Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH
Vol. XVII, ISSUE 2 Supplement, 2017, Romania
The journal is indexed in: Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST,
DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengace Learning, Cabell's Directories

Science, Movement and Health, Vol. XVII, ISSUE 2 Supplement, 2017
September 2017, 17 (2, Supplement): 243-249
Original article

OPTIMIZATION OF SPECIFIC TRAINING IN VOLLEYBALL FOR JUNIORS

COJOCARU Adin Marian[1], COJOCARU Marilena[1]

Abstract*

Aim. Changes in the volleyball world, both in terms of maximizing parameters and content structure and level request players physically, mentally, bio-motility technical and tactical confirms once again the need to find the most efficient ways optimization and support capacity of performance.

This study aims to determine the level of specific training subjects and assessing the effectiveness of work programs implemented to optimize training echelon competitive junior volleyball players.

Methods. As a working method I used:

- bibliographic documentation;
- interpretation of statistical and mathematical method;
- graphical representation method;

Results. It is noted that both the physical evidence applied, but also the driving show an increased value of motor function in both groups included in the experiment, with more progress meant the group experiment - reflected the significant differences recorded between the averages of both groups testing final.

Conclusions. Confirming the hypothesis that optimization training model - through the selection and application training pathways for specific training complex - can provide an increase in performance of junior volleyball players providing of educational objectives and the performance of the team.

Key words: optimization, specific training, volleyball, juniors

Introduction

Changes in world-wide volleyball, both in terms of maximizing content and structure parameters, as well as physical, psychological, biomotorical and tactical tactical levels, confirm once more the need to find the most effective ways to optimize and support capacity of performance.

Seen beyond its own complexity, generated by the quality of its subject - the athlete, the performance capability, is presented by Dragnea and Mate-Teodorescu, 2002, as a "sum of capacities" (including motor and exercise capacity); Can be optimized by improving its components and relationships.

Starting from these aspects - to which are added the evolution trends of the game itself, what should also be reflected in the training process, respectively, to provide the player with a high functional capacity to allow the good potential of the technical -tactic - the need to optimize the performance of the volleyball player is outlined, and this must be done even from the level of children and juniors.

Recent trends in achieving high-quality technical executions at junior level require, besides technical-tactical component and good physical training, the basis of performance and efficiency support (Kus, 2004).

At this level, physical training is the first component to focus on creating motor-functional support to support the specific effort of this sport.

The objectives of general physical training aim at "maintaining the motoric indicators at the level of the development norms of each individual, the quenching of the organism by diversified methods and means, the recovery of the organism by means and methods in natural environments, the development of the motor capacity to the level required by the social model". (Ionescu-Bondoc, 2008)

The continuous improvement of the programs, through the involvement of the specialists in the physical training, led to their development by creating sporting materials, for didactic, innovative purpose, which requires complex efforts from the athletes (Colibaba-Evuleț, Bota, 1998).

Research Hypotheses

- Optimization model of training - training in the selection and application of complex means for specific training - can provide an increase in performance of junior volleyball players.

- Applying in the preparation of specific technical-tactical structures on the playing phases can lead to the increase of the motorcycle baggage of the athletes and implicitly to the expansion of the ability to express effectively during the game, contributing to the achievement of the instructive-educational objectives and of the team's performance.

Methods

Method literature study

Observation method

[1]Faculty of Physical Education and Sport, Spiru Haret University, Bucharest, ROMANIA
E-mail address: adincojocaru@yahoo.com
Received 12.03.2017 / Accepted 01.04.2017

* the abstract was published in the 17th I.S.C. "Perspectives in Physical Education and Sport" - Ovidius University of Constanta, May 18-20, 2017, Romania

Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH
Vol. XVII, ISSUE 2 Supplement, 2017, Romania
The journal is indexed in: Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST,
DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengace Learning, Cabell's Directories

Experiment method

The test method - the dynamics of the motor profile was followed by the following FRV test pieces: vertical jump, pushing, reaching the maximum point with one hand; Jumping vertically, on the spot, reaching the maximum point with two hands; Triple jump on two on two legs; 4m lateral displacement; Forward and backward movement over the 6m x 5 repeats; Abdomen and frontal flexibility.

The assessment of the level of training of the subjects, namely their evaluation on the game phases (and the evaluation of the service), was made in the framework of friendly games.

