

## THE IMPORTANCE OF THE SELECTION PROCESS IN BASKETBALL. THE ANALYSIS OF THE SPECIALISTS' OPINION

M. EPURE<sup>1</sup> D. BĂDĂU<sup>1</sup>

**Abstract:** *Objective:* The purpose of this study was to identify the specialists' in the field opinion on the selection process in the basketball game. **Method:** Data were collected through a questionnaire survey consisting of 27 items, divided into two sections. In this study, 25 specialists participated, out of whom 22 were basketball coaches and 3 were Physical Education and Sports teachers, specializing in basketball. **Results:** The questionnaire had an Alpha Cronbach fidelity index value of .766. **Conclusions:** The analysis of the answers received based on the questionnaire highlights the need to improve the secondary selection process in basketball.

**Key words:** *basketball, sports selection, questionnaire.*

### 1. Introduction

The selection or "identification of talents" is an organized activity, with a repetitive character, of early detection of children with special skills for practicing certain branches or sports, based on medical, biological, socio-psychological and motor criteria [1], [15], [16]. The selection process and the analysis of the young players' potential skills has as ultimate goal their preparation for the requirements of the higher leagues and the access into these higher leagues as well as the capitalization on the basketball players' full potential [11], [18], [19]. This process of identifying talents is a complex

one because it requires defining efficient selection criteria and involving several professionals, as follows: coaches, physical trainers, doctors, kinesiologists, psychologists, etc. [13]. In general, the selection process [2] is developed in three stages:

STAGE I - the initial or primary selection, which involves attracting, discovering and selecting talented children, with skills for playing basketball.

STAGE II – the intermediate or secondary selection, which is considered the most important stage of the selection process because it takes place around the pre-pubertal period when the mental and biological stabilization takes place. The

---

<sup>1</sup> *Transilvania* University of Braşov

secondary selection is addressed to players already initiated in the practice of basketball. The investigative approach in this study covers secondary selection.

STAGE III - the final or decisive selection consists in ranking the individual values based on the knowledge accumulated in the previous stages, especially between 16 and 18 years old [3], [10], [14].

The topicality of the study is given by the specialists' in the field permanent preoccupation with this issue, which offers the possibility of continuous contributions and optimizations.

## **2. Materials and Methods**

### **2.1. Aims**

The study aims to highlight the basketball specialists' opinions on how to conduct the secondary selection process, the relevance of the players' coordination skills in the secondary selection as well as the development level of coordination skills in basketball players aged 13-15.

### **2.2. Research design**

The research follows a survey-type design based on a questionnaire, the data being collected between April and May 2018. The opinion questionnaire was distributed to coaches and teachers of Physical Education and Sports specializing in basketball in the Final Tournaments of the U13 National Championships, in which they were taking part with their teams. Regarding the research procedure, we complied with the methodological requirements related to the creation and conduct of a questionnaire-based survey [6], [21], choosing this design in order to address such a current issue in a focused and exhaustive manner.

### **2.3. Participants**

The survey was performed on a number of 25 basketball specialists working in Romania. We considered being specialists in the field of basketball the coaches who at the time of the investigation had been coaching a team of at least U13 level and teachers of Physical Education and Sports with basketball specialization and experience in physical and tactical training for the basketball game. Out of the 25 respondents, 22 were basketball coaches for women's junior teams (10), men's juniors (8) and seniors (4), and 3 teachers of Physical Education and Sports with basketball specialization. The 25 respondents' experience in the field varies from 7 to over 30 years. Regarding the composition of the group according to the respondents' gender, men predominated (80%), the number of women being of only 20%.

### **2.4. Data collection instruments and procedure**

The opinion questionnaire designed for this survey consisted of 27 items, divided into two sections. The first section of the questionnaire included 22 items to investigate the opinion on the factors of sport training and the importance, development and influence of the coordinative skill in basketball. The second part of the questionnaire included 4 items on how specialists perceived the secondary selection process in basketball. The items of the two sections were designed on a Likert scale with five possible answers (5 points), 1 point representing the minimum level and 5 points the maximum appreciation level, the participants being able to choose the answer they considered appropriate.

In order to have objective answers, the completion of the questionnaire was anonymous. The respondents were asked for details about first and last name (initials), age, experience in the field and the sports category in which they were training at that time. Prior to completing the questionnaire, the respondents were assured that all responses would be used for scientific purposes.

