A study of the behavior of Romanian and foreign basketball players in the U-Mobitelco team in FIBA Eurochallenge Cup games

Studiu privind comportamentul în joc al unor jucători români şi străini din echipa de baschet U-Mobitelco, în competiţia FIBA Eurochallenge Cup

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Abstract

Background. The principle of the research started with the notion that in order to objectively evaluate the team members' behavior during play, which in turn would lead to better knowing the players and to a better use of them in competitions based on objective decisions, it is necessary to gather information by the means of recording and building a ready-to-use database.

Aims. The purpose for analyzing the main behavior indicators during games was to obtain data on which the coach could better assess the evolution of his players and could objectively plan the training process in order to increase the players' performing efficiency during competitions. The aim is to determine to what extent the foreign players from U-Mobitelco represent a plus and add value to the basketball game.

Methods. The six players' contribution to the results of the team in this competition was monitored, by comparing the results obtained by the foreign players and Romanian ones, analyzing specific parameters: number of games played, number of minutes played, number of shots, offensive rebounds, defensive rebounds, steals, blocks - blocked basketball throws, decisive passes - assists, stolen balls, scored points.

Results. A model of the Romanian and foreign players' game behavior was subsequently developed. Comparing the main game parameters, the foreign players have better results than the Romanian ones, except for the 2-point throws. The foreigners' game efficiency index is 49.6, whereas the Romanian players' index is only 14.2.

Conclusions. Processing the data regarding game specific parameters gives the coach objective information on which to better know his players, to assess the overall evolution of the team and to take better decisions. On average, the foreigners get to play 10.41 minutes longer than their Romanian teammates. Regarding playing time, the foreigners outperform the Romanians by far, with a mean value of 30.84 vs. 20.43 minutes played.

In the case of 9 out of 10 parameters, the foreigners have better results and thus, they contribute to a greater extent to the achievements of the team and to raising the performance index.

Keywords: basketball, players, men's basketball, Cluj, EuroChallenge.

Rezumat

Premize. În realizarea cercetării s-a pornit de la ideea că pentru aprecierea obiectivă a comportamentului în joc al componenţilor echipei, care să conducă la mai buna cunoaştere a jucătorilor şi optimizarea utilizării lor în competiţii pe baza unor decizii obiective, este necesară culegerea de informaţii pe baza unor înregistrări, realizarea şi valorificarea unei baze de date.

Obiective. În urma anlizei principalilor indicatori ai comportamentului în joc s-a urmărit obţinerea unor date pe baza cărora antrenorul să cunoască mai bine evoluţia jucătorilor şi să poată să-şi proiecteze pe baze obiective procesul de pregătire în vederea creşterii capacităţii de performanţă în competiţii a sportivilor. Se doreşte constatarea în ce măsură jucătorii străini componenţi ai echipei U-Mobitelco reprezintă un plus valoric în economia jocului de baschet.

Metode. S-a urmărit contribuţia celor 6 jucători la rezultatele obţinute de echipă în această competiţie, prin compararea rezultatelor obţinute la principalii parametri specifici jocului de baschet de către jucătorii străini şi cei români: numărul de jocuri la care au participat efectiv, minute jucate, aruncările la coş, recuperările ofensive, recuperările defensive, intercepţiile, capacele - blocările mingilor aruncate la coş, pasele decisive, mingile pierdute, punctele marcate.

Rezultate. În final, s-a realizat un model privind comportamentul în competiţie al jucătorilor români şi cei străini. Analizând parametrii care se referă la comportamentul în joc, exceptând aruncările la coş de două puncte, jucătorii străini au rezultate mai

bune. Indicele de eficiență în joc al străinilor este de 49,6, față de 14,2 al jucătorilor români.

Concluzii. Analiza datelor privind parametrii jocului oferă antrenorului date obiective pe baza cărora acesta poate să cunoască mai bine jucătorii, evoluția de ansamblu a echipei și, astfel, să ia decizii mai corecte. Jucătorii străini sunt utilizați, în medie, cu 10,41 minute mai mult decât coechiperii lor români. În ceea ce privește timpul de joc, jucătorii străini, cu o medie de 30,84 minute, sunt net superiori jucătorilor români, media acestora fiind de 20,43 minute.

