

EXPERIMENTAL STUDY ON KINEMATICS OF GYAKU-TSUKI PUNCH

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Abstract: This paper aims to analyze the acceleration of a karate athlete's wrist while performing Gyaku-Tsuki punch, in two cases: with and without impact on a target. A tri-axial accelerometer attached to the wrist provides kinematic measurements of fist accelerations on x, y and z axis while performing Gyaku-Tsuki punches. The variation of acceleration with respect to time variable is revealed, together with the influence of a/t ratio on the mechanical power of a reverse punch.

Keywords: biomechanics, reverse punch technique, acceleration of wrist.

Introduction

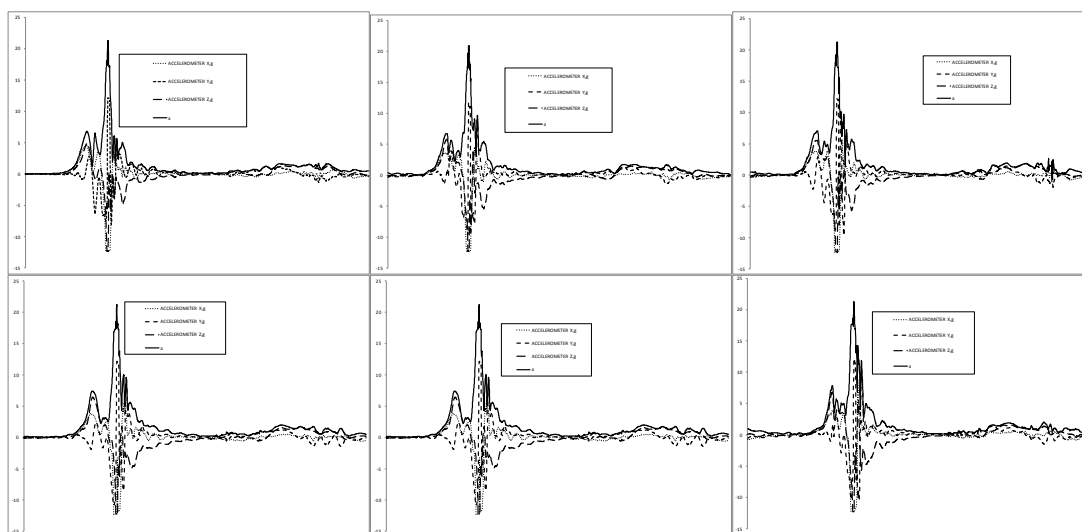
During karate sport training it is common to throw punches without a physical target to learn and improve the form of technique, but also with target for maximum force production (Nakayama, 1983). There are several factors that may affect how much force is generated with a given punch, among them acceleration of striking limb is the most important. The greater acceleration will be applied for maximum force production (Stull and Barham, 1988).

Authors who have studied the Gyaku-Tsuki punch had used different experienced athletes and had concluded that these are capable to develop velocity of punch up to 14 m/s, which correspond to impact forces around 6-7 kN (Walker, 1975; Cavanaugh and Landa, 1983). Also, they stated that the energy and power

delivered into a target is increasing with the velocity of execution.

Another group of researchers focus their studies on the influence factors over the maximum force developed during Gyaku-Tsuki punch with impact on target (Nakayama 1983; Okazaki, 1984; Yoshihuku et al., 1988) and also, on the factors that determine the correct execution of complex execution of Gyaku-Tsuki punch. From these studies are revealed the ways for a more powerful and effective punch, respective:

- 1) the duration of the strike is minimized;
- 2) the displacement through penetration is increased;
- 3) the mass involved in the punch increases;
- 4) the acceleration of the wrist is increased.