Statistical-mathematical method

The Graphical Representation Method

The study comprised two samples consisting of:

1. The experiment group consists of 12 athletes of the national cadet group.
2. The control group comprises 12 athletes from the Blaj Sports Club, cadets.

Results

In order to observe the evolution of the groups in the experiment, we calculated the progress in absolute value and in percentages ($D_{21} = T_2 - T_1$; $D_{21}(\%) = \frac{T_2 - T_1}{T_1} * 100$, where: T_1 – Initial testing; T_2 - final testing), but also the differences between group averages ($\overline{X}$ Ge- $\overline{X}$ Gc) to the two tests. To verify whether the differences between the calculated averages are significant or not, we applied the Student Test.

Table 1 The statistical parameters and differences calculated for one-handed jump

	Experiment group (Ge)				**Control group (Gc)**				**$\overline{X}$ Ge - $\overline{X}$ Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(cm)	(%)			(cm)	(%)	(cm)	(%)	(cm)	(%)
$\overline{X}$	309,36	312,93	3,57	1,15	301,17	303,33	2,16	0,72	8,19	2,72	9,60	3,16
S	13,05	13,02	-	-	7,69	8,79	-	-				
Cv	4,22	4,16	-	-	2,55	2,90	-	-				
t	t_c=8,594>3,012(t_t) p<0,01				t_c=4,913>3,106(t_t) p<0,01				t_c=1,91<2,064(t_t) p>0,05		t_c=2,16>2,064(t_t) p<0,05	

Evolution of the experimental group:

Between initial testing and final testing there was a performance increase of 1.15% (3.57cm). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). The Student test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$ = 8.594> 3.012 = t_{table}, p <0.01).

Evolution of the control group:

The increase recorded between the two tests is 0.72% (2.16cm). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). Applying the Student Test, it is noted that the difference between the averages of the two tests is significant ($t_{calculated}$ = 4.913> 3.106 = t_{table}, p <0.01).

Differences between group averages:

At baseline, the experimental group average is 8.19cm (2.72%) higher than the mean control group. At final testing this difference increases to 9,60cm (3,16%). Initially, the difference between the meanings of the two groups is not significant ($t_{calulated}$ = 1.91 <2.064 = t_{tabel}, p> 0.05), but in the final test there is a significant difference between the averages of the two groups ($t_{calculated}$ = 2.16> t_{table}, p & lt; 0.05).

Table 2 The statistical parameters and the differences calculated for the two-handed jump

	Experiment group (Ge)				**Control group (Gc)**				**$\overline{X}$ Ge - $\overline{X}$ Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(cm)	(%)			(cm)	(%)	(cm)	(%)	(cm)	(%)
$\overline{X}$	292,64	295,50	2,86	0,98	284,67	286,42	1,75	0,61	7,97	2,80	9,08	3,17
S	11,53	11,88	-	-	9,99	10,34	-	-				
Cv	3,94	4,02	-	-	3,51	3,61	-	-				
t	t_c=10,408>3,012(t_t) p<0,01				t_c=8,042>3,106(t_t) p<0,01				t_c=1,87<2,064(t_t) p>0,05		t_c=2,08>2,064(t_t) p<0,05	

Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH
Vol. XVII, ISSUE 2 Supplement, 2017, Romania
The journal is indexed in: Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST,
DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengace Learning, Cabell's Directories

Evolution of the experimental group:

Between initial testing and final testing there was an increase in performance of 0.98% (2.86cm). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). The Student test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$ = 10,408> 3,012 = t_{table}, p <0,01).

Evolution of the control group:

The increase recorded between the two tests is 0.61% (1.75cm). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). Applying the Student Test, it is noted that the difference between the averages of the two tests is significant ($t_{calculated}$ = 8.042> 3.106 = t_{table}, p <0.01).

Differences between group averages:

In the initial testing, the average of the experiment is 7,97cm (2.80%) higher than the average of the control group. At final testing this difference increases to 9.08cm (3.17%). Initially, the difference between the meanings of the two groups is not significant (tcalculat = 1.87 <2.064 = ttabel, p> 0.05), but in the final test there is a significant difference between the meanings of the two groups ($t_{calulated}$ = 2.08> t_{table}, p <0.05).

