On the Improvement of Techniques of Throws in Basketball Student Team

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Abstract. The role of testing the players of the basketball team at the University in order to improve their skills is considered. Regular pedagogical control, analysis of test results allows the coach to determine the most effective means and methods. Used in the work. If necessary, make appropriate adjustments to the training process.

1. Introduction
The coach of any team tries to control not only the overall results of the game season, but also the individual skills of each player. Sportsmanship of the athletes is dependent on proper and continuous monitoring of the level of its preparation. The effectiveness of the game actions of basketball players is closely related to improving the accuracy of throws in the basket. To see the dynamics of changes in the skills of students who came to the team, many coaches use special control exercises – tests.

Tests help coaches to determine the state of fitness of the athlete in physical, technical, psychological and other types of training.

2. Method
Of all the types of technical preparedness of basketball players of paramount importance is the level of skill of players in the performance of throws the ball into the basket, which is objectively much more difficult to assess.

That may explain the presence in the practice of basketball to the limited number of tests and methods of their use, by which coaches can obtain information about the level of technical (throwing) fitness of the players.

If we take into account that the existing tests allow us to obtain very limited information about the level of readiness of athletes for competitions; it is obvious the relevance of this issue. Trainers in practical work need objective data about the level of preparedness of sportsmen after a certain stage. This is necessary to determine the effect of the methods used in the training process, means and volumes of work performed, followed by adjustments to (work plans to improve the technique of throws.

For coaches is of great interest information about the effectiveness of throws each player from different positions and ways to perform them (in the jump from the place, in the jump with a stop after the conduct, from the place of one or two hands in women). Such information is needed to determine the direction of the game actions of basketball players in order to improve the efficiency of
competitive activity of each of them. Need it and to eliminate in the training work weaknesses in technical and psychological preparation of the players.

3. Experiment

This article provides a test that was used in one of the University teams and was described in detail in the article of the authors "Testing to determine the level of technical readiness in the basketball team" [6]. The intensity of the basketball players in the test it should be variable and correspond to a certain stage of training work or competitive activity.

Testing in the desired mode intensity is achieved through the implementation of the mid-range throws with a stop after dribbling, breakthrough player at picking up the ball after a throw and motion throw on the position of the throw that corresponds to the game situations during the competition on the court.

Using this method of testing, the coach has the opportunity to vary the intensity of motor actions of athletes in three modes.

1. Predominantly aerobic (moderate work) - heart rate within 130 - 150 UD/min;
2. Mixed aerobic-anaerobic (medium motor activity) – Heart rate at 150 - 175 beats per minute;
3. Anaerobic - glycolytic (near-limit intensity motor actions) - heart rate 180 -200 beats/min.

This is achieved by making small adjustments to the test execution conditions.

In the first case, moderate activity is achieved by minimal motor activity the activity of the player during the execution of throws the ball to the basket. All the balls to score the subject takes the assistant. Position throws the player changes at a calm pace. Only throws from the middle distance it performs with a stop after driving in full force as in competition conditions. Time carry several exercises one player in this case accounts for 11-12 minutes.

In the second case, the average mode of motor activity is achieved by movement player on rebounds after shots from the middle distance and change the throwing position in a quiet rate. The time of the exercise in this case is 13-14 minutes.

The near-limit intensity of motor actions is achieved as a result of movement player on the selection of the ball after the shots from medium distances at a fast pace. Time exercise is 9-10 minutes.

All results were entered in the Protocol. To reduce the negative effect of the process of working out, the test players before starting the exercise perform a five-minute run around the site in the intensity mode corresponding to a certain stage of training work. The run ends at the Desk of the Secretary, the secretaries determine heart rate from the wards and entered in the Protocol. After that, players consistently begin to perform the exercise, which includes 100 throws from medium and long distances (4.5 and 6.75 m).

Having thus completed 10 consecutive shots from 5 different positions, the second series of throws the player starts again from point 1. After performing five series (50 shots) Secretary determines the heart rate of his ward and records the result in the Protocol. At the same time, the time spent on the first half of the exercise is recorded in the Protocol. After that, the players continue to perform the exercise.

On completion of the 20 series (100 shots) is determined by heart rate, the execution time of the second half of the exercise only and exercise in General.

Treatment Protocol we begin with the definition by counting the number of hits from 5 shots every 10 episodes separately for long and medium distances. The results are recorded on the right side of the table in two columns of numbers: the results of throws from long distances in the left column, the average – in the right column. Data it is desirable to fill two colors.

After that, the effectiveness of throws from long and medium distances, performed in the first and second halves of the exercise and the total test result is determined and recorded in the designated places.
After that, the effectiveness of throws from long and medium distances, performed in the first and second halves of the exercise and the total test result is determined and recorded in the designated places.

To determine the level of stability of the throw technique (special performance) during the exercise and clarity, the results of each series are transferred to the graph located at the bottom of the Protocol. For this purpose, the efficiency of long-range and medium shots in each series is determined as a percentage and transferred to the graph, on the abscissa axis of which the sequence numbers of 10 series of throws are postponed, on the coordinate axis – the efficiency of throws as a percentage.