În cazul a nouă din cei zece indicatori, străinii au rezultate mai bune și, în acest fel, contribuie într-o mai mare măsură la realizările echipei, la ridicarea valorii performanțelor obținute.

Cuvinte cheie: baschet, jucători, masculin, Cluj, Eurochallenge.

Introduction

Basketball is a sport played between two teams whose players are characterized by remarkable somatic and genetic features (Colibaba-Evuleț & Bota, 1997). Their physical abilities are trained to allow them to withstand intense physical effort, alternating submaximal graded exercise with short maximal effort periods (Baroga, 1994), in order to achieve the best results in direct confrontation with an opponent, both in defense and attack. Due to the game's specific requirements, a very important element is basketball shooting, which requires spatiotemporal representation, an above average kinesthetic sense, a high sense of precision and high efficiency. All these skills are acquired over a period of special training oriented in this direction (Predescu & Ștefan, 2010).

Taking into consideration all these factors, in order for basketball players to reach the level and performance of professional senior players, they need to undergo consistent training for about ten to twelve years. This is why selection and initial physical preparation start at very young ages, around seven - nine years old, while the peak performance age will be around 25-27 years old (***, 2007). The work to reach high performance levels requires systematic, long-term and complex training, the intensity of which increases at regular intervals. Designed to prepare the body for intense effort and resilience in competitions, training is built on a set of pedagogic, biological and psychological principles and involves an interdisciplinary approach (Dragnea & Mate, 2002).

The work of a basketball coach, like any other coaching activity, is conditioned by the systematic action of objective and subjective factors that determine the training process and the participation in competitions. Some of these are: the methodology and technology used, conditions and human resources, activity coordination and management, etc. In order to reach the high performance standards of today's competitions and maintain top technical and methodological parameters, the coach is assisted by specialists from different areas of expertise: the theory and methodology of sportive training, medicine, psychology, sociology, informatics (Epuran, 2005). Their research and guidance contribute to the maintenance of the players' health, a better choice of efficient training means and of the right intensity of physical exercise during training.

There are many studies and research papers focusing on different aspects of the basketball game. Depending on demands, research has been focused on basketball learning and reinforcement methods (Pop & Roman, 2003), on the training of higher education sport specialists, on the theory and methodology of physical training (Colibaba-Evuleț & Bota, 1998), progressive training (Berceanu & Moanță, 2007), adaptation and exploitation of the research results in

order to optimize the coach's activity (Vicenzi et al., 2007).

In addition to these general approaches, other issues have also been studied such as: basketball seen from a mathematical and physical point of view (Hajossy & Macura, 2011), the study of the biomechanics of technical procedures (Hay, 1980), the study of the behavior during the game (Feflea, 2011), the evolution of technical elements (Schmidt & Clausmayer, 1995), physical exercise (Feflea & Roșca, 2013; Roman & Batali, 2002; Travaillant & Cometti, 2003), and many others.

Exploratory studies are based on significant statistical information, acquired as a result of observing and recording the players' behavior during matches (Bachner, 1998). The purpose is to offer basketball specialists relevant data regarding different aspects of the basketball game and to build databases for the objective analysis of the team as a whole and of the players taken individually (Maroti, 2008).

Objectives

- understanding the game behavior of the best team players on an objective basis;
- comparing the results and efficiency of these players;
- providing the coach with objective data that can help in designing and implementing the training process, optimizing the management of the team during competition, making a more rational use of the players.

Hypothesis

This research aims to provide a better understanding of the performance of the players and also, to rank them, which will result in an objective assessment of the players. Through their game behavior, the foreign players contribute to improving the value of the team.

Material and methods

In order to conduct the research, CSU Mobitelco Cluj-Napoca gave us the permission to consult their FIBA Eurochallenge Cup database, and we also obtained the consent of the players mentioned in this paper.