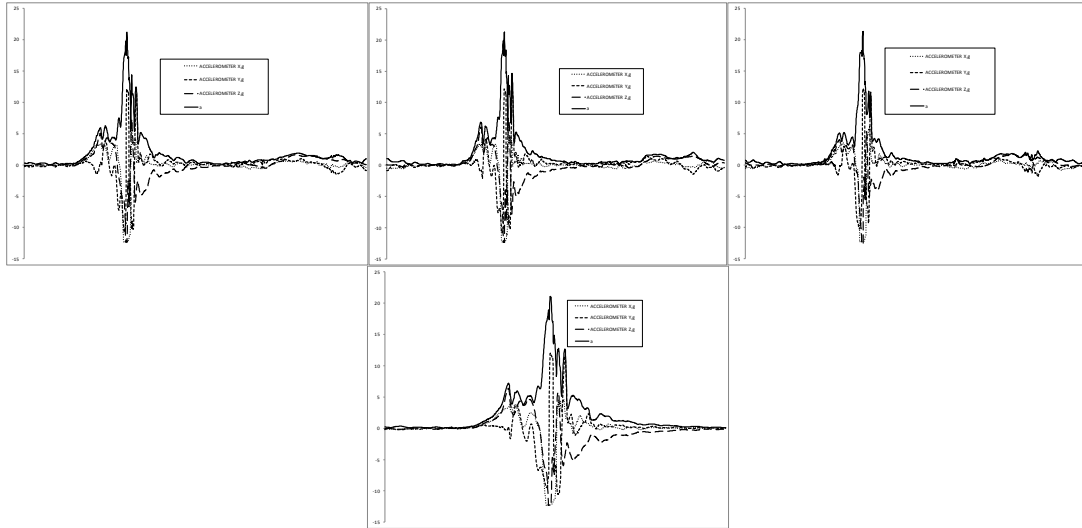


Fig. 2 Time variation of wrist acceleration for 10 trials with impact on the target