### 2.5. Statistical Analyses

The data were statistically processed with the IBM SPSS 20 software. The statistical analysis included the calculation of descriptive statistical indicators of central tendency and frequency of responses: relative and absolute frequency, as well as weight, responses to each item, arithmetic mean and standard deviation (SD). The Alpha Cronbach statistical index was calculated to assess the internal consistency of the questionnaire. Also, to check the relevance of the answers, we computed the student's t test. The value of statistical significance was set at  $p < 0.05$ .

### 3. Results

In this section, there are presented the most relevant results regarding the specialists' opinion on the secondary selection process in basketball and the development level of coordination skills of athletes aged 13-15.

A first analysis performed was to verify the internal consistency of the questionnaire.

The Alpha Cronbach coefficient for the 27 items was .766, which suggested a high

internal consistency of the questionnaire and allowed us to confidently analyse the responses collected in the survey. For each item in the questionnaire, we calculated the weight and frequency of participants' responses (Table 1), respectively the mean and standard deviation, the student's t test and the 95% confidence interval (Table 2).

As it can be noticed, the lowest mean of the answers is recorded for item 2 concerning the specialists' opinion on the current development level of coordination skills in basketball players aged 13-15 ( $x = 2,920$ ,  $SD = .909$ ). No respondent chose option 5 (very high level), most of them (11) choosing option 3 (medium level).

The highest means are recorded for the following items:

- Item 4 regarding the importance of specific physical training ( $x = 4.680$ ,  $SD = .476$ ) - the dispersion of the answers to this item is low, which means that the specialists' opinion on the importance of specific physical training in the 13-15-year-old basketball players' training is unitary;
- Item 19 regarding the importance of hand-eye coordination in basketball players' training ( $x = 4.920$ ,  $SD = .276$ ) - in the case of this item the specialists' opinion is also strongly polarized and unitary;
- Item 22 ( $x = 4,800$ ,  $SD = .714$ ) - the high value of the mean indicates that the specialists consider as very important the influence of the coordinative skills on the development of other motor qualities, even if the answers are not unitary.

For the whole group of respondents, the mean of the answers to the whole questionnaire is 4,111, with a standard deviation value of .916 (Table 2).

Table 1

*Statistical analysis of the mean answers on a Likert scale (5) per item in the opinion questionnaire on the secondary selection process in basketball and the development level of coordination skills*

Items	5 points N (%)	4 points N (%)	3 points N (%)	2 points N (%)	1 point N (%)
Item 1. In general, based on your experience, how do you assess the current level of specific physical training of 13-15-year-old basketball players?	-	7 (28.0)	12 (48.0)	6 (24.0)	-
Item 2. In general, based on your experience, how do you assess the current development level of coordination skills for 13-15-year-old basketball players?	-	7 (28.0)	11 (44.0)	5 (20.0)	2 (8.0)
Item 3. Evaluate the extent to which you consider the general physical training to be important in the training of 13-15-year-old basketball players.	9 (36.0)	13 (52.0)	3 (12.0)	-	-
Item 4. Evaluate the extent to which you consider specific physical training to be important in the training of 13-15-year-old basketball players.	17 (68.0)	8 (32.0)	-	-	-
Item 5. Evaluate the extent to which you consider the technical training to be important in the training of 13-15-year-old basketball players.	16 (64.0)	7 (28.0)	2 (8.0)	-	-
Item 6. Evaluate the extent to which you consider the tactical training to be important in the training of 13-15-year-old basketball players.	14 (56.0)	8 (32.0)	3 (12.0)	-	-
Item 7. Evaluate the extent to which you consider the theoretical training to be important in the training of 13-15-year-old basketball players.	5 (20.0)	11 (44.0)	5 (20.0)	2 (8.0)	2 (8.0)
Item 8. Evaluate the extent to which you consider the psychological training to be important in the training of 13-15-year-old basketball players.	6 (24.0)	7 (28.0)	7 (28.0)	2 (8.0)	3 (12.0)
Item 9. Evaluate the extent to which you consider the ability to coordinate movements to be important in the training of 13-15-year-old basketball players.	12 (48.0)	8 (32.0)	3 (12.0)	2 (8.0)	-
Item 10. Evaluate the extent to which you consider the ability of spatial-temporal orientation to be important in the training of 13-15-year-old basketball players.	10 (40.0)	7 (28.0)	6 (24.0)	2 (8.0)	-
Item 11. Evaluate the extent to which you consider the ability to maintain balance to be important in the training of 13-15-year-old basketball players.	8 (32.0)	8 (32.0)	7 (28.0)	2 (8.0)	-
Item 12. Evaluate the extent to which you consider the sense of rhythm to be important in the training of 13-15-year-old basketball players.	5 (20.0)	4 (16.0)	9 (36.0)	5 (20.0)	2 (8.0)
Item 13. Evaluate the extent to which you consider ambidexterity to be important in the training of 13-15-year-old basketball players.	6 (24.0)	7 (28.0)	10 (40.0)	1 (4.0)	1 (4.0)
Item 14. Evaluate the extent to which you consider speed as a motor quality to be important in the training of 13-15-year-old basketball players.	11 (44.0)	10 (40.0)	4 (16.0)	-	-
Item 15. Evaluate the extent to which you consider endurance as a motor quality to be important in the training of 13-15-year-old basketball players.	8 (32.0)	8 (32.0)	5 (20.0)	4 (16.0)	-

