THE INFLUENCE OF THE LEARNING PROFILE ON THE PHYSICAL AND PHYSIOLOGICAL DEVELOPMENT OF ADOLESCENTS

Sokolova Svetlana

Student, Belgorod State National Research University, Russian, Belgorod

Bogachev Roman

научный руководитель, Research Supervisor, Associate Professor, Belgorod State National Research University, Russian, Belgorod

Abstract. This scientific article analyzes the key indicators of the influence of the chosen training profile on the physical and physiological development of adolescents. As a result of the study, it was found that twelve-year-old children of a specialized training profile (cadet classes) have a gradual improvement in all characteristics of physical and physiological development.

Keywords: physical development, physiological development, adolescent, child development, learning profile.

Physical activity is fundamental to every child's development and it affects many aspects of their health. Thus, it is important to integrate physical activity into the lives of adolescents and lay the foundation for maintaining a healthy, active lifestyle throughout life [3, pp. 25-26].

Since in ordinary secondary schools the emphasis in education is on the study of general education subjects, and in schools aimed at developing the physical development of adolescents, namely cadet schools, children's health is primarily valued, acquired through the introduction of physical education lessons, medical examinations, etc.

The purpose of the study: to study the influence of the learning profile on the change in indicators of physical and physiological development.

We also analyzed two groups of teenagers. The control group – students of School 8 in Stary Oskol – group I, the experimental group – students of the cadet class of School 19 – cadet corps "Victoria", Stary Oskol – group II. The students were selected at the age of 11-12 years (6th grades).

The parameters of physical and physiological changes in adolescents were obtained and analyzed by conventional methods by measuring the main indicators of adolescents, such as: body length, cm; body weight, kg; chest circumference, cm [1, 2]. We analyzed indicators characterizing the state of the circulatory system, such as: systolic blood pressure, mmHg, diastolic blood pressure, mmHg, heart rate, beats/min) at rest and after physical activity. Blood pressure indicators were recorded by us using the Korotkov method, heart rate indicators were determined by measuring the pulse.

According to the results of the study, it was revealed that students of the cadet class showed significantly better results in both physical and physiological development. At the main stage, much attention was paid to the physical education of children. Students in the cadet class had a lot of physical activity throughout the entire week of training, students of the secondary school revealed

the presence of three physical education lessons per week, and computer use was also observed for more than 6 hours a day (Fig.1).
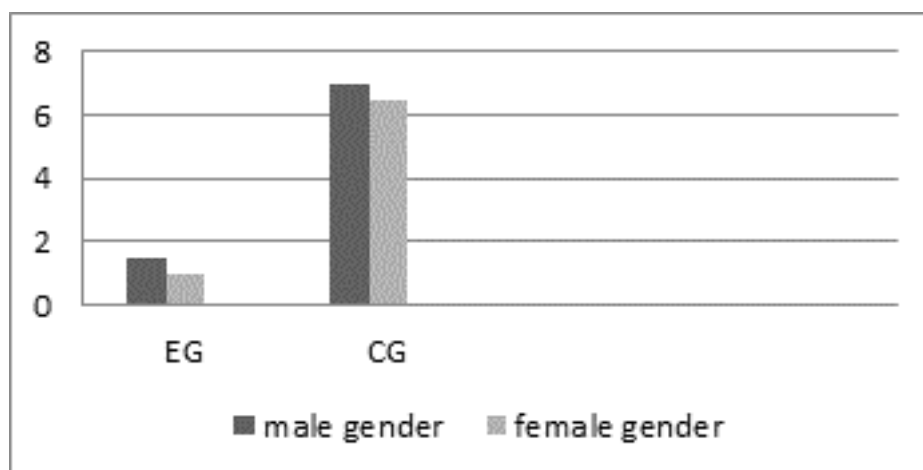

Figure 1. The duration of computer use and TV viewing among adolescents of the educational institutions under consideration

Since we previously proved that physical activity in adolescence contributes to rapid and high-quality physical and physiological development, students in the cadet class, compared with the second experimental group, were distinguished by an active and healthy lifestyle, interest in learning and the absence of chronic diseases. The students of the second experimental group were mostly overweight, passive in learning, and less interested in cognitive activities. The data of measurements of the length, weight and circumference of the chest are shown in the tables.

Table 1.

