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STUDY REGARDING THE CORRELATION BETWEEN THE LENGTH OF THE EXTREMITIES (INFERIORS-SUPERIORS) AND THE EXECUTION TECHNIQUE OF THROWING TO THE BASKET FROM DRIBBLING WITHIN THE COURSE OF BASKETBALL

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Abstract

This article answers objectively to if there is a relation between the efficiency of throwing to the basket from dribbling technical execution and the length of extremities (superiors – inferiors) of students, who are evaluated at the end of the basic course.

Keywords: *throwing to the basket from dribbling, students, upper limbs, legs, basketball and basic course.*

INTRODUCTION

In basketball most experts believe that height as well as other anthropometric parameters has a dominant role for playing basketball. The selection aims to detect the persons falling within the superior limits, takes place according to certain criteria and tests, among others, the somatic test. It sets the overall physical development and the parameters necessary to obtain favorable results in the game of basketball, and the method is called somatometry (anthropometry). Measurements made using the method aim to determine in particular lengths, perimeters, diameters of body segments: length of upper limbs, lower limbs, palm length, etc.

Studies similar to the problem proposed by this research have been carried out by the authors S. Miller R. Bartlett (1996), A. S. Sisodiya, M. Yadav (2010) who determined the relation between the anthropometric measurements and the ability to play basketball (Jonshon basketball test).

O.L. Dominic (2006) studied the relationship between the length of different parts of the body

and the capacity to shoot of Kwara States team players (Nigeria) and found out that there were no significant differences. According to the calculations made, there is no body segment to contribute independently to effecting the movement of throwing but their integration, coordination in sequential combinations ensure good muscle control.

O. Dean, (2004) believes that height is more important to successful offensive actions compared with the actions of defense.

The throwing at basket is the technical element benefiting from most attention in the learning process in all categories of training. This requires precision in execution and therefore personal responsibility. The literature recommends a number of somatic criteria required for a basketball player (T. Predescu, A.D. Moanță, 2001; D. Berceanu, A.D. Moanță et al., 2007, etc.). In many cases there is confusion about these parameters (somatic, motive, psychological, etc.) which certainly influence the effectiveness of execution of the

technical elements and procedures specific to basketball.

The evaluation of technical progress of the students practicing basketball within the basic course is a compulsory measure. It aims to find out if the students acquired qualitatively and quantitatively the fundamental components of the game and if they have the capacity to exploit them in practice.

RESEARCH HYPOTHESIS

If we assume that not all students fall into the specific anthropometric parameters of the game, is there a link between the efficiency of the execution technique of dribble slam dunk and limbs length (lower - upper) that can influence their evaluation?

Purpose: to determine the relation between limbs length (lower - upper) and the efficiency of the execution technique of throwing at basket from dribbling of the students evaluated at the end of the basic course in the field of basketball.

THE RESEARCH METHODS

Used during this study were as follows: the method of studying specialized bibliography, observation method, the method of the somatometry (anthropometry), statistical and mathematical method (arithmetic mean, standard deviation and Pearson correlation coefficient), graphical and tabular method.

SUBJECTS

The research was conducted on a sample of 20 students (boys) aged 20-25 years, forming two groups („A” and „B”). In the group “A” the height of the students selected ranged between 1.80 m – 1.96m (above average values) and in group “B” it ranged between 1.68m -1.76m (normal values). We mention that no student practiced basketball in a sports club or in the previous educational levels.

ORGANIZING AND CONDUCTING THE RESEARCH

This study was conducted from October 2012 - January 2013 at the Faculty of Physical Education and Sport in Galati. The distribution of the training activities within the subject matter “Theoretical and methodological fundamentals of basketball” is done on a semester, including 28 hours of theoretical courses and 42 hours of practical courses. This study was based on the anthropometric measurements and data obtained from the technical test of throwing at basket from dribbling of the two samples recorded at the end of the basic course.

To check the working hypothesis we considered necessary to test the following anthropometric variables: height, length of upper limbs (arm, forearm, and hand) and lower limbs (thigh - hip - knee, shank - knee-ankle). The instrument used for measuring was metric tape. The assessment of the assimilation level of the technique of throwing at basket from dribbling was made using it as a technical control test.