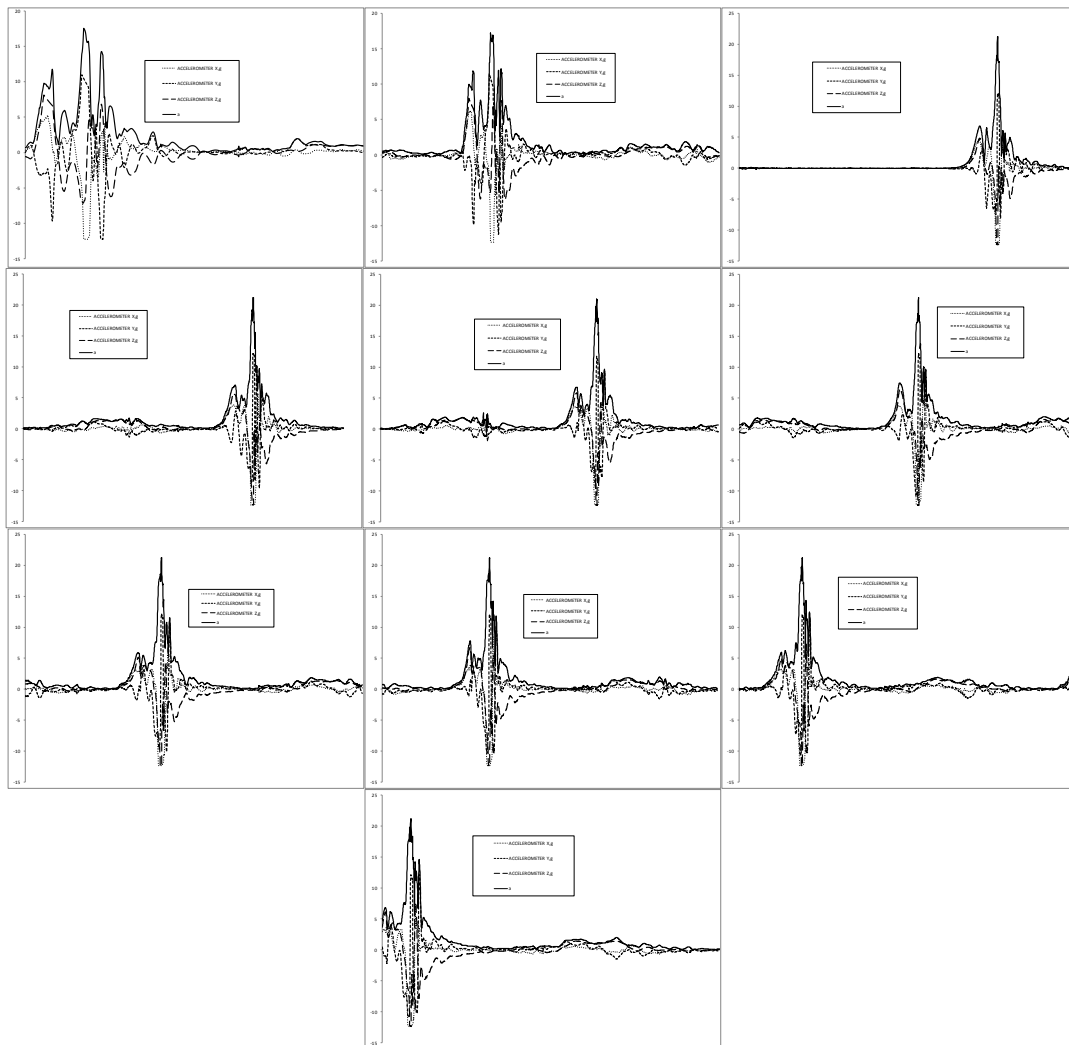


Fig. 3 Time variation of wrist acceleration for 10 trials without impact on the target

The maximum values of the components of acceleration, in both cases are presented in table 1, revealing the fact that maximum acceleration of the wrist (21.252 m/s^2) was obtained when there was no impact on

the target, while the maximum value of component y of the acceleration was 12.297 m/s^2 , when there was an impact on the target.

An ANOVA single factor test provides the information that there is no statistically significant differences between the case when the target was hit and the other case, without impact on the target (table 2), meaning that the presence or the absence of the target has

no influence on the athlete's behavior and on the maximum force developed by muscles.

Table 1 –Maximum values of acceleration components

Sample number	$a_{x \max}$		$a_{y \max}$		$a_{z \max}$		a_{\max}	
	a*	b*	a*	b*	a*	b*	a*	b*
1	-12.289	-12.295	12.168	12.297	-12.371	-8.083	21.252	17.540
2	-12.309	-12.302	12.182	11.475	-12.338	-8.011	21.230	17.249
3	-12.297	-12.289	11.756	12.168	-12.352	-12.371	20.959	21.252
4	-12.351	-12.309	12.179	12.182	-12.323	12.338	21.219	21.230
5	-12.291	-12.297	12.183	11.756	-12.401	-12.352	21.269	20.959
6	-12.289	-12.351	12.171	12.179	-12.385	-12.323	21.209	21.219
7	-12.291	-12.291	12.168	12.183	-12.340	-12.401	21.205	21.269
8	-12.295	-12.289	12.164	12.171	-12.373	-12.385	21.236	21.209
9	-12.311	-12.291	12.186	12.168	-12.477	-12.340	21.312	21.205
10	-12.291	-12.295	12.006	12.164	-12.295	-12.373	21.103	21.236
Average	-12.301	-12.301	12.116	12.074	-12.366	-9.030	21.199	20.437
Deviation Standard error	0.019	0.019	0.137	0.254	0.050	7.720	0.100	1.607
	0.002	0.002	0.014	0.025	0.005	0.772	0.010	0.161

