If at the beginning of the study the result obtained indicates the state of psychological adaptation of the students' body to workloads, then at the end of the study the integral indicator of mental stress associated with the upcoming session indicates the need to use various means and methods in the educational process to reduce the neuropsychic stress of students. The dynamics of a person's emotional reaction to a stressful situation, the mental property of an anxious personality were studied based on the Spielberger-Khanin Test. According to the results of the study of situational anxiety in the subjects, it was revealed that by the end of the study there was a decrease in the number of students with a high level of situational anxiety from 17,39% to 12,25%. The positive dynamics was 41,96%. At the same time, by the end of the study, the number of students who endure the educational process in a normal psycho-emotional state increased from 52,61% to 64,18%. The positive dynamics amounted to 18,03%.

At the end of the study, the number of students with an inactive psycho-emotional state and a low level of motivation decreased from 30% to 23,57%. The positive dynamics amounted to 27,28%.

According to the results of the study of personal anxiety at the end of the school year, the indicators were distributed as follows: high anxiety level - decrease to 31,7% of subjects; average anxiety level – increase to 36,8% of subjects; low anxiety level – decrease to 31,5% of subjects. The obtained results indicate the need to use special tools and techniques in the process of motor activity during classes aimed at reducing psycho-emotional stress, which causes emotional arousal and adverse changes in the body of students.

The study of the dynamics of changes in the level of selectivity and concentration of attention in subjects was carried out using the «Munsterberg Test». When completing the test at the beginning of the study, students found 19,32±2,41 words in the test material, which indicates a below-average level of selectivity and concentration of attention among the subjects. Positive dynamics in this test is observed among the

Table 1. Modeling the educational process with a focus on optimizing physical education of students, taking into account their psycho-emotional state

The goal is to regulate the psycho-emotional state of students during physical education classes	
Modules	**Means and methods of regulation of psycho-emotional state**
Module 1 – focused on developing general endurance – optimizing the functional capabilities of the cardiovascular and respiratory systems	- sets of exercises aimed at developing the ability to voluntary muscle relaxation (for the muscles of the arms, legs and torso) (at the end of the main part of the lesson); - a set of breathing exercises according to the K.P. Buteyko method (the final part of the lesson)
Module 2 – focused on developing strength endurance and the vestibular apparatus – optimizing the functional capabilities of the neuromuscular apparatus	- variation of physical load when performing a set of Crossfit exercises (the main part of the lesson); - relaxation training method - focused on self-control of tension and relaxation of various muscle groups (the final part of the lesson)
Module 3 – focused on developing strength abilities – optimizing the functional capabilities of the neuromuscular system	- exercises for stretching and holding stretched muscles (stretching) (the main part of the lesson); - the method of autogenic training - focused on self-regulation of breathing when performing muscle tension (the final part of the lesson)
Module 4 – focused on developing speed-strength and coordination abilities – optimizing the functional capabilities of the neuromuscular system	- strict dosing of physical activity and rest intervals; - relaxation training method - exercises to relieve local muscle tension (the main part of the lesson); - psychophysical training method - the use of complex coordination exercises aimed at reducing neuro-emotional tension (the final part of the lesson)

Table 2. Dynamics of the psycho-emotional state of students during the formative pedagogical experiment

Control exercises (tests)		Baseline indicators (n=40)	Initial level	Final indicators (n=40)	Final level
Lemur-Tessier-Fillion Psychological Stress Scale PSM-25 (scores)		86	Low	101	Medium
Spielberger-Hanin test (scores)	Situational anxiety	51,4 38,9 27,4	High Medium Low	48,6 33, 29,5	High Medium Low
	Personal anxiety	49,6 39,4 32,7	High Medium Low	46,3 35,7M30,6	High Medium Low
Control exercises (tests)		Baseline indicators (n=40)	Final indicators (n=40)	Reliability of differences (p<0,05)	
Munsterberg test (number of words)		19,32±1,06	23,05±0,73	t=2,89 p<0,05	
Ability to psycho-physiological self-regulation	Resting heart rate (bpm)	71,25±1,55	64,29±1,24	t=3,52 p<0,05	
	Heart rate after the test (bpm)	70,9±1,51	63,23±1,35	t=3,78 p<0,05	
	Respiratory rate at rest (times/min)	19,68±0,77	17,31±0,56	t=2,49 p<0,05	
	RR after test (times/min)	18,25±0,59	16,04±0,37	t=2,10 p<0,05	

subjects by the end of the study. Statistical processing of the data revealed reliable differences (p<0,05), the average level of selectivity and concentration of attention, the increase in indicators was 19,31%. The study of the dynamics of the formation of skills to manage emotions and control nervous and muscle tone was conducted using the test «Ability to psychophysiological self-regulation». At the end of the study, positive dynamics is observed both in heart rate (HR increase: at rest – 10,83%; after the test – 12,13%) and in respiratory rate (RR increase: at rest – 13,69%; after the test – 13,78%). The positive dynamics of changes in heart rate and respiratory rate indicate students' positive mastery of psychophysiological self-regulation.

***C*onclusions.** Regulation of the psycho-emotional state of students based on the use of special exercises aimed at increasing and developing the body's reserve adaptive capabilities allowed optimizing the process of physical education of students. The results of the study can be useful in developing a job description for mining industry specialists when compiling characteristics of psychophysical qualities, as well as in organizing professional and applied physical training at the university.

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