Research protocol

a) Period and place of the research

The research was conducted during the competitive season 2011-2012, when the U-Mobitelco team competed in the Eurochallenge Cup, in group D. The games were played at home and away, in the hometowns of the group teams: Calton, Antwerp, Enisey and Cluj-Napoca.

b) Subjects and groups

Six players of the Universitatea-Mobitelco Cluj-Napoca basketball team, three foreigners and three Romanians, were included in the study. Representative players were chosen and grouped two by two, according to their position in the team.

c) Tests applied

The study is based on data gathered by observing and recording the main parameters of the basketball game during the six matches played in group D: shots, offensive rebounds, defensive rebounds, interceptions, blocked basketball throws, assists, turnovers, points scored - all related to the playing time of each team member included in the research and downloaded from the competition's website (1).

The following abbreviations were used in the recording process: Min/M - minutes played per game; 3PA - three-point shot attempt; 3PM - scored three-point shot; 2PA - two-point shot attempt; 2PM - scored two-point shot; 1Pa - attempted free throws ; 1PM - scored free throws; REC/M O - offensive rebounds (attack); REC/M D - defensive rebounds (defense), I/M - number of intercepted balls; C/M - number of blocked balls, PD/M - number of assists , MP/M - number of turnovers, PCT/M - total points scored per game, EF - the players' efficiency (coefficient of efficiency).

d) Statistical processing

Data processing and calculation of means, percentages, and efficiency indices were performed using the statistical-mathematical method. Microsoft Excel was used for data processing, tables and graphic representations.

Results

Table I
Number of games and minutes played.

Number	Foreign players			Romanian players		
	MT	ZK	DK	MS	PM	PC
Matches	5	5	6	5	6	2
Minutes	142	144	212	151	132	18

Table III
Player ranking based on contributions to points.

Place	Player	Status	Scored shots			Total	Game average
			3 points	2 points	1 point		
I	DK	Foreigner	12	84	18	114	19.00
II	ZK	Foreigner	15	50	17	82	16.40
II	MT	Foreigner	15	30	8	53	10.40
IV	MS	Romanian	18	24	4	46	9.50
V	PM	Romanian	6	26	2	38	6.33
VI	PC	Romanian	-	2	1	3	1.50

Table IV
Offensive and defensive rebounds.

Parameter	Foreign players			Romanian players		
	MT	ZK	DK	MS	PM	PC
Offensive rebounds	1	14	3	9	3	1
Defensive rebounds	13	24	19	21	13	1

Table V
Balls won through interceptions and blocks.

Parameter	Foreign players			Romanian players		
	MT	ZK	DK	MS	PM	PC
Interceptions	12	9	8	-	3	-
Blocks	-	1	3	-	-	-

Table VI
Comparative presentation of the evolution model.

Parameter		Foreign players	Romanian players	t
Played minutes		30.84	20.43	1.38
3 p	M	2.66	1.53	1.54
2 p	M	5	5.1	2.16
1 p	M	8	2.3	2.49
Rec.	Of.	1.16	0.76	0.35
Rec.	Def.	3.52	2.28	1.06
I/M		1.83	0.16	5.55
MC/M		6.66	3.23	1.79
PD/M		2.36	1.76	0.07
PCT/M		46	17.1	2.40

Discussions

Observing and recording the game behavior related data provides the coach with objective information regarding the players, allowing him to build a database concerning both his own players and the opponent team's players. Data processing and analysis lead to a better understanding of the players, resulting in better and more objective decisions.

The comparative study of the games played and active game time shows us that two players played in all of the games, three players in five games and one player in two games. The actual playing time of the six players involved in the study ranged between 18 and 212 minutes (Table I).

Given the purpose of the basketball game, which is to score as many points as possible against the other team, one of the important indicators of game behavior is the basketball shooting efficiency index.