Table 2- Anova single factor results

ANOVA							
	Source of Variation	SS	df	MS	F	P-value	F crit
$a_{x \max}$	Between Groups	1.57E-06	1	1.57E-06	0.004379	0.947967	4.413873
	Within Groups	0.006445	18	0.000358			
	Total	0.006447	19				
$a_{y \max}$	Between Groups	0.008833	1	0.008833	0.211914	0.650784	4.413873
	Within Groups	0.750243	18	0.04168			
	Total	0.759075	19				
$a_{z \max}$	Between Groups	2.907818	1	2.907818	2.242611	0.151585	4.413873
	Within Groups	23.33919	18	1.296621			
	Total	26.247	19				
a_{\max}	Between Groups	55.6233	1	55.6233	1.866757	0.188674	4.413873
	Within Groups	536.3416	18	29.79676			
	Total	591.9649	19				

The average of the maximum acceleration on axis x, y and z is shown in fig.4, revealing the fact that maximum average of wrist acceleration was obtained when there was an impact on the

target (21.1914 m/s²), while the averages of the maximum values of components of acceleration are quite similar, excepting the component on z axis.

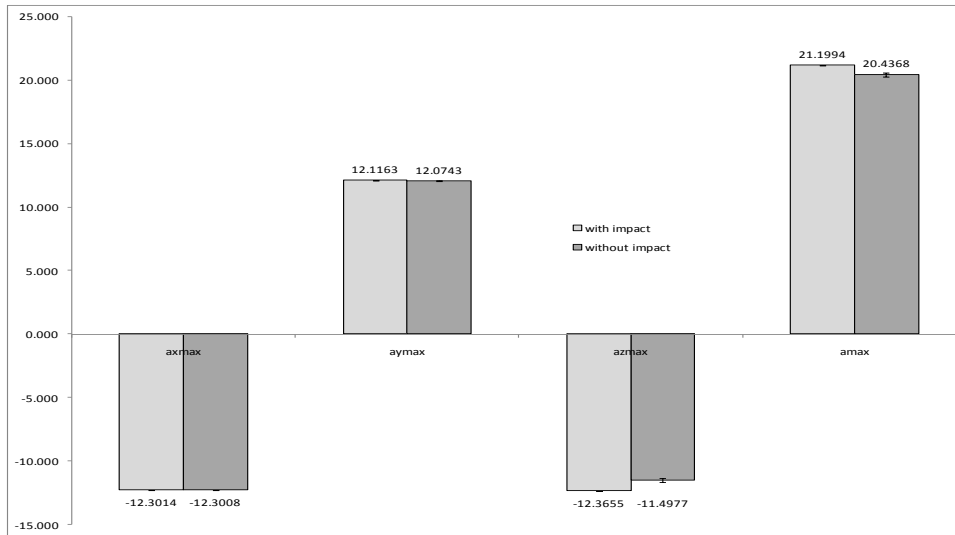


Fig. 4 The maximum values of acceleration on x, y and z axis

Another analysis can be done considering just the duration of the attack, eliminating the preparation phases and the phases after the attack.

In fig.5, the values of the attack phase measured in seconds are shown, in both cases, with and without impact on the target.

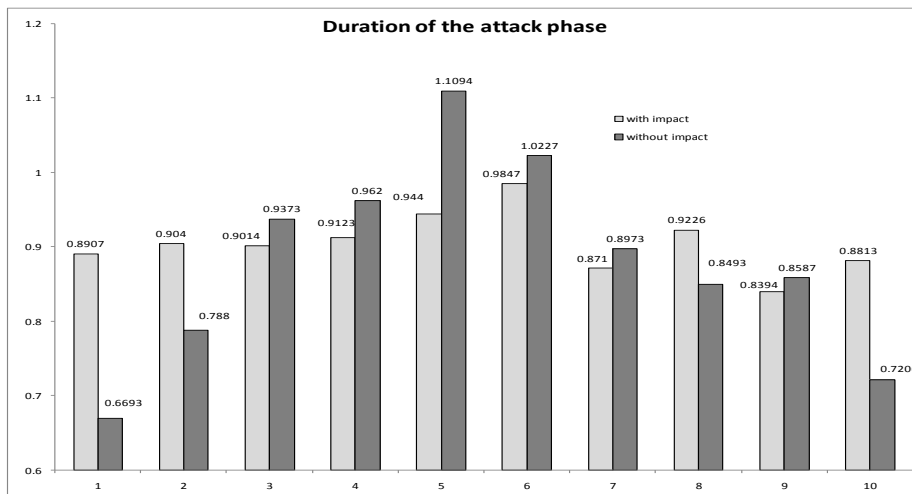


Fig.5 Duration of the attack phase

The acceleration magnitude is influencing the magnitude of the force acting on the target, while the increasing force will provide a greater