Items	5 points N (%)	4 points N (%)	3 points N (%)	2 points N (%)	1 point N (%)
Item 16. Evaluate the extent to which you consider speed as a motor force to be important in the training of 13-15-year-old basketball players.	13 (52.0)	7 (28.0)	5 (20.0)	-	-
Item 17. Evaluate the extent to which you consider coordinative skills as a motor quality to be important in the training of 13-15-year-old basketball players.	15 (60.0)	7 (28.0)	3 (12.0)	-	-
Item 18. To what extent do you consider that the development of coordination skills influences the quality of the basketball game?	15 (60.0)	10 (40.0)	-	-	-
Item 19. Evaluate the extent to which you consider hand-eye coordinate important in the training of 13-15-year-old basketball players.	23 (92.0)	2 (8.0)	-	-	-
Item 20. Evaluate the extent to which you consider the kinaesthetic differentiation important in the training of 13-15-year-old basketball players.	15 (60.0)	10 (40.0)	-	-	-
Item 21. Evaluate the extent to which you consider the speed and accuracy of motor acts to be important in the training of 13-15-year-old basketball players.	18 (72.0)	7 (28.0)	-	-	-
Item 22. To what extent do you consider that the development of other motor qualities positively influences the coordinative qualities?	15 (60.0)	7 (28.0)	3 (12.0)	-	-
Item 23. To what extent do you consider that the specific physical training specifically influences the development of coordination skills in 13-15-year-old basketball players?	12 (48.0)	7 (28.0)	5 (20.0)	1 (4.0)	-
Item 24. How do you appreciate the quality of the secondary selection made in the Romanian basketball game?	3 (12.0)	8 (32.0)	7 (28.0)	5 (20.0)	2 (8.0)
Item 25. To what extent do you consider secondary selection important in achieving sports performance?	18 (72.0)	5 (20.0)	2 (8.0)	-	-
Item 26. To what extent do you consider that coordination tests should be included in the secondary selection system?	13 (52.0)	8 (32.0)	4 (16.0)	-	-
Item 27. To what extent do you consider that the coordination skills can contribute to the optimization of the secondary selection process?	14 (56.0)	11 (44.0)	-	-	-

N-number of answers of the subjects, % -percent of the total answers / item

Table 2

*Statistical analysis of answers on the Likert scale (5) per item in the opinion questionnaire on the secondary selection process in basketball and the development level of coordination skills. / Descriptive statistics and one-sample t-test values*

Items	X	SD	One Sample t-Test		Confidence Interval (95%)	
			t	P	Lower limit	Upper limit
Item 1.	3.040	.734	20.685	.000	2.736	3.343
Item 2.	2.920	.909	16.058	.000	2.544	3.295
Item 3.	4.240	.663	31.960	.000	3.966	4.513
Item 4.	4.680	.476	49.150	.000	4.483	4.876
Item 5.	4.560	.650	35.042	.000	4.291	4.828
Item 6.	4.440	.711	31.188	.000	4.146	4.733