Table 3 The statistical parameters and differences calculated for triple jump on two on two legs

	Experiment group (Ge)				**Control group (Gc)**				$\overline{X}$ **Ge -** $\overline{X}$ **Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(cm)	(%)			(cm)	(%)	(cm)	(%)	(cm)	(%)
$\overline{X}$	797,14	809,29	12,15	1,52	765,00	774,17	9,17	1,20	32,14	4,20	35,12	4,54
S	39,70	37,51	-	-	46,02	46,41	-	-				
Cv	4,98	4,63	-	-	6,02	5,99	-	-				
t	t_c=5,667>3,012(t_t) p<0,01				t_c=4,750>3,106(t_t) p<0,01				t_c=1,91<2,064(t_t) p>0,05		t_c=2,13>2,064(t_t) p<0,05	

Evolution of the experimental group:

Between initial testing and final testing there was an increase in performance by 1.52% (12.15cm). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). The Student test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$ = 5,667> 3,012 = t_{table}, p <0,01).

Evolution of the control group:

The increase recorded between the two tests is 1.20% (9.17cm). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). Applying the Student Test, it is noted that the difference between the averages of the two tests is significant ($t_{calculated}$ = 4.750> 3.106 = t_{table}, p <0.01).

Differences between group averages:

In the initial testing, the average of the experiment is 32,14cm (4.20%) higher than the average of the control group. At final testing, this difference increases to 35.12cm (4.54%). Initially, the difference between the meanings of the two groups is not significant (tcalculated = 1.91 <2.064 = ttable, p> 0.05), but at the final test there is a significant difference between the meanings of the two groups ($t_{calculated}$ = 2.13> t_{table}, p & lt; 0.05).

Table 4 The statistical parameters and calculated differences for lateral movement on 4m

	Experiment group (Ge)				**Control group (Gc)**				$\overline{X}$ **Ge -** $\overline{X}$ **Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(nr.at)	(%)			(nr.at)	(%)	(nr.at)	(%)	(nr.at)	(%)
$\overline{X}$	36,86	39,14	2,28	6,19	35,25	36,42	1,17	3,32	1,61	4,57	2,72	7,47
S	2,18	1,61	-	-	2,63	2,54	-	-				
Cv	5,91	4,11	-	-	7,46	6,97	-	-				
t	t_c=8,599>3,012(t_t) p<0,01				t_c=3,924>3,106(t_t) p<0,01				t_c=1,70<2,064(t_t) p>0,05		t_c=3,32>2,797(t_t) p<0,01	

Evolution of the experimental group*:*

Between initial testing and final testing there was an increase in performance by 6.19% (2.28 touches).

The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). The Student Test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$=8,599 > 3,012=t_{table}, p<0,01).

Evolution of the control group*:*

The increase recorded between the two tests is 3.32% (1.17 touches). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). Applying the Student Test shows that the difference between the averages of the two tests is significant ($t_{calculated}$=3,924 > 3,106=t_{table}, p<0,01).

Differences between group averages*:*

In the initial test, the experiment is the average repeat 1.61 (4.57%) higher than the average of the control group. At final testing, this difference increases to 2.72 reps (7.47%). Initially, the difference between the meanings of the two groups is not significant (tcalculat = 1.70 <2.064 = ttabel, p> 0.05), but in the final test there is a significant difference between the averages of the two groups ($t_{calculated}$=3,32 > 2,797=t_{table}, p<0,01).

Table 5 The statistical parameters and differences calculated for forward and backward movement

	Experiment group (Ge)				**Control group (Gc)**				$\overline{X}$ **Ge -** $\overline{X}$ **Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(s)	(%)			(s)	(%)	(s)	(%)	(s)	(%)
$\overline{X}$	7,95	7,67	-0,28	-3,52	8,25	8,06	-0,19	-2,30	-0,30	-3,64	-0,39	-4,84
S	0,40	0,43	-	-	0,51	0,52	-	-				
Cv	5,03	5,61	-	-	6,18	6,45	-	-				
t	t_c=11,904>3,012(t_t) p<0,01				t_c=5,418>3,106(t_t) p<0,01				t_c=1,66<2,064(t_t) p>0,05		t_c=2,08>2,064(t_t) p<0,05	

Evolution of the experimental group*:*

Between initial testing and final testing there was an increase in performance by 3.52% (0.28s). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). The Student Test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$=11,904 > 3,012=t_{table}, p<0,01).

Evolution of the control group*:*

The increase recorded between the two tests is 2,30% (0,19s). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). Applying the Student Test shows that the difference between the averages of the two tests is significant ($t_{calculated}$=5,418 > 3,106=t_{table}, p<0,01).