mechanical work, which will influence the power of the reverse punch (fig. 6)

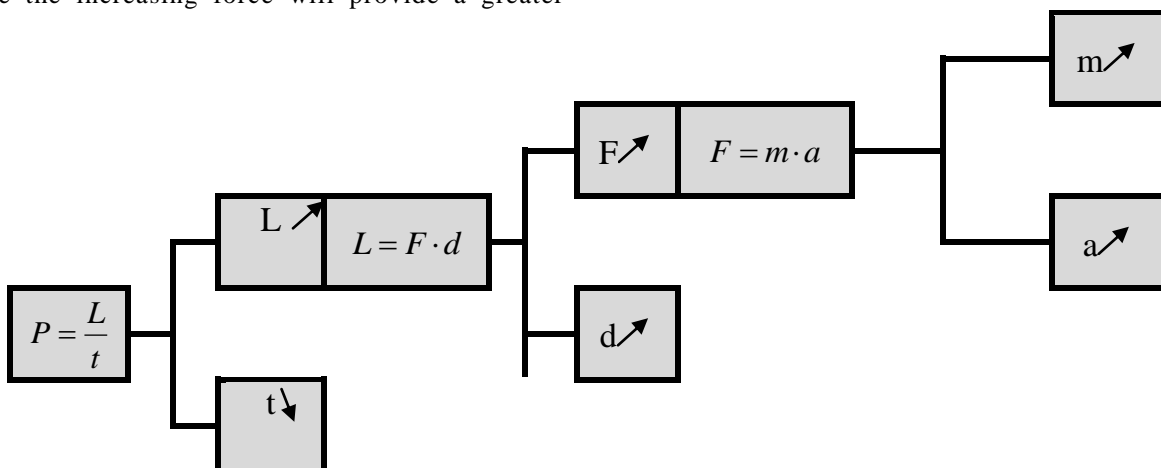


Fig.6 The influence factors on mechanical power

We can determine the influence of the ratio acceleration per time on the mechanical power of the reverse punch, in both cases, with and without impact on the target, assuming that the mass and the displacement are constant.

Thus, we can observe that while performing the reverse strike with impact on the

target, the mechanical power might increase up to 8.21% (fig.7). As for the reverse punch without impact on the target, the mechanical power increases up to 25.23% (fig.7), as the duration of attack phase is smaller.

