



# Normative Base for Control and Assessment of the Achievements of Students Practicing futsal in the University of National and World Economy

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## Abstract

*Students in UNWE have the possibility to practice futsal in the process of education on the discipline „Physical education and sport”, and of course, those of them possessing the necessary qualities represent the university on multiple futsal championships and tournaments, as a part of the futsal representative team of UNWE. One of the significant problems in the contemporary sport training is that of the control and optimization of the sport preparation. „Control is a part of the cognitive activity of human being, for collection of information and assessment of the actual state of a given object, in view of its purposeful development and perfection [7]. Main target of the control in sport is to optimize the training and contesting process through impartial information of the effect of the applied training impacts on sportsman. Subject of the control are the main factors of the sport achievement that significantly correlate to the sport achievement and are open to development and management under the influence of the training means and methods. The most generalizing criterion for trainability is the sport result shown at the matches. However, it does not allow controlling the separate parts of the sport preparation (physical, technical, tactical and etc.). Therefore, system of tests (test batteries) is used, giving opportunity to define the level on the separate components of the sport preparation. Test battery used for controlling and assessment of students practicing futsal includes 7 tests, estimating the physical and technical preparation.*

*Key words: control, assessment, students, futsal.*

## 1. Introduction

Futsal is a sport distributed on a mass scale, both all over Europe and the world. It is a fact that from 2018 on, futsal will be a part of the Youth Olympic Games in Buenos Aires [3]. As a guarantee for the future development of the game, UEFA obliges all professional clubs in Greece to establish and develop futsal teams until 2018 [1]. All this is a guarantee for a better future of this sport, gaining more and more fans from all over the world.

One of the important problems in the contemporary sport training is that of the control and optimization of the sport preparation. „Control is a part of the cognitive activity of human being, for collection of information and assessment of the actual state of a given object, in view of its purposeful development and perfection [7]. The most generalizing criterion for trainability is the sport result shown at the matches. However, it does not allow controlling the separate parts of the sport preparation (physical, technical, tactical and etc.). Therefore, a system of tests (test batteries) is used, giving an opportunity to define the level on the separate components of the sport preparation.

Similar problems have been considered by [4, 5, 8, 10] too.

## 2. Target, organization and methods

### 2.1 Target of the investigation

The target of the investigation has been the establishment of an efficient system for control and assessment of the sport preparation of futsal players, training in the University of National and World Economy. It could serve for selection of players for futsal teams in higher schools too.

### 2.2 Object of investigation

Object of the investigation were the students from UNWE, who are a part of the representative futsal team of the university. 26 players training futsal twice weekly, 90 minutes each and participating in student and amateur championships and tournaments on futsal.

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### 2.3 Organization of the investigation

All tests have been carried out in sport complex „Bonsist” – Students’ town, Indoor 3 „Football and futsal”. Investigation has been held in April 2012, 7 control norms for assessment of the technical and physical preparation.

List of tests, used at control checking up

Table 1

No of test	Name of the test	Measure units	Accuracy
1	20 m shuttle run (Beep test)	Level and step	1 <sup>st</sup> step
2	5 m sprint from standing position	sec.	0,01 sec
3	15 m sprint from standing position	sec	0,01 sec
4	Standing position long jump	m cm	1 cm.
5	Combined test – dribble between stands, shooting at the door 3m/2m, sprint	sec	0,01 sec
6	Arrow (Arrowhead agility)	sec	0,01 sec
7	Arrow with ball (Arrowhead agility with ball)	sec	0,01 sec

### 2.4 Mathematic – statistical methods

Data got has been subjected to mathematic-statistical processing, through the specialized computer programme „SPSS” and „Excel”. Variance analysis and SIGMA method have been applied for working out of norms. Examination of the values received shows a normal distribution and that gives us a reason to apply the SIGMA method of Martin for development of the norm basis.

### 3. Results and discussion

Control is an important factor for the development of the sport achievement and its quality. Product of the sport activity of students, including those from the joint/team sports of the higher schools, is a result from the applied training programmes for their preparation. To complete the process selection-preparation-control-assessment, it is necessary to draw the attention on the control of students’ results [5].

