

Improving the methodology of shooting the ball in the basket using exercises in asymmetrical direction in the movement of 12-14-year-old basketball players

Utkir Alimovich Farmonov¹, Shakhrukh Nematovich Kadirov

Bukhara State University, Bukhara, M. Iqbol, 11, 200100, Uzbekistan

Abstract The basic use of exercises of an asymmetric orientation is to improve the methods of teaching throwing the ball into the basket in motion to basketball players 12-14 years old. In basketball, increased activity during the competition period, and even the intensity of defense dramatically increase the value of gears in motion. The necessity of throwing the ball into the basket, performing attacks from different distances, the importance and improvement of methods of sports training are currently increasing even more. One way to solve this problem is to take into account the influence of functional asymmetry, which is effective in the process of shooting the ball into the basket in motion. We can see in the studies that the peculiarities of the manifestation of asymmetry as a tool in the training of basketball players have shown that its actuality. Therefore, the improvement of functional asymmetry is relevant in the process of technical training of young basketball players aged 12-14 years, taking into account the individual profile. As a result of our research, we found the use of asymmetrically oriented exercises in training sessions, and this process had a positive impact on the effectiveness of technical actions performed by a weak hand.

Keywords: Asymmetry, interhemispheric, methodology, basket, sport, basketball player, movement, attack, defense, technique, tactics, preparation, microcirculation, function, coach, strong, weak.

Introduction

Activities of the basketball player has increased, even the activity of the defense has increased the importance of passes in the movement. The requirements for the accuracy of shooting the ball into the basket, the need to complete attacks from different distances have been developed. One of the ways to solve this problem is to take into account the effect of functional asymmetry, which consists in the process of learning to shoot the ball in the basket [1].

The profile of brain asymmetry regulates the functional characteristics of voluntary actions and states (E.M. Berdichevskaya, 2009)[2,3].

¹Corresponding author: u.a.farmonov@buxdu.uz

Reflecting the features of regulatory mechanisms is one of the following factors that distinguish the growth reserves of human functional capabilities. It determines the relevance and prospects of the placement, remains to evaluate the impact on various aspects of sports activity in the systematic study of the individual profile of functional asymmetries in representatives of various sports. Many sports make specific demands on a person, and many studies of Russian and foreign scientists who contributed to the symmetry. On the contrary, the asymmetry of the development of the musculoskeletal system and the main sensory organs, served to demonstrate motor asymmetries in sports. (E.B. Sologub, 2006; E.V. Fomina, 2006; K.D. Chermit, E.K. Aganyants, 2006) [4,5,6,7].

Object of the research: Technical preparation of 12-14 year-old basketball players.

Aim of the research: Experimental justification of the effectiveness of using asymmetrically directed exercises to teach movement with a weak arm of 12-14-year-old basketball players.

Hypothesis of research: We assume that the use of asymmetric resistance exercises increases the technical movement efficiency of 12-14-year-old basketball players.

Tasks of research:

1. To study the theoretical basis of technical training of basketball players.
2. To determine the level of basketball shooting efficiency in strong active and weak hand movements of 12-14-year-old basketball players.
3. Development of a methodology for learning how to shoot a ball into the basket with a weak hand, using exercises in an asymmetric direction, and basing it in experience.

Aspects of the asymmetry profile of young functional basketball players. The spread of basketball in our time raises many questions about the content of the methods of physical and technical-tactical training of young athletes. So, for example, at the age of 12-14, basketball players need to form the basic technical and physical base necessary for playing. Among basketball players, the choice of a player's specialization occurs at this age and it is connected with many unique and individual characteristics of the athlete. Therefore, the technical component is especially important for us in modern basketball. In order to effectively prepare for the future, taking into account the modern rhythm of basketball, it is necessary to identify and improve various individual characteristics of athletes at an early age [8].

Taking into account different profiles of interhemispheric asymmetry of the brain, the process of training young basketball players aged 10-12 requires great attention. Many studies on motor asymmetries are known in the scientific circles of physical education theorists, and they are considered as one of the sports phenomena. Many scientists in different fields of knowledge are interested in the problem of asymmetry - human symmetry. Currently, research is being actively conducted on ways to improve the effectiveness of training athletes in order to achieve high sports results. And one of the unused directions is the study of individual characteristics of the manifestation of functional asymmetry in sports training. The research was conducted on the basis of the sports school "Youth" in the city of Bukhara, Bukhara region. Two groups of 12-14-year-old basketball players participated in the study. The study was conducted voluntarily. The research included 3 stages:

Stage I is organizaional, a survey was conducted among coaches on the relevance of asymmetry research in athletes. Determining the research object and subject of the subject, defining goals and tasks, formulating the title of the work, developing a hypothesis.