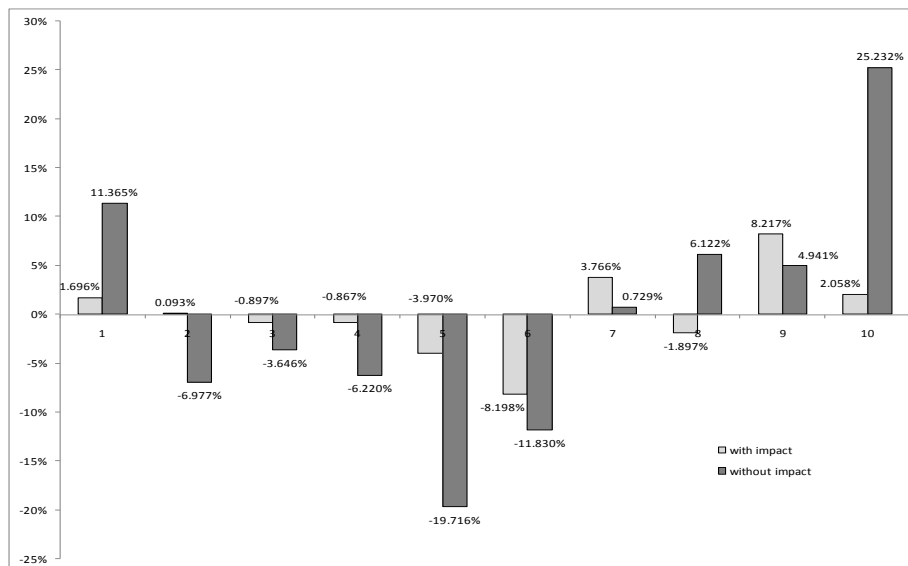


Fig.7 The influence of a/t ratio on the medium mechanical power of reverse punch

Conclusions

The study provided insight in technical aspects typical of elite karate athlete in the execution of Gyaku-Tsuki technique as impact and no-impact tasks.

In martial arts we aim to increase the effectiveness of a punch. The study of accelerations is important, as a bigger value for acceleration involves a greater power developed while punching.

An ANOVA single factor test provides the information that there are no statistically significant differences between the case when the target was hit and the other case, without impact on the target, meaning that the presence or the absence of the target has no influence on the athlete's behavior and on the maximum force developed by muscles.

The maximum average of wrist acceleration was obtained when there was an impact on the target (21.19 m/s²), while the averages of the maximum values of components of acceleration are quite similar, excepting the component on z axis.

As for the influence of the ratio acceleration/time on the mechanical power of the reverse punch, in both cases, with and without impact on the target, while the mass and the displacement are constant, we can conclude that the mechanical power might increase up to 8.21% (when there is impact on the target), or up to 25.23% (when there is impact on the target).

References

1. Cavanaugh, P.R., Landa, J., (1983), A Biomechanical Analysis of Karate Chop, The Research Quarterly, 47(4), 610-618.

2. Gulledge, K.J., Dapena J.,(2008), A comparison of the reverse and power punches in oriental martial arts, Journal of Sports Sciences, 26, 189-196.
3. Nakayama, M., (1983), Best Karate-fundamentals., Kodansha America Inc., Japan.
4. Okazaki, T., (1984), The Textbook of Modern Karate, Harper & Row Publishers Inc., New York
5. Stull , R.A., Barham, J.N., (1988), An Analysis of Work and Power Produced by Different Karate Styles in the Karate Reverse Punch in Front Stance, Proceeding of the 13th International Symposium on Biomechanics of Sport, Montana, USA, 225-231.
6. Yoshihuku,Y.,Ikegami, Y., Sakurai, S.,(1987), Energy Flow From the Trunk to the Upper Limb in Tsuki Motion of Top-Class players or Martial Arts, Shorinji Kempo, Biomechanics X-B, B. Jonsson Ed., 733-737.
7. Walker, J., 1975, Karate strikes. American Journal of Physics, Volume 43, Issue 10, pp. 845-849.

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Studiu experimental asupra cinematicii loviturii de pumn gyaku tsuki

Rezumat: Prezentul studiu analizeaza acceleratia pumnului in lovitura de karate Gyaku Tsuki in doua conditii de executie, respectiv cu si fara impact . Acceleratiile corespunzatoare a 10 repetitii consecutive sunt masurate cu ajutorul unui accelerometru tri-axial montat pe pumnul unei sportive de performanta. Variatiile in timp ale acceleratiilor masurate pe directiile celor 3 axe ale accelerometrului sunt analizate si comparate folosind testul ANOVA. De asemenea, este

evidentiata si influenta raportului acceleratie/timp asupra puterii dezvoltate in lovitura de karate.

Cuvinte cheie: biomecanică, tehnica loviturii de pumn, acceleratia incheiturii pumnului.