Indicators of physical development of girls of the cadet class of School 19 – cadet corps "Victoria"

The survey period	Indicators, units.				
	Body length, cm	Body weight, kg	Chest circumference on inspiration, cm	Chest circumference on exhalation, cm	Ch
The beginning of the year	138,70±0,46	39,26±1,96	74,50±0,73	64,12±0,96	
End of the year	139,23±0,50	40,06±1,90	74,54±0,73	64,14±0,66	

Table 2.

Indicators of physical development of girls of School 8

The survey period	Indicators, units.				
	Body length, cm	Body weight, kg	Chest circumference on inspiration, cm	Chest circumference on exhalation, cm	Ch
The beginning of the year	137,30±1,08	42,20±0,68	74,90±1,41	63,90±0,99	
End of the year	137,58±1,02	46,92±0,77	76,06±1,50	64,14±1,13	

Table 3.

Indicators of physical development of boys of the cadet class of School 19 – cadet corps "Victoria"

The survey period	Indicators, units.				
	Body length, cm	Body weight, kg	Chest circumference on inspiration, cm	Chest circumference on exhalation, cm	Ch
The beginning of the year	141,90±0,64	47,26±1,96	82,34±0,79	66,92±1,52	
End of the year	142,24±0,59	48,06±1,84	82,34±0,79	66,92±1,52	

Table 4.

Indicators of physical development of boys of School 8

The survey period	Indicators, units.				
	Body length, cm	Body weight, kg	Chest circumference on inspiration, cm	Chest circumference on exhalation, cm	Ch
The beginning of the year	141,20±1,09	52,12±0,68	81,70±0,93	68,38±0,75	
End of the year	141,68±1,27	56,12±0,68	82,70±0,89	67,14±1,13	

From the data in the table, it becomes clear that students of the cadet class of School 19 - a cadet corps "Victoria", compared with students of School 8, have the main indicators of physical development better, also in the period we selected (the beginning and end of the school year), students of the cadet class showed a better trend in changes in physical indicators, namely: body length indicators increased in female and male by an average of 1 cm, students of School 8 male and females have a tendency to increase their weight more (on average, this indicator increased by 4 kg.). The average indicators of the cardiovascular system of male and female students of the two test groups are shown in Tables 5 and 6.

Table 5.

Indicators of the cardiovascular system of girls

Indicators, units.	Test groups	
	CG	
Before physical activity		
Systolic blood pressure, mmHg	97,86±5,79	10
Diastolic blood pressure, mmHg	63,57±0,42	6
Heart rate, beats/min	62,14±9,46	6
After physical activity		
Systolic blood pressure, mmHg	114,17±4,18	11
Diastolic blood pressure, mmHg	64,28±2,78	7
Heart rate, beats/min	81,73±5,47	7

Table 6 – Indicators of the cardiovascular system of boys

Indicators, units	Test groups	
	CG	
Before physical activity		

Systolic blood pressure, mmHg	108,57±1,42	108,
Diastolic blood pressure, mmHg	68,57±8,99	65,7
Heart rate, beats/min	58,33±1,96	64,6
After physical activity		
Systolic blood pressure, mmHg	121,17±4,18	117,
Diastolic blood pressure, mmHg	69,18±2,78	72,2
Heart rate, beats/min	71,73±5,47	77,0

As can be seen from the tables, the heart rate of boys and girls studying at a cadet school, compared with School 8 respectively, before and after physical activity, has not such a significant surge, which indicates a normalized state of the body at rest and in an excited state. Thus, it is necessary to conclude that the choice of a learning profile in adolescence is very important for the development of the child as a whole. The conducted research revealed a number of factors influencing the formation of physical and physiological development of adolescents: an increase in educational workload, primarily due to the unregulated use of technical devices, including in the learning process, lack of physical activity, etc.

Bibliography:

1. Baranov A. A., Kuchma V. R., editors. Methods of studying the physical development of children and adolescents in population monitoring: a guide for doctors. Moscow: Union of Pediatricians of Russia; 1999. 226 p.

2. Baranov A.A. Fundamental and applied research on the problems of growth and development of children and adolescents / comp. A.A. Baranov, L.A. Shcheplyagina // Russian Pediatric Journal, 2000. – No. 5. – pp. 5-11.

3. Islamova N. M. Morpho-functional features of children and adolescents in Naberezhnye Chelny. M.: Lomonosov Moscow State University; 2008 p.