To determine the effectiveness of throws on five different positions (%), you need to summarize top-down all accurate throws made from a distance of 6.75 m (position 1)

The obtained data are transferred to the plan of the basketball court, located in the lower right part of the test Protocol. When processing test data, the color corresponding to a particular distance is filled in the entire Protocol. In the proposed article, the dynamics of long shots is shown in the diagram as a solid line, the average – as a dotted line.

After the first test, the results were analyzed, certain conclusions were made, what should be worked on, throws from what distances should be "improved". During the further training work, a certain emphasis was placed on special exercises.

4. Results and their discussion
To determine the level of stability of the throw technique (special performance) during the exercise and visibility, the results of each series are transferred to the chart, located at the bottom left of the Protocol. To do this, determine the effectiveness of long-range and medium shots in each series in percentage and is transferred to a graph in x-axis sequence number 10 series of throws on a coordinate axis, the effectiveness of the surge in interest the main place in the analysis of the test results is the study of the oscillation amplitude the effectiveness of the shots displayed on a graph with two colored broken lines or, as in this article, solid and dashed lines.. In practice, it is possible to obtain numerous variants of the dynamics of the amplitude of the effectiveness of the throws, some cases you can understand and explain.

Option 1 (Fig. 1). In testing practice can often meet cases in which the contrary motion broken lines the efficiency of throws performed with medium and long distances. In this case, there is often a large amplitude of these or other results at a low (50 - 60 %) average efficiency throws. It may indicate as low the level of stability of the technique of throwing the ball in the basket this player, and the lack of concentration the player's attention when performing the exercise.
Analyzing the results of testing players in the first year, it was concluded that most of the newcomers of the team showed exactly this result. Under option 2 (Fig.2). There are cases reducing the effectiveness of throws in 4, 5, 6 series, followed by its increase.

It can be seen, firstly, as a lack of "vrabatyvanii" of an athlete in the process of warming up; second, as a low level its special working capacity.

![Figure 2. Option 2.](image)

Option 3 (Fig.3). Cases of parallel dynamics of efficiency indicators of throws from long and medium distances can be considered as an objective factor of the relationship (sensitivity) of the accuracy of motor actions of basketball players from the state of the internal environment.

![Figure 3. Option 3.](image)

Schedule of option 4 (Fig.4) shows relatively high (65 - 70 %) average the effectiveness of shots with large amplitude its fluctuations (30 - 40%), indicating that not yet high enough stability time and space parameters techniques throw the ball in the basket of the player.
Option 5 is interesting (Fig. 5). Here the high average efficiency of throws (80 %) at small (within 20 %) amplitude of fluctuations of results of the throws executed from long distances and low efficiency (55 - 60 %) of throws from an average distance at the big amplitude of indicators of efficiency in series in the course of performance of exercise is combined, and it allows to draw a conclusion that in official games the athlete has to refrain from performance of throws with a stop after a stroke from average distances.. In the training process it is necessary to pay more attention to improving the technique of the throws from the middle distance with a stop after the reference.

Ideal option 6 (Fig. 6). High (75 % and higher) efficiency of throws from medium and long distances and the amplitude of the recorded indicators within not exceeding 20 % indicate a sufficiently high degree of special throwing performance and a fairly good level of technical preparedness of the player. The athlete with such indicators is ready to confirm the skill in competitions.
In any case, the high amplitude of the effectiveness of the throws, how and low (40-50 %) efficiency of shots with a small amplitude, indicates the low-level technical side of the sports form of players. Athletes with such indicators should not be carried away by throws from medium and long distances during the game and it is necessary for the coach after the first test to review the training process.

Analyzing the results, we can conclude that almost all the newcomers of the national team on the 1st course show a low average activity of throws with a large amplitude of its fluctuations, which indicates a lack of high stability of time and space parameters of the technique of throwing the ball into the basket.

5. Summary
Regular pedagogical control, analysis of test results, compared with the amount of work performed by the players, will allow the coach to determine the most effective means and methods used in the work and, if necessary, make appropriate adjustments to the training process.

As a result of the analysis of testing it is established that at intensive motor activity on 4, 5 minutes there comes temporary decrease in working capacity that can be characterized as temporary decrease in special working capacity. With the continuation of the efficiency of motor action increases. In this regard, to obtain objective information, the duration of the test exercise should be at least 10 minutes.

A comparative analysis of the data of the last test with the previous and subsequent comparison of indicators of the number of shots, their result and the number of training sessions for a certain period of work, will help the coach to determine the strengths and weaknesses of certain stages of work. The information obtained will be the basis for planning the next training period.

References
[1] Portnov Yu M 2016 Basketball (Moscow: Hotline) p 238
[2] Valtin A K 1984 Methods of improvement in the technique of throwing the ball in the game of basketball (Kiev: Kievskii Institute) p 158
[3] Godik M M 2014 Control of training and competitive loads (Moscow: Physical education and sport) p 317
[4] Kostikova L M 2015 Planning of sports training and pedagogical control in basketball. Methodological developments gtsolik (Moscow: Physical education and sport) p 294
[5] Matveev L M 2015 Theory and methods of physical culture (Moscow: Physical education and sport) p 185
[6] Chibrikina V, Alekseeva Iu S Pb 2018 Testing to determine the level of technical readiness in the basketball team (Saint-Petersburg: Scientific notes of the University name P. F. Lesgafta) p 308- 319