Variance analysis of values of indices from the results got

Table 2

	Index	n	Xmin	Xmax	R	$\sigma^2$	$m\sigma$	S	V	As	Ex	JB	sig
1	VO2max	26	40,2	52,9	12,7	48,55	0,62	3,14	6,46	-1,039	0,709	5,222	0,073
2	5m sprint	26	1,11	1,48	0,37	1,25	0,02	0,11	8,49	0,745	-0,551	2,734	0,255
3	15m sprint	26	2,49	3,01	0,52	2,72	0,02	0,13	4,61	0,226	-0,200	0,265	0,876
4	Long jump	26	1,9	2,4	0,5	2,21	0,02	0,12	5,50	-0,519	0,453	1,390	0,499
5	Combined test	26	33,47	38,35	4,88	36,04	0,25	1,30	3,60	-0,019	-0,695	0,525	0,769
6	Arrow test	26	16,73	19,48	2,75	17,77	0,14	0,72	4,03	0,299	-0,423	0,581	0,748
7	Arrow with ball test	26	19,12	25,98	6,86	22,21	0,34	1,74	7,85	0,201	-0,470	0,414	0,813

Variance analysis of values of indices from the results got (Table 2), gives us an information that the group is homogeneous ( $V \leq 10\%$ ). Low variance of the bigger part of indices is logic, especially as concerns the indices for physical preparation. Values of coefficients of asymmetry (As) and excess (Ex) are within ranges indicating that the distribution of indices is close to the normal.



By the help of the SIGMA method for working out of norms [6], a normative table has been formed for assessment of the physical ability and technical preparation of students, practicing futsal in UNWE. Normative table for assessment of physical ability and technical preparation of students practicing futsal in UNWE

Table 3

Score „P“	Score „Z“	Score „T“	VO2	5 m sprint	15 sprint	long jump	Combined test	Arrow test	Arrow test with ball	Verbal Evaluation
99,38	2,5	75	56,40	0,98	2,40	2,51	32,79	15,97	17,86	High
99,18	2,4	74	56,09	0,99	2,41	2,50	32,92	16,04	18,03	High
98,93	2,3	73	55,77	1,00	2,42	2,49	33,05	16,11	18,21	High
98,61	2,2	72	55,46	1,01	2,43	2,47	33,18	16,19	18,38	High
98,21	2,1	71	55,14	1,02	2,45	2,46	33,31	16,26	18,56	High
97,72	2,0	70,0	54,83	1,03	2,46	2,45	33,44	16,33	18,73	High
97,13	1,9	69	54,52	1,04	2,47	2,44	33,57	16,40	18,90	Above average
96,41	1,8	68	54,20	1,05	2,49	2,43	33,70	16,47	19,08	Above average
95,54	1,7	67	53,89	1,06	2,50	2,41	33,83	16,55	19,25	Above average
94,52	1,6	66	53,57	1,07	2,51	2,40	33,96	16,62	19,43	Above average
93,32	1,5	65	53,26	1,09	2,53	2,39	34,09	16,69	19,60	Above average
91,92	1,4	64	52,95	1,10	2,54	2,38	34,22	16,76	19,77	Above average
90,32	1,3	63	52,63	1,11	2,55	2,37	34,35	16,83	19,95	Above average
88,49	1,2	62	52,32	1,12	2,56	2,35	34,48	16,91	20,12	Above average
86,43	1,1	61	52,00	1,13	2,58	2,34	34,61	16,98	20,30	Above average
84,13	1,0	60,0	51,69	1,14	2,59	2,33	34,74	17,05	20,47	Above average
81,59	0,9	59	51,38	1,15	2,60	2,32	34,87	17,12	20,64	Average
78,81	0,8	58	51,06	1,16	2,62	2,31	35,00	17,19	20,82	Average
75,80	0,7	57	50,75	1,17	2,63	2,29	35,13	17,27	20,99	Average
72,57	0,6	56	50,43	1,18	2,64	2,28	35,26	17,34	21,17	Average
69,15	0,5	55	50,12	1,20	2,66	2,27	35,39	17,41	21,34	Average
65,54	0,4	54	49,81	1,21	2,67	2,26	35,52	17,48	21,51	Average
61,79	0,3	53	49,49	1,22	2,68	2,25	35,65	17,55	21,69	Average
57,93	0,2	52	49,18	1,23	2,69	2,23	35,78	17,63	21,86	Average
53,98	0,1	51	48,86	1,24	2,71	2,22	35,91	17,70	22,04	Average
50,00	0,0	50,0	48,55	1,25	2,72	2,21	36,04	17,77	22,21	Average
46,02	-0,1	49	48,24	1,26	2,73	2,20	36,17	17,84	22,38	Average
42,07	-0,2	48	47,92	1,27	2,75	2,19	36,30	17,91	22,56	Average
38,21	-0,3	47	47,61	1,28	2,76	2,17	36,43	17,99	22,73	Average
34,46	-0,4	46	47,29	1,29	2,77	2,16	36,56	18,06	22,91	Average
30,85	-0,5	45	46,98	1,31	2,79	2,15	36,69	18,13	23,08	Average
27,43	-0,6	44	46,67	1,32	2,80	2,14	36,82	18,20	23,25	Average
24,20	-0,7	43	46,35	1,33	2,81	2,13	36,95	18,27	23,43	Average
21,19	-0,8	42	46,04	1,34	2,82	2,11	37,08	18,35	23,60	Average
18,41	-0,9	41	45,72	1,35	2,84	2,10	37,21	18,42	23,78	Average
15,87	-1,0	40,0	45,41	1,36	2,85	2,09	37,34	18,49	23,95	Below average
13,57	-1,1	39	45,10	1,37	2,86	2,08	37,47	18,56	24,12	Below average
11,51	-1,2	38	44,78	1,38	2,88	2,07	37,60	18,63	24,30	Below average
9,68	-1,3	37	44,47	1,39	2,89	2,05	37,73	18,71	24,47	Below average
8,08	-1,4	36	44,15	1,40	2,90	2,04	37,86	18,78	24,65	Below average
6,68	-1,5	35	43,84	1,42	2,92	2,03	37,99	18,85	24,82	Below average
5,48	-1,6	34	43,53	1,43	2,93	2,02	38,12	18,92	24,99	Below average
4,46	-1,7	33	43,21	1,44	2,94	2,01	38,25	18,99	25,17	Below average
3,59	-1,8	32	42,90	1,45	2,95	1,99	38,38	19,07	25,34	Below average
2,87	-1,9	31	42,58	1,46	2,97	1,98	38,51	19,14	25,52	Below average
2,28	-2,0	30,0	42,27	1,47	2,98	1,97	38,64	19,21	25,69	Low
1,79	-2,1	29	41,96	1,48	2,99	1,96	38,77	19,28	25,86	Low
1,39	-2,2	28	41,64	1,49	3,01	1,95	38,90	19,35	26,04	Low
1,07	-2,3	27	41,33	1,50	3,02	1,93	39,03	19,43	26,21	Low
0,82	-2,4	26	41,01	1,51	3,03	1,92	39,16	19,50	26,39	Low
0,62	-2,5	25	40,70	1,53	3,05	1,91	39,29	19,57	26,56	Low

