



# Development of motor activity of high school students by means of basketball

UDC 796

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## Abstract

**Objective of the study** was to prove the influence of sports games on the development of motor activity of students aged 14–16 years.

**Methods and structure of the study.** The proposed program was as follows: participants in the experiment were offered a set of exercises from the lesson system, aimed at developing motor activity through special basketball exercises and playing basketball.

A series of notes on experimental lessons was developed and compiled taking into account the regulations governing the activities of secondary schools, in accordance with the main regulatory documents in the field of education of the Russian Federation, as well as on the basis of sample programs for children's and youth sports schools.

**Results and conclusions.** The use of our proposed methodology using the means of the sports game "basketball" turned out to be effective in the development of motor activity of schoolchildren.

It was revealed that with the help of the sports game "basketball" one can effectively develop motor activity, which underlies the physical development of students.

In the course of our work, we proved that using the developed methodology, the degree of development of motor activity in students increased. Consequently, this technique can be used when teaching students aged 14–16 years in the classroom, as well as when preparing young basketball players.

**Keywords:** *physical activity, students aged 14-16 years, physical education lesson, basketball, overall lesson density, motor density of the lesson.*

**Introduction.** The modern content of education in the field of physical culture aims not only at ensuring that a school graduate enters life with sufficient physical fitness, but also at ensuring that he is truly educated in physical culture, has the means and methods of strengthening and maintaining health, and increasing functional capabilities main systems of the body.

As practice shows, most modern children lack physical activity. As a result, the strength and performance of skeletal muscles decrease, which entails poor posture, curvature of the spine, and delayed age-related development [3].

Issues of increasing the physical activity of students in educational institutions have always been the focus of attention of specialists [1-4].

**Objective of the study** was to prove the influence of sports games on the development of motor activity of students aged 14-16 years.

**Methods and structure of the study.** To solve problems and achieve the set goal, the following methods were used in the work: theoretical analysis of scientific and methodological literature, testing, pedagogical experiment, methods of mathematical statistics.

The study was conducted in the Municipal State Educational Institution "Yastrebovskaya Secondary School" of the Achinsk District, Krasnoyarsk Territory. 9th grade students, 10 people, 5 boys and 5 girls, took part in the initial diagnostics. The conditions were created, the school gym, 10 basketballs, a whistle, and a



stopwatch were provided. Lessons were held 3 times a week, 40 minutes each.

The proposed program was as follows. The participants in the experiment were offered a set of exercises from the lesson system, aimed at developing motor activity through special basketball exercises and playing basketball.

The developed program is designed to help diversify the content of work in the classroom in a secondary school. One of the main incentives for students to engage in physical education is an interest in the game of basketball and its exercises.

The learning process is based on the requirements of the content of the educational process, which assumes a close relationship between theoretical, physical, technical, tactical, psychological and integral preparations carried out through physical exercises. Classes are held three times a week for one academic hour.

Theoretical classes are conducted in the form of 10-12-minute conversations during practical classes, as well as in the form of a separate lesson. Practical exercises are the implementation of exercises during the lesson.

The development of training sessions included a set of exercises for passing the ball, performing tactical actions, playing actions, throwing and dribbling the ball.

The training session was structured in compliance with the parts of the lesson and included the following exercises:

1. Warm-up (general developmental exercises in place, in motion, jumping, running exercises).
2. The main part (driving the ball, passing, tactical actions during the game of basketball, throwing).
3. Final part (recovery exercises: walking, attention games).

At the beginning of the experiment, when using a series of exercises new to the students, minor difficulties arose in the technique of performing individual exercises. Gradually, step by step, practicing these exercises, it was revealed that students had positive dynamics in the correctness and effectiveness of their implementation. During the experimental lessons in the preparatory part, they received a low-intensity load, which was confirmed by data from measuring the heart rate of 100-125 beats per minute. In the main part of the measurements, the heart rate was recorded at 150–180 beats per minute, which corresponds to a load of submaximal and maximum intensity. In the final part, the load corresponded to the average intensity - 130-140 beats per minute.

