

THE EFFICIENCY VERIFICATION OF OPERATIONAL PROGRAM IN ORDER TO DEVELOP BASKETBALL FREE THROWS PERCENTAGE THRU PRECISION TEST

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Abstract: *In present research we presuppose that the basketball's free throw is perfectible, and the implementation of some exercises structures for free throws perfection goes to players development, a bigger number of scored points, special tactic for ending periods of games, taking winnings games, at least in those wich the final result depend on a scored free throw. The esantion includes 15 basketball's girls players, that activates at CSU Cuadripol Brasov team, Under 14 category, the value obtained thru initial and final test representating an solid argument for the efficiency of methods and exercises used in present research*

Key words: *free throws, operational model, precision test, U14 basketball players.*

1. Introduction

“Basketball shooting is the technical element that determines the final goal of the basketball game-scoring as much as possible, trying to get as many points as possible”[5]. In the same book, the authors mentioned above state the idea that “the efficiency of throwing allows the shootout of the teams at the end of the game”.

The statistics of the games of the National Championships held by FRB show that at all age categories winning does not rely on this idea anymore, the defence having complex forms, this supporting the success and the efficiency of the throws of the opponent team.

“Basketball shooting is one of the fundamental elements of the basketball.

This should be present in every training course and it must be also repeated [5].

The same opinion is supported by professor univ. dr. Balint. The professor considers basketball shooting a general training goal for basketball in physical education. It is recommended that during the training course, the learning action to start by shooting without moving and in dribbling [1]. For practising it is recommended to use many balls, even balls that are not special, this being a compulsory condition for repeating. Shooting must be compulsory in every physical education class in which there are planned topics related to driving skills specific to basketball[1]. After learning the basic elements, shooting must be done with the team mate and in front of the

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opponent. Each throw will be followed by the action of taking back the ball.[6]

The precision has human and technical parameters. Gablonsky M. J., and Lang S.I.D.A., (2005) realise and shows the mathematical model of basketball free throw thru forces and angles.[3].

Blazevich J.A. (2010), says that projections movement depends by angles, gravity and air friction [2].

Tran and Silverberg (2008) says that optimal angle to perform a free throw is between 52 and 55 degrees [7].

The optimal trajectory is conditioned by launching angle, speed and spinning movement of basketball [4].

Taking this into consideration and also my experience as basketball coach, I have paid attention to the accuracy of the final action of the attack, throwing the ball.

Background

The importance of basketball's free throw from game statistics shows that at this age and this team from all scored points the free shots represent 24 %.

For superior category of juniors competitions, at 2011-2012, 2012-2013 and 2013-2014 Under 18 woman's Finals Turnaments it's been registered a percentage of made free throws shots of 55,10%, with a 17,48% share from total scored points. In Romanian National League in the same seasons the percentage was 69,26% with a share of 18,1%.

On the road to Eurobasket 2013, national team of Romania gets a percentage of 67,39% with a share of 17,94% from total scored points. Spain, European Champion in 2013 has a 71,05% percentage from free throws line, represents 16,33% from total points. The United States of America woman's team, world champion in 2014, gets a stunishment percentage of 71,55% from free throws line with a share of 15% [11].

Referring to the work that has been presented I consider that it is necessary to say that the main reason for implementing it it was the analysis of the results and of the statistics of the matches of CSU Brasov Team at the National Championship for Juniors U 14, for girls, Brasov 2012. In this way I reached the conclusion that the percentage of the free throws that scored to the throws that did not score was beyond our expectations. This fact, taking into consideration that we want to take part in the Final Championship, the best eight teams in the world, made us think about the previous training classes, having an analysis of the systems of action that did not give the best results.

2. Research subjects and methods

The subjects of the research are the members of the CSU Team in Brasov, Under14 category, participating in the National Championship for Juniors in 2012-2013. I have trained this team for 4 years, at the moment of having the research I was the main coach of it.

The main goal of the present research is to verify the efficiency of the chosen operational model

As an appropriate objective we want to develop made free throws percentage in order to achieve our team goal, to be in first 3 teams at Final Tournament, and, as a final objective to show the efficiency of the model.