Differences between group averages*:*

In initial testing, the average is 0,30s experiment group (3.64%) better than the control group average. At final testing this difference increases to 0.39s (4.84%). Initially, the difference between the meanings of the two groups is not significant (tcalculat = 1.66 <2.064 = ttabel, p> 0.05), but in the final test there is a significant difference between the averages of the two groups ($t_{calculated}$=2,08 > 2,064=t_{table}, p<0,05).

Table 6 The statistical parameters calculated for the abdomen and differences

	Experiment group (Ge)				**Control group (Gc)**				$\overline{X}$ **Ge -** $\overline{X}$ **Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(rep)	(%)			(rep)	(%)	(rep)	(%)	(rep)	(%)
$\overline{X}$	66,36	70,36	4,00	6,03	63,92	65,83	1,91	2,99	2,44	3,82	4,53	6,88
S	6,63	6,23	-	-	3,90	4,15	-	-				
Cv	9,99	8,85	-	-	6,10	6,30	-	-				
t	t_c=13,490>3,012(t_t) p<0,01				t_c=5,353>3,106(t_t) p<0,01				t_c=1,12<2,064(t_t) p>0,05		t_c=2,14>2,064(t_t) p<0,05	

Evolution of the experimental group*:*

Between initial testing and final testing there was an increase in performance by 6.03% (4.00 iterations). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). The Student Test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$=13,490 > 3,012=t_{table}, p<0,01).

Evolution of the control group*:*

The increase recorded between the two tests is 2.99% (1.91 reps). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). Applying the Student

Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH
Vol. XVII, ISSUE 2 Supplement, 2017, Romania
The journal is indexed in: Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST,
DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengace Learning, Cabell's Directories

Test shows that the difference between the averages of the two tests is significant ($t_{calculated}$=5,353 > 3,106=t_{table}, p<0,01).

Differences between group averages*:*

In the initial testing, the average of the experiment is 2.44 repetitions (3.82%) higher than the average of the control group. At final testing, this difference increases to 4.53 repetitions (6.88%). Initially, the difference between the meanings of the two groups is not significant (tcalculat = 1.12 <2.064 = ttabel, p> 0.05), but in the final test there is a significant difference between the averages of the two groups ($t_{calculated}$=2,14 > 2,064=t_{table}, p<0,01).

Table 7 Parametrii statistici şi diferenţele calculate pentru *serviciu*

	Experiment group (Ge)				**Control group (Gc)**				$\overline{X}$ **Ge -** $\overline{X}$ **Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(pct)	(%)			(pct)	(%)	(pct)	(%)	(pct)	(%)
$\overline{X}$	7,50	9,00	1,50	20,00	7,09	7,91	0,82	11,57	0,41	5,78	1,09	13,78
S	0,52	0,60	-	-	0,70	0,83	-	-				
Cv	6,93	6,67	-	-	9,87	10,49	-	-				
t	t_c=6,514>3,106(t_t) p<0,01				t_c=4,50>3,169(t_t) p<0,01				t_c=1,60<2,080(t_t) p>0,05		t_c=3,63>2,831(t_t) p<0,01	

Evolution of the experimental group*:*

Between initial testing and final testing there was an increase in performance by 20.00% (1.50 points). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). The Student Test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$=6,514 > 3,106=t_{table}, p<0,01).

Evolution of the control group*:*

The increase recorded between the two tests is 11.57% (0.82 points). The group is homogeneous at baseline (Cv1 <10%) and relatively homogeneous at final assay (Cv2 <20%). Applying the Student Test shows that the difference between the averages of the two tests is significant ($t_{calculated}$=4,50 > 3,169=t_{table}, p<0,01).

Differences between group averages*:*

In initial testing, the experiment group average is 0.41 points (5.78%) higher than the average of the control group. At final testing, this difference increases to 1.09 points (13.78%). Initially, the difference between the meanings of the two groups is not significant (tcalculat = 1.60 <2.080 = ttabel, p> 0.05), but in the final test there is a significant difference between the averages of the two groups ($t_{calculated}$=3,63 > 2,831=t_{table}, p<0,01).