When conducting a physical education lesson, indicators of the general and motor density of the lesson are also important. If the total density is 42-45 minutes, then the motor density of the lesson should consist of 25-28 minutes and all this time the student must perform physical exercises that solve the main objectives of the lesson, alternating with active rest, only then will parts of the lesson be as mobile as possible, and when performing These conditions make it possible to achieve maximum motor activity.

Systematic classes using the developed methodology will allow students to cope with the difficulties that arise at the initial stage. As a result, students will increase their motor activity, endurance and physical development.

Before the experiment began, a motor activity test was conducted to determine the level of physical activity of students. The diagnostic results showed that the level of motor activity of 9th grade students was distributed as follows: high – 20% of students, average – 70%, low – 10%.

Table 1. Indicators of measurements of students before and after the experiment

No.	Student name	Motor density		Overall Density		Motor activity	
		D (1)	D (2)	D (1)	D (2)	D (1)	D (2)
1.	A-ko	30 %	40 %	30 %	30 %	60 %	70 %
2.	A-va	38 %	45 %	30 %	30 %	68 %	75 %
3.	V-obv	50 %	58 %	30 %	30 %	80 %	88 %
4.	E-chuk	50 %	55 %	30 %	30 %	63 %	85 %
5.	E-va	25 %	43 %	30 %	30 %	55 %	73 %
6.	Z-va	53 %	60%	30 %	30 %	83 %	90 %
7.	I-nov	43 %	48 %	30 %	30 %	73 %	78 %
8.	L- kaya	30 %	43 %	30 %	30 %	60 %	73 %
9.	M-va	33 %	45 %	30 %	30 %	63 %	75 %
10.	S-ev R.	45 %	53 %	30 %	30 %	75 %	83 %



Participants in the experiment during physical education lessons were engaged in a set of exercises from a system of lessons aimed at developing motor activity through special basketball exercises and playing basketball.

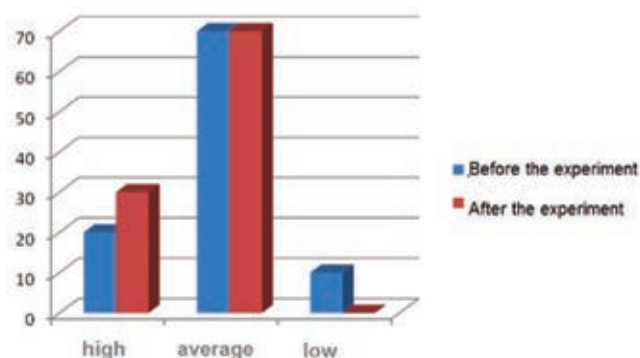
**Results of the study and discussion.** After the main experiment, 9th grade students were tested again to determine the degree of development of motor activity.

The measured indicators before and after the experiment are presented in Table 1.

According to the table, we can conclude that there were positive changes in motor density, total density and physical activity.

Analysis of the results indicates that the test scores before the experiment differ from the scores after the experiment. Consequently, positive changes have been achieved through the use of a series of notes used in lessons.

Based on the results of the experimental work, it was revealed that 9th grade students who were engaged in constant dynamics in physical education lessons became better. The high level increased by 10%, the average remained the same and it was possible to bring students from the low to the average level (see figure).



*Comparative analysis of the level of motor activity*

**Conclusions.** The use of the methodology we proposed using the means of the sports game “basketball” turned out to be effective in the development of motor activity in schoolchildren.

It was revealed that with the help of the sports game “basketball” one can effectively develop motor activity, which underlies the physical development of students. With the help of specially developed lesson plans for the development of motor activity, gradually and regularly increasing the volume, intensity and motor density of the lesson, we can improve the level of motor activity of students, which is very important for their development and motivation for a healthy lifestyle.

In the course of our work, we proved that using the developed methodology, the degree of development of motor activity in students increased. Consequently, this technique can be used when teaching students aged 14-16 years in the classroom, as well as when preparing young basketball players.

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