Étude expérimentale sur la cinématique de gyaku-tsuki

Résumé: Cet article vise à analyser l'accélération du poignet d'un athlète du karaté dans l'exercice de punch Gyaku-Tsuki, dans deux cas: avec et sans impact sur une

cible. Un accéléromètre triaxial fixé au poignet fournit des mesures cinématiques des accélérations du poing sur x, y et z dans l'exercice Gyaku-Tsuki. La variation de l'accélération par rapport à la variable temps est révélée, avec l'influence d'un rapport accélération/temps sur la puissance mécanique de Gyaku-Tsuki.

Mots-clés: biomécanique, technique punch arrière, l'accélération du poignet.

IMPLICATIONS OF INDIVIDUALIZED TRAINING ON GROWTH PERFORMANCE HANDBALL SPORTS PERFORMANCE

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Abstract. Today more than ever, sport performance requires rethinking and updating of the training process, in full accordance with the current structure of the game driving. Players respecting individual training and technical content of the post-game tactics, contributes greatly increase the performance of players and teams. Held in the research of a team participating in the first echelon of performance handball by players' individual training stations specializing in addition. The results obtained at the upper end of the experiment are arithmetic mean values and statistically significant on all tests of significance threshold control, $p < 0,05$.

Keywords: handball, individualization, performance, training.

Introduction

Handball, and other sports games is constantly looking for new ways and means to optimize sports performance and increase sports performance. In this respect, the performance of all teams, individual training depending on the position player of the game is imperative for achieving the team's performance. Forms of application of training varies from one individual to another team, but each of them looking for new ways to optimize performance by adapting the structure of training more dynamic driving the handball game today, and the content of the job-specific technical and tactical which are

specialized players and even the individual peculiarities of the players.

Methods

To conduct this research and operational and performance objectives of the proposed methods have been used following research: the study of specialized bibliography, teacher observation, experiment, statistical and mathematical, graphical, control samples and tests.

Results

The results of the research subjects we selected control samples to assess the initial testing are presented in Table 1.

Table 1. Initial test results

Indicator statistically	TEST OF CONTROL						
	30 m Run	5x30 m	Dribbling through cones	Handball throwing	Complex Ball	Move triangle	Specific test
Arithmetic mean	4,12	4,19	6,18	50,25	29,98	20,12	39,86
Standard deviation	0,07	0,08	0,06	1,42	0,48	0,39	0,62
The coefficient of variability	1,98	2,31	1,88	5,83	3,12	2,41	5,41
Mean error	0,03	0,04	0,03	0,71	0,24	0,19	0,31

During the investigation, the athletes have worked as a training plan developed by us, each athlete individually partly Plateaus. In this respect, the means selected were included in the systematic and streamlined

as individual training plans in each weekly cycle of training and which was consistent with the period and the preparation (Table 2). In the individual training plans used, the means were coded (Ex. TJ = throw jump, CD = change of direction, IE = individual excess, CP =

collaboration team player, TR = throwing running etc.) and assayed for each sport and lesson training (Table 2).

Table 2. Competition between individual training plan

Day	EXERCISES USED DURING THE WEEKLY CYCLE						
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
AM		CD2, TJ8	IE6, TR4	IE5, CD2	TR2, IE1		
PM	TJ1, CD2	IE3, TJ4		CP4, CP2	CP4, TJ3	Official Game	

Final performance when tested under research subjects are superior to all control samples, the higher values of the arithmetic average. At the same time, the homogeneity of the group known higher values being

included in the same high threshold of homogeneity, but with higher values compared to initial testing, and standard deviation indicates a normal distribution, over 68% of cases. (Table 3).