2.1. Work hypothesis

- improving the percentage of the free throws in the basketball match for the age group Under14 by introducing some special systems created for it.

3. Organizing and conducting research

The research started at the beginning of April 2012, after the games in the

Semifinal Tour Under14 for girls finished and continued until the end of it, two days before the finals of the National Championship.

The initial testing took place after a brief meeting in which the results were analysed and a plan for the future training was made, the importance of it.

It is important to mention the fact that when choosing the tests we took into consideration the traits of the regulation for this age group that says that all the members of the team have to be in the field as following: 5 members of the team play in the first 15 minutes, in the following 15 minutes, another 5 players, and according to it only one member can be substituted. The second half, consisting of the third and fourth quarters, is played without any restrictions, In this way I took into consideration the fact that 8 players spend ten minutes minimum until the break, fact that made me be aware of the fact that all the players must be well- prepared.

Another aspect that we tried to follow for the tests is represented by the conditions of effort in the moment of throwing and also the conditions of psychic nature. In the competitions held at his level I noticed the fact that in the case of allowing two free throws the chance of success is at the second throw, this fact can reflect a poor training or maybe a bad mental state.

The evaluation consisted of three tests. We have created 2 of them one being created by Romanian Basketball Federation. This test is applied to Under16 for boys and girls category in the National System of Evaluation of the Romanian Basketball Federation.

Referring to the test given by FRB we can say that this test is more proper for this group age rather than for the group age for which it was created.

We do not consider that this test is very relevant for the relation between the throw and the physical effort, running between

the sets of free throws, being in slow motion, and this type of running is old-fashioned and it can be found in modern basketball. But we do believe that this test created by the Federation can be applied to all the teams that take part in the National Championships for Juniors., having a low level of difficulty [10].

The application and interpretation of results of **Precision Test** being the object of present research.

4. The description of Precision Test

The test consists from 10 free throws at a basketball rim, that has a shooter ring installation (Figure 1). The test presopose 5 sets of 2 free throws, between sets the players have to stand in shot position with their eyes closed for 10 seconds. We look to keep quiet in the gym.

Observations:

- the test is applied twice, with a 30 minutes pause
- we note the arithmetic average between the results
- the free throws are realised with official Molten balls, size 6
- maximum time between grabbing and throwing the ball is 5 seconds (regular time)



Fig. 1. *Shooter ring instalation* [11]

The initial test was done in the sports hall of the The National College of Computer Sciences *Grigore Moisil* Brasov. For this test I was supported by my colleagues RE, GC, AR. In this way the test was done at both main basketball

boards, in this way the test being very well-organised. We mention the fact that all the conditions for training, stretching were arranged.

Because we had little time for training for the Final Tournament of the National Basketball Championship I planned the training according to the spring holiday. Under these circumstances, we planned 28 trainings. We had to work under pressure and in this way we had to have a new way of training.

We mention that the trainings were based on technical-tactical dimension with some physical, theoretical, psychological elements. We tried to be aware of the complexity of the lesson in the days we had two trainings. We also tried to correct the relations between the players, to have simple tactics in order to improve the quality of the match. We consider that this period for training for the competition is very important and it is very similar to the aims of this research.

The contents of the operational model was introduced into the training lessons in this period. We can say that we used the means of the experimental model in each of the 28 trainings, 2 lessons were used for the initial testing and final testing. This was not an easy task for us. The application of the contents of the operational model was done in a varied way. We tried to account for these systems of action for other teams as well, not only for the University Club

The verification of the efficiency of the operational model is possible by comparing the initial and the final results of the test, and also by analysing the statistics of the games that can limit temporarily the application of it.