Stage II. In order to determine the influence of the weight of the lower leg of the swinging leg and the weak arm, the weight of the swinging leg was determined on the basis that the running technique of the basketball players should not be disturbed in the changed conditions. The optimal weight for a squatting leg should be 1% of the body weight. The weight of the cuffs for a weak arm should not disturb the motor functions of the wrist, 0,5% was found to be equal.

Stage III. We conducted an experiment to test the hypothesis. 20 basketball players aged 12-14 took part in it. The total number of participants in the experiment was divided into 2 groups of 10 people.

The first group (experiment) consists of learning how to throw a ball into the basket with a weak hand, using additional weight in motor function leaders.

The second group (control) exercised according to the generally accepted method. The number of repetitions of exercises did not differ between the experimental and control groups. In this regime, training was held for a month. During the training session and later during the competition period, we counted the number of basket shots each subject made with their weak arm in motion. The number of shots into the basket was converted into percentages and the arithmetic mean for the goal was entered to determine the efficiency of each group both before and after the experiment. The information we received was reflected in special tables and analyzed.

The fourth stage is the generalization stage, which includes the processing and discussion of the obtained data, the conclusion of the research. Pedagogical experience allows us to improve the methodology of learning how to shoot the ball with a weak hand and help basketball players allows to increase the efficiency of technical actions. This is the main method of research. This method was used to collect information about the problem of functional asymmetry in shooting the ball in motion. In the process of communication with coaches and basketball experts, it was discussed the repetition of throwing the ball into the basket with a strong hand, planning them in the system of physical training.

In our work, we used the following methods of mathematical statistics:

Wilcoxon criteria - is a method that does not consist of systematic parameters and is used to evaluate the significance of differences between two related systems of quantitative characteristics.

Student criteria- determining the reliability of the differences in the probability table $p(t)3 \geq (t1)$ according to the student distribution.

According to the results of a survey of trainers, the same number of repetitions was used to improve movement with a strong and weak hand in organizing the training process. Most of the 6 people surveyed showed the same number of repetitions with the strong and weak hand when improving their 60% range of motion. 2 people - 20% less respondents - use more repetitions when moving with a weak hand. Also, 2 people - 20% more repeat with a weak hand.

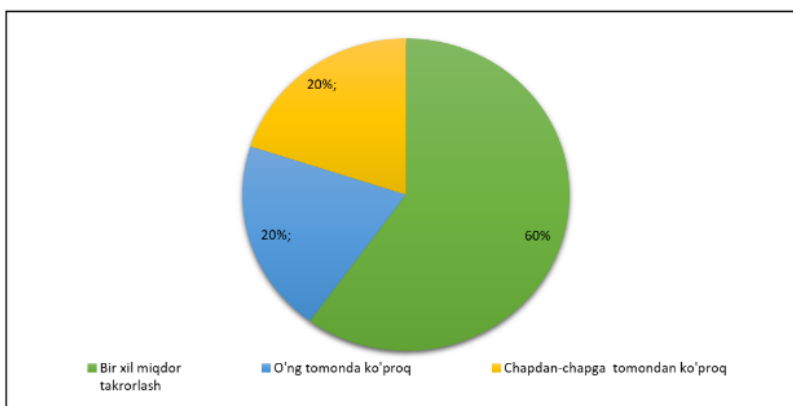


Figure 1 The number of repetitions and movement in improving the basket shot

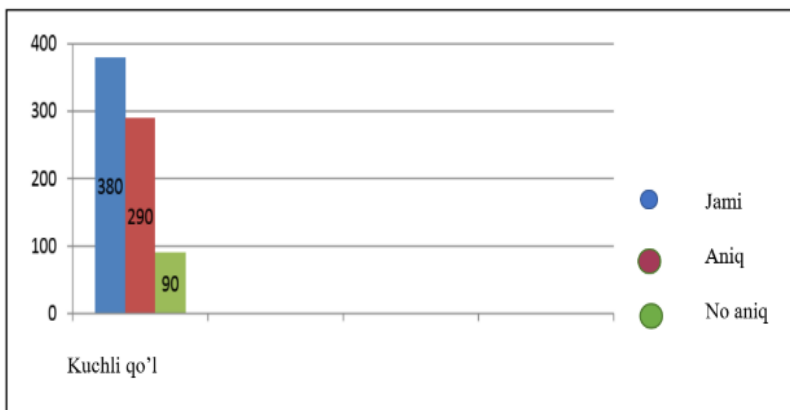


Figure 2 The ratio of shooting the ball to the basket in the movement with the strong arm2-rasm

The observation was conducted from November 1 to November 15, 2022. Sports school № 1 "Yoshlik" in the city of Bukhara, Bukhara region. At the initial stage of the experiment, we conducted tests to determine the "strong" hand in a number of athletes. We analyzed 10 basketball games of the preliminary training group. In the 10th game, a task was given to throw 600 balls into the basket. 380 of them were considered strong hands, and 220 were considered weak hands. 290-shooting the ball to the exact basket 90 of them could not direct to the exact basket, 90 of them directed to the basket but did not hit the basket and 130 of them could not direct to the exact basket.