Description of the technical test is as follows:

From an angle of 45 degrees to the backboard, the students performed dribbling and shooting, followed by a rebound. The executions were assessed by the teacher positioned laterally. Each student conducted ten throws on the left side and respectively on the right side of the basketball backboard using adequately the throwing arm. For objectivity of the evaluation both technical execution (technical process was defined sequentially and the teacher appreciated each phase) and performance (number of successful throws) were considered.

The grading system used was numerical expressed by figures from 1 to 10. The two variants of the technical test were assessed according to some grading scales established by us (Table 1).

Table 1 Grading scale to give students marks for the technical tests – throwing at basket from dribbling

Standard number of successful throws	Mark
10	10
9	9
8	8
7	7
6	6
5	5
4	4
3	3
2	2
1	1

For each successful throw the student has been granted one point, and the sum of points was the

final mark for the process of throwing at basket from dribbling.

PROCESSING AND INTERPRETATION OF DATA

The analysis and interpretation of data from statistical point of view for the average and standard deviation at each variable of the two samples was made using the tutorial Usable Statistic coordinated by Jeff Sauro (<http://www.usablestats.com/calcs/2sample1>). In order to determine the relation between the anthropometric parameters (height, length of arm, forearm, hand, thigh, shank) and the technical procedure of throwing at basket from dribbling Pearson correlation coefficient (r) was calculated using the formula:

$$r = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2 \sum(y-\bar{y})^2}}$$

The correlation coefficient (r) establishes the intensity of the connection between two variables, when this connection is a linear one. When the result tends towards extremes ± 1 , the link between the variables x and y is stronger, and, as the result approaches 0, the connection intensity decreases.

RESULTS AND DISCUSSIONS

The descriptive analysis of the anthropometric parameters measured, the arithmetic mean (M), and standard deviation (SD) for the two samples of research have been summarized in Table 2.

Table 2 Statistical results for the anthropometric variables of the groups "A" and "B"

Anthropometric parameters		Group „A” (N= 10)		Group „B” (N= 10)	
		M	±SD	M	±SD
Upper limbs	Height (cm)	1.86	0.04	1.72	0.02
	Arm length (cm)	33.9	3.60	26.7	2.21
	Forearm length (cm)	27.4	1.77	24.9	1.91
	Hand length (cm)	17.3	1.09	16.8	0.78
Lower limbs	Thighs (hips-knees) (cm)	54.3	3.86	49	2.70
	Shank (knees, ankle) (cm)	45.5	3.97	38.3	2.89

The data in Table 3 present the descriptive analysis of the statistical parameters, the arithmetic mean (M) and standard deviation (SD) for the two

samples of research in the technical test of throwing at basket from dribbling.

Table 3 Statistical results for the technical test of throwing at basket from dribbling of the groups "A" and "B"

The technical test -throwing the basket from dribbling		Group „A” (N= 10)		Group „B” (N= 10)	
		M	±SD	M	±SD
The technical test	Successful throws with right arm	7.8	1.61	7.6	1.77
	Successful throws with left arm	6,2	2.48	5.6	3.13
Marks obtained	Marks for successful throws with right arm	7.8	1.61	7.6	1.77
	Marks for successful throws with left arm	6.2	2.48	5,6	3.13
	Final mark	7	1.66	6.6	2.05

The arithmetic mean of the marks obtained at test by the group "A" was 7.8 for executions with right arm and 6.2 for the left arm. The difference between the averages of 1.6 highlights a good technical execution with the right arm; percentage assessment is 1.6 %.

For group "B" the arithmetic mean of the marks obtained at test is 7.6 for executions with right arm and 5.6 for the left arm. The difference between the average values is 2 which emphasize learning the technique of execution with the right arm; percentage assessment is 2% and we find that it is superior to that of group "A".

The descriptive analysis of statistical indicators for the test of dribble slam dunk made on the two samples with the right arm and respectively with the left arm is presented in tables 4 and 5. Student

Test reflects an insignificant value of the differences between the two final averages ($t=0.26$; $p>0.05$ and $t=0.47$; $p>0.05$).