5. Results

As a result of having the values of the initial and final test we can present the final form as a table showing the comparative results of the two tests. (Table 1)

Table containing initial and final results – Precision Test

Table 1

No. crt.	Subjects	Initial test	Final test
1	Subject 1	3	3,5
2	Subject 2	3	3,5
3	Subject 3	2,5	3
4	Subject 4	2	3,5
5	Subject 5	3,5	5
6	Subject 6	3,5	4,5
7	Subject 7	4	5,5
8	Subject 8	2,5	3,5
9	Subject 9	3	3,5
10	Subject 10	4	5
11	Subject 11	2	3,5
12	Subject 12	3	3,5
13	Subject 13	2	3
14	Subject 14	2	2
15	Subject 15	2	3,5
Average		2,8	3,7
Total		42 / 150	56 / 150
Percentage		28,00 %	37,33 %
P<0,01			
t=3,11			

About Precision Test, who open the road for psychological training application, we can say that the obtained results offer us the premise to implement ideomotor method in experimental grup training.

In this line, we can conchide that the initials versus final values show a important development of numbers of free

throws (56 agains 42) from a total of 150 (Figure 4), with a percentage / team that grows from 28% to 37,33% (Figure 3), values that indicate a progress average / group to 0,9 units / player (Figure 2).

Graphical form of the comparation of initials and finals results of Precision Test is shown in the following lines:

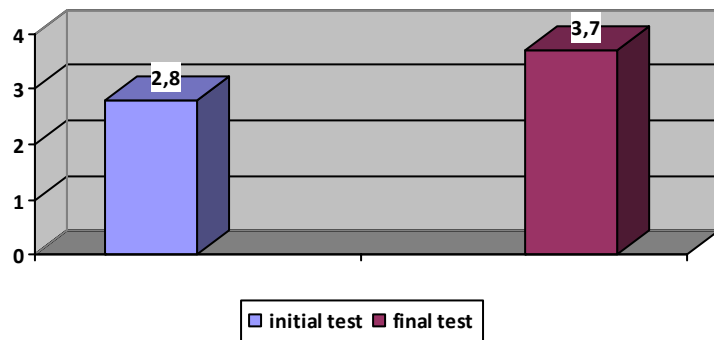


Fig. 2. *Graphic interpretation of Precision Test, average*

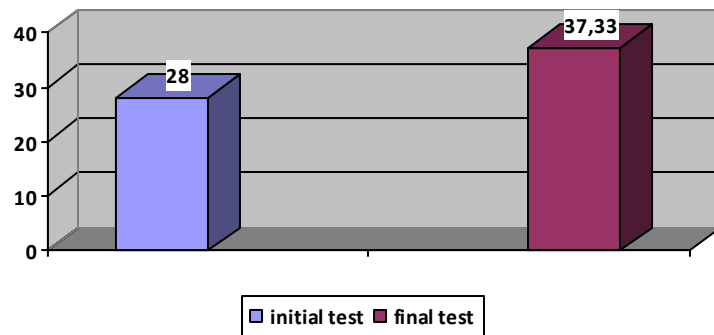


Fig. 3. *Graphic interpretation of Precision Test, percentage*

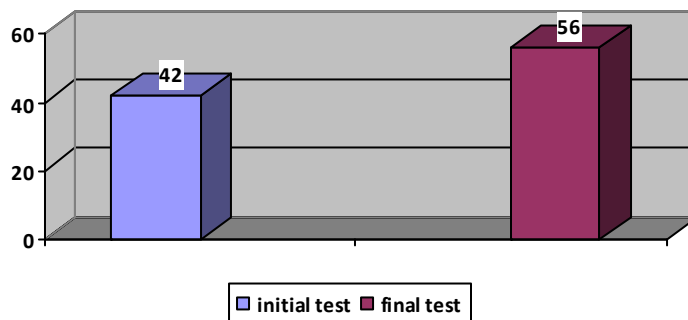


Fig. 4. *Graphic interpretation of Precision Test – total succesful*

We mention that the low values obtained in present test is given using the shooter ring instalation. Speaking about numbers, the shooter ring reduce the surface of the basketball ring from 45,7 cm to 35 cm. The basketball size 6 has a diameter between 23 and 23,4 cm.

In this conditions, geometricaly speaking, we have to introduce a 23 cm sphere thru a 43 one. Theoretically, the maximum error limit is 22 cm. That distance is reduced using shooter ring instalation to 12 cm, with 55 % less (Figure 5).