Table 8 Statistical parameters and differences for the firs structure of the game

	Experiment group (Ge)				**Control group (Gc)**				$\overline{X}$ **Ge -** $\overline{X}$ **Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(pct)	(%)			(pct)	(%)	(pct)	(%)	(pct)	(%)
$\overline{X}$	7,14	8,86	1,72	24,09	7,00	8,00	1,00	14,29	0,14	2,00	0,86	10,75
S	0,66	0,66	-	-	0,74	0,85	-	-				
Cv	9,24	7,45	-	-	10,57	10,63	-	-				
t	t_c=13,682>3,012(t_t) p<0,01				t_c=4,690>3,106(t_t) p<0,01				t_c=0,52<2,064(t_t) p>0,05		t_c=2,88>2,064(t_t) p<0,05	

Evolution of the experimental group*:*

Between initial testing and final testing there was an increase in performance by 24.09% (1.72 points). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). The Student Test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$=13,682 > 3,012=t_{table}, p<0,01).

Evolution of the control group*:*

The increase recorded between the two tests is 14.29% (1 point). The group is relatively homogeneous in both tests (Cv1 <20%, Cv2 <20%). Applying the Student Test shows that the difference between the averages of the two tests is significant ($t_{calculated}$=4,690 > 3,106=t_{table}, p<0,01).

Differences between group averages*:*

Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH
Vol. XVII, ISSUE 2 Supplement, 2017, Romania
The journal is indexed in: Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST,
DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengace Learning, Cabell's Directories

In the initial testing, the average of the experiment is 0.14 points (2.00%) higher than the average of the control group. At final testing, this difference increases to 0.86 points (10.75%). Initially, the difference between the meanings of the two groups is not significant ($t_{calculated}$ = 0.52 <2.064 = t_{table}, p> 0.05), but in the final test there is a significant difference between the averages of the two groups ($t_{calculated}$=2,88 > 2,064=t_{table}, p<0,01).

Table 9 Statistical parameters and differences for the second structure of the game

	Experiment group (Ge)				**Control group (Gc)**				$\overline{X}$ **Ge -** $\overline{X}$ **Gc**			
	T_1	**T_2**	**D_{21}**		**T_1**	**T_2**	**D_{21}**		**T_1**		**T_2**	
			(pct)	(%)			(pct)	(%)	(pct)	(%)	(pct)	(%)
$\overline{X}$	6,79	8,57	1,78	26,22	6,67	7,83	1,16	17,39	0,12	1,80	0,74	9,45
S	0,70	0,85	-	-	0,65	0,72	-	-				
Cv	10,31	9,92	-	-	9,75	9,20	-	-				
t	t_c=11,541>3,012(t_t) p<0,01				t_c=10,383>3,106(t_t) p<0,01				t_c=0,45<2,064(t_t) p>0,05		t_c=2,37>2,064(t_t) p<0,05	

Evolution of the experimental group*:*

Between initial testing and final testing there was an increase in performance by 26.22% (1.78 points). The group is relatively homogeneous at baseline (Cv1 <20%) and homogeneous at final assay (Cv2 <10%). The Student Test shows that the difference between the averages obtained in the two tests is significant ($t_{calculated}$=11,541 > 3,012=t_{table}, p<0,01).

Evolution of the control group*:*

The increase recorded between the two tests is 17.39% (1.16 points). The group is homogeneous in both tests (Cv1 <10%, Cv2 <10%). Applying the Student Test shows that the difference between the averages of the two tests is significant ($t_{calculated}$=10,383 > 3,106=t_{table}, p<0,01).

Differences between group averages*:*

In initial testing, the experiment group average is 0.12 points (1.80%) higher than the average of the control group. At final testing this difference increases to 0.74 points (9.45%). Initially, the difference between the meanings of the two groups is not significant ($t_{calculated}$ = 0.45 <2.064 = t_{table}, p> 0.05), but in the final test there is a significant difference between the averages of the two groups ($t_{calculated}$=2,37 > 2,064=t_{table}, p<0,01).

Discussions

The analysis of the data recorded for the measurements and the somatic indicators and their comparison with those specified in the model proposed by the Federation for this age group reflects the following:

Analyzing the data obtained from the FRV-specific motorcycle samples, the following can be observed:

- When jumping vertically, with a momentum, reaching the maximum point, one hand both groups recorded significant increases in performance, but the progress of the experimental group is higher (3.57cm) than that of the control group (2,16cm).
- And when jumping vertically, on the spot, reaching the maximum point with two hands, the progress of the experimental group (2.86cm) is higher than that of the control group (1,75cm).
- In case of triple jumping on two feet, the values recorded by the experiment group correspond to an index (Cojocaru, A. and colleagues 2013) of 0.60 and those obtained by the control group to 0.50. Also, the progress of the experimental group (12.15cm) is greater than that of the control group (9,17cm).
- On 4m lateral displacement, the mean of the experimental group at the initial test corresponds to an index of 0.85, and to the final test - an index of 0.95. The initial control group average corresponds to the 0.75 index and the final test to 0.80. In this case, the progress of the experimental group (2.28 touches) was higher than that of the control group (1.17 touches).
- When moving back and forth on the distance of 6m x 5, the average repeat scores obtained by the experimental group at the initial test corresponds to an index of 0.55 and in the final test to an index of 0.65. The initial control group average corresponds to the 0.50 index and to the final test at 0.55. Regarding progress, this is higher for the experimental group (0.28 s) than for the control group (0,19s).
- In the sample of the abdomen, the index to which the average of the experiment group falls is 0.70 - initially and 0.85 - final. For the control group, the initial average corresponds to the 0.65 index and the final to the 0.70.
- The frontal mobility, assessed by the flexibility sample, initially and finally falls within the parameters specified by the model at the indices of 0.50 - for the experimental group and the 0.45 and 0.50 in the control group. Groups of the groups did not improve significantly (d.p.v. statistically) from one test to the other, but the increase was higher in the experiment group (0.57cm) than in the control group (0.50cm).

In essence, it is observed that in the applied motor samples there are evidenced increases in motor activity in both groups included in the experiment, with a more pronounced progress in the experimental group - reflected by the significant differences between the groups of the two groups at the final test.

As regards the ability to execute specific content elements (gaming and service phases), the following points:

- In the initial testing, the hierarchy of the playing phases according to the absolute value of the average score obtained in both groups is: Phase I (7.14 points - experiment group and 7.00 points - control group) and Phase II (6.79 points - experiment group and 6.67 points - control group). In final testing the hierarchy is maintained: phase I (8.86 points - experiment group and 8.00 points - control group) and phase II (8.57 - experiment group and 7.83 - control group).
- In terms of progress, it is higher in phase II, both groups (1.78 points - experiment group, 1.16 points - control group) compared to the one recorded in Phase I (1.72 points - experiment group, 1 point - control group).
- Regarding the evolution of the two groups at work, a more pronounced progress is observed for the experimental group (1.50 points) than for the control group (0.82 points).

In essence, it is observed that specific motricity records value increases, with a more pronounced progress in the experimental group - reflected by the significant differences between the two groups' averages at the final test.

In the technical-tactical training of the player, viewed as a long-term process aimed at achieving skill, the same principles and methods underlie the whole training system of athletes in general (Niculescu, 2002).

Conclusions

Observing and analyzing high-level competitions allows us to diagnose the new development trends of the game itself, which determines the search for new ways to optimize performance in modern volleyball.

Effective management of the information resources provided by the game will allow for the updating of the models, including those specific to each level, which finally materializes by selecting the most effective means of training (presenting fidelity to the structure and demand of the game) designed to ensure success in competition.

As a whole, the aim and objectives proposed in this research have been achieved. Thus, the initial testing of the subjects allowed the assessment of their level and the verification of the conditions of application of the appropriate statistical method, and the final testing made it possible to observe the dynamics of the parameters pursued - longitudinally for each group, but also transversally - between the groups. The analysis of the obtained data confirmed that the work programs applied to the experimental group were more efficient than those used in the control group, reflected also by the evolution of the teams in the official competitions.

Finally, the hypothesis that "optimizing the training model - by selecting and applying in training of complex means for specific training - can ensure an increase in the performance capacity of junior volunteers" ensuring the fulfillment of the instructive-educational objectives and of the team performance.

Acknowledgments

All authors have equal contributions.

References

Cojocaru A, Lăzărescu D, Ştefănescu A, 2013, Ghid orientativ al antrenorului de volei, Bucureşti, pg. 79, www.frvolei.ro

Colibaba-Evuleţ D, Bota I, 1998, Jocuri sportive – teorie şi metodică, Edit. Aldin, Bucureşti, pg. 167.

Dragnea A, Mate-Teodorescu S, 2002, Teoria sportului, Edit. FEST, Bucureşti, pg.319

Ionescu BD, 2008, Bazele antrenamentului sportiv, Note de curs, Braşov, pg. 7.

Kus S, 2004, Coaching volleyball successfully, Human Kinetics, USA, pg. 90.

Niculescu M, 2002, Volei – de la teorie la practică, Editura Universităţii din Piteşti, pg. 89

Shondell D, Reynaud C, 2002, The volleyball coaching, Human Kinetics, USA, pg. 178.