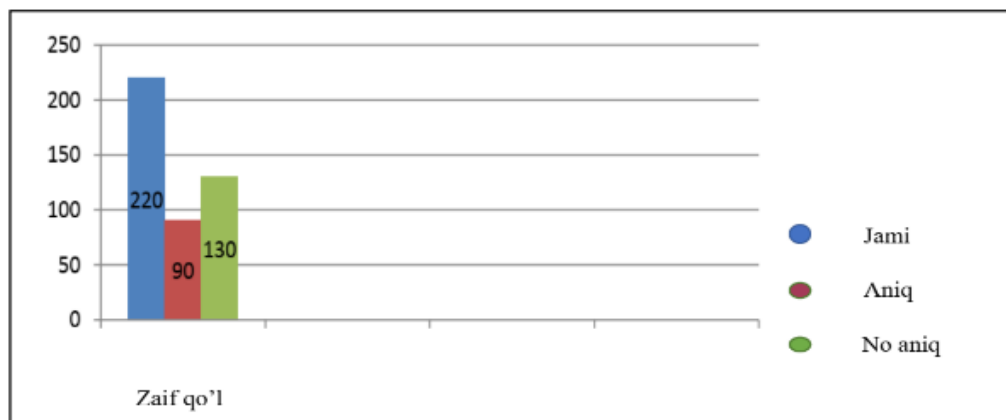


Figure 3 Shot percentage with a weak hand

This, in turn, leads to a decrease in the effectiveness of his actions in the game, in particular, shooting the ball into the basket with a weak hand. It is necessary to improve the methodology of learning to shoot the ball in motion, that is, it is necessary to pay more attention to the development of a strong hand. To assess the effectiveness of the pedagogical model, we used aggregates related to the **Wilcoxon** test, a non-parametric method used to assess the significance of differences between two related aggregates of quantitative characteristics. To check the effect of asymmetric exercises on the ability to coordinate speed-power physical qualities, we conducted a 3x10 smooth running test. This test involves running three distances, touching the line at the end of each segment. You need to touch one side of the line with your left hand and the other side with your right hand.

We processed the results obtained during the research using the method of mathematical statistics, during which we calculated the following indicators:

1. Arithmetic mean (\bar{x});

2. Mean square deviation;
3. difference error (t);
4. Reliability was determined on the basis of $p(t_3 \geq (t_1))$ probability table.

Table 1 The results of the “Moksimon” running "3x10" control test in both groups before and after the pedagogical experiment

| Control group | | | Experimental group | | |
|-----------------|------------------|------------------|--------------------|------------------|------------------|
| Surname | before | after | Surname | before | after |
| J | 7.4 | 7.3 | B | 7.1 | 7.0 |
| G | 7.1 | 7.1 | H | 7.3 | 7.3 |
| H | 7.5 | 7.4 | S | 7.2 | 7.1 |
| A | 7.6 | 7.6 | I | 7.0 | 7.0 |
| M | 7.0 | 7.0 | L | 7.4 | 7.3 |
| N | 7.5 | 7.6 | U | 7.3 | 7.3 |
| S | 7.7 | 7.7 | P | 6.9 | 6.8 |
| R | 7.3 | 7.3 | L | 7.1 | 7.1 |
| J | 7.1 | 7.1 | K | 7.6 | 7.6 |
| D | 7.8 | 7.7 | G | 7.5 | 7.5 |
| Average essence | 7.41±0.26 | 7.37±0.23 | Average essence | 7.41±0.26 | 7.37±0.23 |

The results obtained in the control exercise of 3x10 smooth running allowed us to conclude that using additional loading on the leaders of motor function, making basket shots with a weak hand, the distal part of the lower and upper experiments has a negative effect on the development of coordination skills of basketball players. The results of the pedagogical experiment, as in the control group, the growth of the results turned out to be unreliable.