Items	X	SD	One Sample t-Test		Confidence Interval (95%)	
			t	P	Lower limit	Upper limit
Item 7.	3.600	1.154	15.588	.000	3.123	4.076
Item 8.	3.440	1.293	13.296	.000	2.906	3.974
Item 9.	4.200	.957	21.934	.000	3.804	4.595
Item 10.	4.000	1.000	20.000	.000	3.587	4.412
Item 11.	3.880	.971	19.974	.000	3.479	4.280
Item 12.	3.200	1.224	13.064	.000	2.694	3.705
Item 13.	3.640	1.036	17.567	.000	3.212	4.067
Item 14.	4.280	.737	29.032	.000	3.975	4.584
Item 15.	3.800	1.080	17.591	.000	3.354	4.245
Item 16.	4.320	.802	26.930	.000	3.988	4.651
Item 17.	4.480	.714	31.366	.000	4.185	4.774
Item 18.	4.600	.500	46.000	.000	4.393	4.806
Item 19.	4.920	.276	88.845	.000	4.805	5.034
Item 20.	4.600	.500	46.000	.000	4.393	4.806
Item 21.	4.720	.458	51.499	.000	4.530	4.909
Item 22.	4.800	.714	31.366	.000	4.185	4.774
Item 23.	4.200	.912	23.004	.000	3.823	4.576
Item 24.	3.200	.1.154	13.856	.000	2.723	3.676
Item 25.	4.640	.637	36.381	.000	4.376	4.903
Item 26.	4.360	.757	28.791	.000	4.047	4.672
Item 27.	4.560	.506	45.004	.000	4.350	4.769

Note:

x = mean, SD = standard deviation, t = one sample t test value (df = 24), p = significance threshold

We calculated the one-sample t test at the level of the whole questionnaire and at the level of each item in the questionnaire. As it can be seen from Table 2, the values of the student's t test are significant at a significance threshold  $p \leq .001$ . In order to have a more accurate picture of the values of the student's t test, we also included confidence intervals with a 95% level of certainty. Thus, for each item in the questionnaire we have 95% certainty that the mean of the answers is between the limits of the interval.

These results indicate that the mean of the responses given by specialists included in this study is significant and representative for showing the Romanian basketball specialists' opinion on the development and efficiency of the secondary selection process in the basketball game by developing coordination skills.

#### 4. Discussions

Starting from the statistical analysis of the specialists' opinion regarding the development of the secondary selection process and the role of sports training factors in this process, we can argue that the secondary selection process can be optimized by developing coordination skills.

Our results are in line with other previous studies.

Thus, regarding the quality of sports selection, in team sports, a study conducted in 2019 in which 109 Romanian specialists in sports games participated, highlighted the fact that the majority of respondents (33.93%) considered the level of this process to be low, 28.82 % of coaches indicated a satisfactory level, and 17.43% of them considered the quality of the selection process very poor [17]. Another study found that one of the

factors that could influence the selection process was the age at which athletes were initially selected [10], as a late initial selection decreased the athlete's chances of assertion, while another study argued that the athletes' selection depending on somatic criteria might not be related to the skills specific to the basketball game [4]. Both cited studies, as well as the results obtained in this survey, support the relevance of coordinative skills in secondary selection in the basketball game.

Also, previous research on both individual and team sports has shown that the selection process is not based on specific and customized criteria for detecting athletes with skills for playing basketball [2], [7], [8], but rather on the basis of general criteria associated with sports skills. Other studies have highlighted the need to make the sports selection process more effective [12], [20], [22], some of which showing the statistically significant differences that the development of coordination skills introduces in streamlining the selection process [5], [9].

## 5. Conclusions

The analysis of the answers received to the opinion questionnaire highlights the need to improve the secondary selection process in basketball, but also the importance of developing the coordination skills at the age of 13-15. Based on these results, we consider it appropriate to develop and test specific criteria for secondary selection in the basketball game. The items with the highest values were 19, 22, while item 2 recorded the lowest values from respondents.