#### 4. Conclusions and recommendations

Test battery used for control and assessment of students practicing futsal, includes 7 tests evaluating the physical and technical preparation. We deem that the so selected control tests, could present the level of the specific physical and technical abilities, for the successful practicing of the game, very precisely.

The investigated persons (26) is not a sample enough for making general conclusions, but they are a possibility for those working in the field of futsal in higher schools, to assess the level of ability of students practicing futsal, as well as to select qualitative players for their teams. There has been a



developed and acting educational programme on futsal, existing since 2016 in UNWE, on the subject Physical culture and sport, it would give an opportunity for new investigations to be carried out, and also to supplement and update the created normative base for control and assessment of the achievements of students practicing futsal, in the University of National and World Economy.

Great part of the investigated persons fall among the average score of the norm (its verbal value), that could be a disadvantage, but the use of T-scores at working out of a normative base eliminates this risk, and nevertheless it falls among the average value, each result is identified by a certain point equivalent.

Actual normative base gives an option for regular scientific self-control of the preparation of students in their free time and at organized trainings out of the educational process in HS (amateur championships and tournaments, company tournaments and etc.)

The system developed for control and assessment of the sport preparation of futsal players is an important step forward for making futsal popular among the students community in Bulgaria.

Main recommendation is that this investigation should not remain as an end in itself, but to enrich the database by an increased volume of the sample (carrying out of surveys with the students trained on the educational programme "Futsal" to Physical culture and sport subject), and at that, even the test battery could be also used by other colleagues working in the area of higher education. It could give an opportunity for building of an extremely significant normative base for assessment of the achievements of students practicing futsal, and that could be used in practice in the future.

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