Table 2 The results of educational games in the control group before and after the experiment

| Participants of experience | Attempts | | | | Dropping the ball into the basket | | | |
|----------------------------|-------------|------------|-----------|-----------|-----------------------------------|------------------|--------------|---------------|
| | Strong hand | | Weak hand | | Strong hand | | Weak hand | |
| | Before | After | Before | After | Before | After | Before | After |
| J | 50 | 51 | 8 | 7 | 12 | 13 | 2 | 1 |
| G | 49 | 48 | 6 | 5 | 8 | 9 | 1 | 1 |
| H | 54 | 53 | 9 | 8 | 16 | 14 | 3 | 2 |
| A | 48 | 52 | 4 | 6 | 9 | 10 | 2 | 3 |
| M | 52 | 53 | 5 | 6 | 10 | 12 | 0 | 1 |
| N | 53 | 50 | 10 | 9 | 11 | 13 | 3 | 4 |
| S | 56 | 52 | 6 | 7 | 14 | 15 | 1 | 2 |
| R | 49 | 53 | 9 | 9 | 10 | 11 | 2 | 2 |
| J | 52 | 51 | 8 | 9 | 9 | 10 | 4 | 3 |
| D | 51 | 54 | 4 | 6 | 13 | 9 | 2 | 1 |
| | 514 | 517 | 69 | 72 | 11,2±2,6 | 11,6±1,95 | 2±1,3 | 2±0,97 |
| | Quantity | | | | Average essence | | | |

After the pedagogical experiment, we again conducted control studies on the indicators we were interested in. Repeated studies in the control group yielded the following results. During the pedagogical experiment in the control group, the indicators we were interested in changed

as follows: in the conditions of educational games, the number of "strong hand" attempts was 3, the number of "weak hand" attempts to shoot was 3. increased. In the conditions of playing competitive games, the increase in the results of these indicators was not so clear, therefore, the number of "strong hand" attempts increased by 1 shot, while the number of "weak hand" attempts remained unchanged. left

In addition, in the process of processing the results of the games during training and competition in both groups, we analyzed the dynamics of throwing the ball into the basket with a strong and weak hand in both groups. In the control group, we obtained the following results. During the training, the increase in the results of shooting the ball into the basket with a strong hand was 3.5%. The number of shots with a strong hand increased by 2.1% during competitive activity. Weak-handed shots increased by 1.3%. In the conditions of training games, the number of attempts with the strong hand increased by 17, and the number of shots with the weak hand increased by 9. In the conditions of the games during the competition, the number of attempts with a strong hand was 5 shots, and the number of attempts with a weak hand was 6 successful baskets.

The results of both groups were analyzed, both groups have approximately the same level of development, it can be said that the indicators we study have approximately the same technical training. After the pedagogical experiments, analyzing the data obtained in the experimental group, allowed us to come to the following conclusions. the result improved by 3.8% in the index of shooting the ball with a strong hand. The biggest increase in results was 22.3% when we shot the ball with a weak hand. Next, we analyzed the criteria during the competition. Strong-arm shots increased by 7.3%. The biggest increase in the results was the indicator of shooting the ball with a weak hand, the increase in the results was 15.2%.

It was observed that the increase in the results of the control group in all indicators did not have reliable differences. The empirical value of the obtained tempo remains in the zone of insignificance. During training, in the experimental group, we observed a reliable increase in the results of the following indicators: attempts to shoot the ball into the basket with a weak hand, balls into the basket with a strong hand We can observe p shots and basket throws with a weak hand. In the conditions of competitive activity, the increase in results in the experimental group is reliable, only in the indicators related to the implementation of technical movements with a weak hand, this is the effectiveness of the pedagogical experience and has a positive effect on learning movement activities with a weak hand.

Conclusion

1. As a result of the review of scientific sources, we found out that an important place in the system of training sessions should be focused on the development of specific direction ability, which is a complex indicator and is determined by the individual characteristics of the athlete. The ability to perform this or that action in both directions in basketball allows to achieve high results in the game and to act more effectively in difficult game situations. To use the right and left hands equally, to become versatile athletes, regular training is necessary. The profile of functional asymmetry in the performance of individual movements was determined to be the most favorable.

2. During the pedagogical observation, we determined the level of efficiency of shooting the ball into the basket in strong and weak hand movements of 12-14-year-old basketball players. We analyzed 10 basketball games of the preliminary training group. A total of 600 hits were made in 10 games. 380 of them were performed with a strong hand, and 220 with a weak hand. Strong-handed shooting accuracy is 290, strong-handed shooting uncertainty is 90. Weak-handed shooting accuracy is 90, weak-handed shooting uncertainty is 130. The efficiency of shooting the ball with the strong hand was 58%, and -42% with the weak hand.

3. We improved the methodology of learning how to shoot the ball in the basket with a weak hand, we used loading exercises to develop the weak hand. We observed a reliable increase in

the experimental group in the conditions of the games during the training period: attempts to shoot the ball with the weak hand, shooting the ball with the strong hand and shooting the ball with the weak hand. The growth of the results in the conditions of the activity during the competition is reliable, only in the indicators related to the performance of technical movements with the non-strong hand, which shows the effectiveness of the pedagogical activity, about the positive effect of experience and the use of weight, in the weak hand. In teaching to move in the control group, we considered that the growth of the results in all indicators, both in the conditions of training and in the conditions of the games during the competition was unreliable.

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