## References

1. Bădău, D., Paraschiv, F.: *Jocurile sportive, teorie și metodică (Sports games, theory and methodology)*. Brașov, Universitatea Transilvania din Brașov, 2017.
2. Barth, M., Gullich, A., Emrich, E.: *The rich get richer and the poor get poorer-The Mathew mechanism as an approach to explain selection effects and the occurrence of multiple medalists in the "production" of international success in alpine ski racing*. Current Issues in Sport Science (CISS), 2018.
3. Berceanu, D., Moanță, A.D.: *Concepția unitară de joc și pregătire pe nivele formative (The unitary conception of play and training on formative levels)*. București, Editura PRINTECH, 2007.
4. Carlos, E.B., Luís, G., Rama, M.L., Figueiredo, A.B.: *Talent Identification and Specialization in Sport: An Overview of Some Unanswered Questions*. In: International Journal of Sports Physiology and Performance, 2012, Vol. 7, no.4, p. 390-393.
5. Coelho, E., Silva, M.J., Moreira Carvalho, H., Goncalves, C.E., Figueiredo, A.J., Elferink-Gemser, M.T., Philippaerts, R.M., Malina, R. M.: *Growth, maturation, functional capacities and sport-specific skills in 12-13 year-old-basketball players*. In: The Journal of Sports Medicine and Physical Fitness, 2010, 50(2), 174-81.
6. Epuran, M.: *Metodologia cercetării activității corporale (Body activity research methodology)*. București, CCPS, 1992.
7. Ford, R.P., Bordonau, D.J.L., Bonanno, et al.: *A survey of talent identification and development processes in the*

- youth academies of professional soccer clubs from around the world.* In: Journal of Sports Sciences, 2020, 38(11-12), p. 1269-1278.
8. Gullich, A.: *Selection, de-selection and progression in German football talent promotion.* European Journal of Sport Science, 2013, Vol. 14, no.6, p. 530-537. Available at: <https://doi.org/10.1080/1741391.2013.858371>
  9. Irwan, M. S., Lismadiana: *The effect of exercise methods and coordination towards students' extracurricular basketball skills.* In: Advances in Social Science, Education and Humanities Research, 2018, vol. 278.
  10. Kalen, A., Lundkvist, E., Ivarsson, A., et al.: *The influence of initial selection age, relative age effect and country long-term performance on the re-selection process in European basketball youth national teams.* In: Journal of Sports Sciences, 2020, Vol.39, no.4, p. 388-394, DOI: 10.1080/02640414.2020.1823109
  11. Oancea, B.M., Bondoc-Ionescu, D.: *The influence of a specialized methodology in order to develop free throws in u14-u15 basketball competitive yield.* In: Anualele Universităţii din Oradea, Fascicula Educaţie Fizică şi Sport, 25, 2015, p. 16-26.
  12. Oancea, B.M.: *Study of improving second selection strategy in women's basketball.* In: Scientific Journal of Education, Sports and Health, Gymnasium, Vol.1, no.17, 2016, p. 7-13.
  13. Perez-Toledano, M.A., Rodriguez, J.F., Garcia-Rubio, J., et al.: *Player's selection for basketball teams, through Performance Index Rating, using multiobjective evolutionary algorithms.* In: PLOS ONE, vol. 14, no. 9. Accessed 29.07.2020, available at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0221258>
  14. Pop, C., Feflea, I., Roşca, E.: *A theoretical and practical-methodical approach to primary selection in basketball.* In: Anualele Universităţii din Oradea, Fascicula Educaţie Fizică şi Sport, 27, 2017, p. 45-51.
  15. Potop, V., Grigore V., Moraru, C.: *Analysis of the sensorimotor coordination development influence on sports performances in Women's Artistic Gymnastics.* In: Discobolul – Physical education, Sport and Kinetotherapy, Vol. 4, no.34, 2013, p. 71-80.
  16. Răduţ, C.: *Criterii de selecţie în sport (Selection criteria in sports).* Bucureşti, Editura C.N.E.F.S., 1967.
  17. Tohănean, D. I.: *Selection in team sports – Analysis of specialist opinion.* In: Bulletin of the Transilvania University of Braşov, Vol.12(61), 2019, p. 77-84.
  18. Trninic, S., Papic, V., Trninic, V., et al.: *Player selection procedures in team sports games.* In: Acta Kinesiologica 2, 2008, p. 24-28.
  19. Trunic, N.: *Trening mladih kosarkasa razlicitih uzrasnih kategorija.* Beograd, Skola za sport, 2007.
  20. Trunic, N., Mladenovic, M.: *The importance of selection in basketball.* In: Sport-Science & Practice, Vol.4, no.2, 2014, p. 65-81.
  21. Turcu, I.: *Metodologia cercetării în educaţie fizică şi sport (Research methodology in physical education and sport).* Braşov, Universitatea Transilvania din Braşov, 2007.
  22. Vaquera, A., Santos, S., Villa, J.G., et al.: *Anthropometric Characteristics of Spanish Professional Basketball Players.* In: Journal of Human Kinetics, 46/2015, p. 99-106. DOI: 10.1515/hukin-2015-0038