Table 4 Values of statistical indicators for throwing at basket from dribbling with right arm, group "A" and "B"

	N	Mean	StDev	SE Mean
Sample 1 (group "A")	10	7.8	1.6193	0.512
Sample 2 (group "B")	10	7.6	1.7764	0.562

Observed difference (Sample 1 - Sample 2): 0.2
Standard Deviation of Difference : 0.7601
Unequal Variances
DF : 17
95% Confidence Interval for the Difference (-1.4037, 1.8037)
T-Value 0.2631
Population 1 \neq Population 2: P-Value = 0.7956
Population 1 > Population 2: P-Value = 0.6022
Population 1 < Population 2: P-Value = 0.3978

Equal Variances
Pooled Standard Deviation: 1.6997
Pooled DF: 18
95% Confidence Interval for the Difference (-1.3969, 1.7969)
T-Value 0.2631
Population 1 \neq Population 2: P-Value = 0.7954
Population 1 > Population 2: P-Value = 0.6023
Population 1 < Population 2: P-Value = 0.3977

Table 5 Values of statistical indicators for throwing at basket from dribbling with left arm, group "A" and "B"

	N	Mean	StDev	SE Mean
Sample 1 (group "A")	10	6.2	2.4855	0.786
Sample 2 (group "B")	10	5.6	3.134	0.991

difference (Sample 1 - Sample 2): 0.6
Standard Deviation of Difference : 1.2649
Unequal Variances
DF : 17
95% Confidence Interval for the Difference (-2.0687, 3.2687)
T-Value 0.4743
Population 1 \neq Population 2: P-Value = 0.6414
Population 1 > Population 2: P-Value = 0.6793
Population 1 < Population 2: P-Value = 0.3207
Equal Variances
Pooled Standard Deviation: 2.8284

Pooled DF: 18
95% Confidence Interval for the Difference (-2.0574, 3.2574)
T-Value 0.4743
Population 1 \neq Population 2: P-Value = 0.641
Population 1 > Population 2: P-Value = 0.6795
Population 1 < Population 2: P-Value = 0.3205

The correlation between anthropometric variables and the technical test of dribble slam dunk are presented in table 6.

Table 6 The results of the coefficient of correlation between anthropometric variables and the technical test of throwing at basket from dribbling

Variables		Group „A”	Group” B”
		r	r
Upper limbs	Height x throwing at basket from dribbling	-0,07	- 0,22
	Arm length x throwing at basket from dribbling	- 0,27	- 0,01
	Forearm length x throwing at basket from dribbling	- 0,15	-0,28
Lower limbs	Hand length x throwing at basket from dribbling	-0,18	-0,12
	Thighs (hips-knees)x throwing at basket from dribbling	-0,15	- 0,13
	Shank (knees, ankle)x throwing at basket from dribbling	- 0,24	-0,05

CONCLUSION

1. The values obtained by statistical calculations indicate that there is no significant relationship between the longitudinal anthropometric variables proposed for study and the execution of the technique of dribble slam dunk for any of the groups of research.
2. The longitudinal anthropometric variables did not influence the execution by the students of the procedure dribble slam dunk at the final evaluation of the basic course in the field of basketball.
3. The data obtained invalidated the hypothesis of the study which shows that the evaluation was unbiased and focused on the observable component of students' training, namely the execution from technical and performance point of view (number of successful throws).
4. We believe that when the final assessment of students' practical works is carried out, we should eliminate the factors related to their biometric qualities (height, weight, age) previous experience, presence of motivation, to focus attention on the quality and quantity of accumulated knowledge, not on the details.

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EXPERIMENTAL STUDY ON SPEED DEVELOPEMENT IN CHILDREN OF 14-15 YEARS, PRACTICING THE FOOTBALL GAME

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Abstract

The purpose of this study is to study the efficiency of speed development in children of 14-15 years, practicing the football game.

Also, the intention was to develop and conduct an experiment that would provide information about the manner of speed development, about its role and importance in the entire training program applied in football for the category of 14-15 years.

Another purpose was to critically establish the capacity level after conducting the experiment, in order to demonstrate the efficiency of the means and tryouts used in the training process.