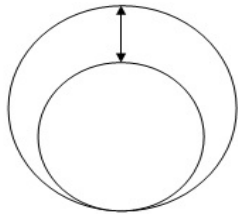


Fig. 5. *Maximum error limit*

Besides these figures we have also the statistics of the matches from the Semifinals of the Tournament and the Finals of the National Championships for Juniors U14 for girls category, where an important improvement has been noticed. In this way, after analysing the statistics of the official games we notice a great progress for successful throws, chart 4. We want to present these results as tables, the graphical form being posted on the official website of the Romanian Basketball Federation, www.frbaschet.ro. (Table 2, Table 3, Table 4) This aspect of our research verifies the hypothesis according to starting from the assumption of the fact that increase of the percentage mentioned above leads to the increase of the competitive yield of the team and finally having a higher score in the official match.

Table 2

Table containig free throws percenting of Semifinal Round games (initial games) [8]

Opponent team	Made	Tryed	Percentage
CSŞ Sfântu Gheorghe	15	31	48 %
CSŞ Alexandria	5	14	36 %
Valbon Arad	8	16	50 %
LPS Galaţi	11	25	44 %
U 4 You Cluj Napoca	6	10	60 %
Average	9	19,2	47,6 %

Table 3

Table containig free throws percenting of Final Round games (final games) [9]

Opponent team	Made	Tryed	Percentage
CSŞ Alexandria	8	15	53 %
ACS Champions Bucureşti	11	25	44 %
CSŞ Bega Timişoara	13	23	57 %
MC Sport Cluj Napoca	15	21	71 %
U 4 You Cluj Napoca	9	14	64 %
Average	11,2	19,6	57,8 %

Table 4

Table containing initial and final games free throws percentage

Competition	Made	Tryed	Percentage
Semifinal Round games	45	96	47,6 %
Final Round games	56	98	57,8 %

From the analysis above we can notice that for both tournaments even throws were made, the difference between the percentages being given by the 11 successful throws at the final competition.

This number can be explained by the influence of the successful throws from **47,6 % to 57,8**, this being an important progress in our opinion (Figure 6).

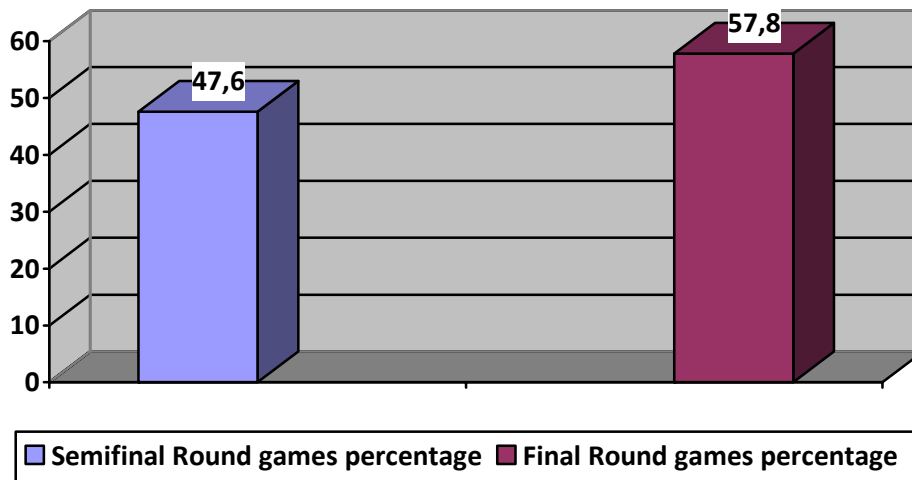


Fig. 6. *Graphic interpretation of competitiveness*

6. Conclusions

The comparative analyses between initial and final testing and the initial and final competitiveness performance shows significant growth in free throw percentage, a fact that proves the efficacy of the used training model.

From the point of view of the progress made in a short period of time, we can say that the work hypotheses have been confirmed, and also the fact that the action systems that are part of the operational model used in training proved to be efficient.

Notification

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