An analysis of the attempted basketball shots evidences that in the case of 3-point shots, 16.15% were made by foreign players and 12.30% by Romanian players. Of the total 2-point shots, the foreign players achieved 50.30%, while the Romanians achieved only 19.24%. So, foreign players clearly stand out in what concerns basketball throws. If we analyze this proportion individually, the discrepancy is significant: 78 shots (the highest achievement) versus only 5 shots (the lowest achievement). Of all 260 throws, 178 belonged to foreign players, while 82 belonged to Romanian players. The situation is most obvious in the case of free shots, where the number of attempts carried out was 83.12% for foreigners and only 16.88% for Romanians.

Foreign players have a proportion of 53.93% regarding the efficiency of throws in action, while Romanian players have a percentage of 41.46%. Successful free throws

Table II
Shooting efficiency index.

Shots	Foreign players									Romanian players								
	MT			ZK			DK			MS			PM			PC		
	Î	R	%	Î	R	%	Î	R	%	Î	R	%	Î	R	%	Î	R	%
3 points	13	5	38.46	17	5	29.41	12	4	33.33	22	6	27.27	10	2	20.00	-	-	-
2 points	25	15	60.00	45	25	55.55	66	42	63.63	25	12	48.00	20	13	65.00	5	1	20.00
1 point	10	8	80.00	21	17	80.95	33	18	54.54	6	4	66.66	6	6	100	1	1	100

performed by foreigners represent 67.18% and those performed by native players 84.6% (Table II).

The ranking based on the scored points shows that the top three places are occupied by foreign players. From the above data, it can be seen that the contribution of foreigners is much higher than the contribution of Romanian players in what concerns the number of points scored (Table III).

In relation to game strategy, possession of the ball is an important element in the basketball game. It is obtained after a field goal scored by the opponent, as a result of misconduct, of a wrong action of a defense player or as the result of a player's individual actions (recovering the ball after a missed shot, intercepting a pass, blocking, or carrying the ball, etc.). Of all these, we focused on offensive rebounds, given their important role in ball possession. The difference between two teams in what concerns ball possession is in close connection with the number of offensive rebounds made by the members of each team (Table IV).

When comparing the game rebound averages, foreign players have an average of 6 offensive rebounds, while Romanian ones have an average value of only 4.33. This is also the case of defensive rebounds, where foreign players outperform Romanian players, by 18.66 vs. 11.66. An analysis of the other ways to obtain ball possession also shows that the foreigners outperform the Romanians (Table V).

Based on the resulting arithmetic means for the studied parameters, we made a comparison of behavior during play for Romanian and foreign players, which can represent a pattern of their game. Foreign players performed better than Romanian players in the following: 3-point field goals (2.66 vs. 1.53); successful free throws (8 vs. 2.3); offensive rebounds (1.16 vs. 0.76); defensive rebounds (3.52 vs. 2.28); steals (1.83 vs. 0.16); turnovers (6.66 vs. 3.23); assists (2.36 vs. 1.76); scored points (46 vs. 17.1).

Regarding the efficiency index, foreign players scored 49.6, having a good performance, while Romanian players scored 14.2 - a weak performance. The only parameter where the situation was reversed was represented by 2-point shots: 5.00 vs. 5.1 (Table VI).

By analyzing the game behavior during the six matches, we found that this superiority was also visible during each match taken separately. Some of the reasons for this situation are that foreign players are trained in renowned basketball schools, such as the American or the Serbian school, and that they have a vast experience in major competitions.

Conclusions

1. Regarding the game time, foreign players, having an average of 30.84 minutes, outperform by far Romanian players, who average 20.43 minutes. Foreigners play during games for 10.41 minutes more than their Romanian teammates.

2. Except for the 2-point throws, foreign players outperform local players by an average of 2.66 vs. 1.53 in 3-point throws, and 8 vs. 2.3 in free throws.

3. The foreigners' superiority is also visible in turnovers: 1.16 vs. 0.76 offensive rebounds; 3.52 vs. 2.28 defensive rebounds; 1.83 vs. 0.16 steals.

4. The foreigners' efficiency index is 49.6, while the Romanians' efficiency index is 14.2.

5. Considering these results, our hypothesis that foreign players through their results add value to the team is confirmed.

Conflicts of interest
Nothing to declare.

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