Table 3. Final test results

Indicator statistically	TEST OF CONTROL						
	30 m Run	5x30 m	Dribbling through cones	Handball throwing	Complex Ball	Move triangle	Specific test
Arithmetic mean	3,93	4,11	6,02	51,38	28,02	18,88	37,78
Standard deviation	0,06	0,06	0,05	0,84	0,46	0,29	0,54
The coefficient of variability	1,68	1,97	1,23	4,33	2,97	2,31	4,42
Mean error	0,03	0,03	0,02	0,42	0,23	0,17	0,27

Discussion. At trial run on the distance of 30 m, the initial testing is the arithmetic mean value of 4,12 seconds with a standard deviation of 0,07 seconds (normal distribution - over 68% of cases), a coefficient of variability, 98% classified as high threshold of homogeneity and a mean error of 0,03 seconds. Final test results are superior, as the arithmetic mean of 3,93 seconds with a standard deviation of 0,06 seconds (normal distribution - over 68% of cases), a coefficient of variation of 1,68% (high consistency) and an average error of 0,03 seconds. Value test "t" calculated from the results obtained in initial testing and final value of 2,55 indicates that such safety significance of the difference is 95% (p <0,05). At trial run 5x30m at the initial testing is the arithmetic mean value of 4,19 seconds with a standard deviation of 0,08 seconds (normal distribution - over 68% of cases), a coefficient of variation ranged from 2,31% in threshold greater uniformity and a mean error of 0,04 seconds. Final test results are superior, as the arithmetic mean of 4,11 seconds, with a standard deviation of 0,06 seconds (normal distribution - over 68% of cases), a coefficient of variation of 1,97% (high consistency) and an average error of 0,03 seconds. Value test "t" calculated from the results obtained in initial testing and final value of 2,38 indicates that such safety significance of the difference is 95% (p <0,05). Dribbling through cones initial

testing shows the arithmetic average of 6,18 seconds with a standard deviation of 0,06 seconds (normal distribution), a coefficient of variation of 1,88% (high consistency) and a mean error of 0,03 seconds. The final test, the arithmetic mean is 6,02 seconds, with a standard deviation of 0,05 seconds (normal distribution), a coefficient of variation of 1,23% (high consistency) and a mean error of 0,02 seconds. Value test "t" is 4,24, falling in materiality p<0,01.

The handball throwing the initial testing is the arithmetic mean of 50,25 m with a standard deviation of 1,42 m (normal distribution), a coefficient of variation of 5,83% (high consistency) and a mean error of 0,71 seconds. The final test, the arithmetic mean is 51,38 m with a standard deviation of 0,84 m (normal distribution), a coefficient of variation of 4,33% (high consistency) and a mean error of 0,42 m. Value test "t" is 6,56, falling in materiality p<0,01.

Complex ball, initial testing shows the arithmetic average of 29,98 seconds with a standard deviation of 0,48 seconds (normal distribution), a coefficient of variation of 3,12% (high consistency) and a mean error of 0,24 seconds. The final test, the arithmetic mean is 28,02 seconds, with a standard deviation of 0,46 seconds (normal distribution), a coefficient of variation of 2,97% (high consistency) and a mean

error of 0,23 seconds. Value test "t" is 7,38, falling in materiality $p < 0,01$.

The move triangle, the arithmetic mean of the initial testing is 20,12 seconds with a standard deviation of 0,39 seconds (normal distribution), a coefficient of variation of 2,41% (higher homogeneity) and a mean error of 0,19 seconds. The final test, the arithmetic mean is 18,88 seconds, with a standard deviation of 0,29 seconds (normal distribution), a coefficient of variation of 2,31% (high consistency) and a mean error of 0,17 seconds. Value test "t" is 4,78, falling in materiality $p < 0,01$.

Initial testing of specific test presented to the arithmetic average of 39,86 seconds with a standard deviation of 0,62 seconds (normal distribution), a coefficient of variation of 5,41% (high consistency) and a mean error of 0,31 seconds. The final test, the arithmetic mean is 37,78 seconds, with a standard deviation of 0,54 seconds (normal distribution), a coefficient of variation of 4,42% (high consistency) and a mean error of 0,27 seconds. Value test "t" is 8,26, falling within the threshold of significance $p < 0,01$. The results is presented in figure 1.

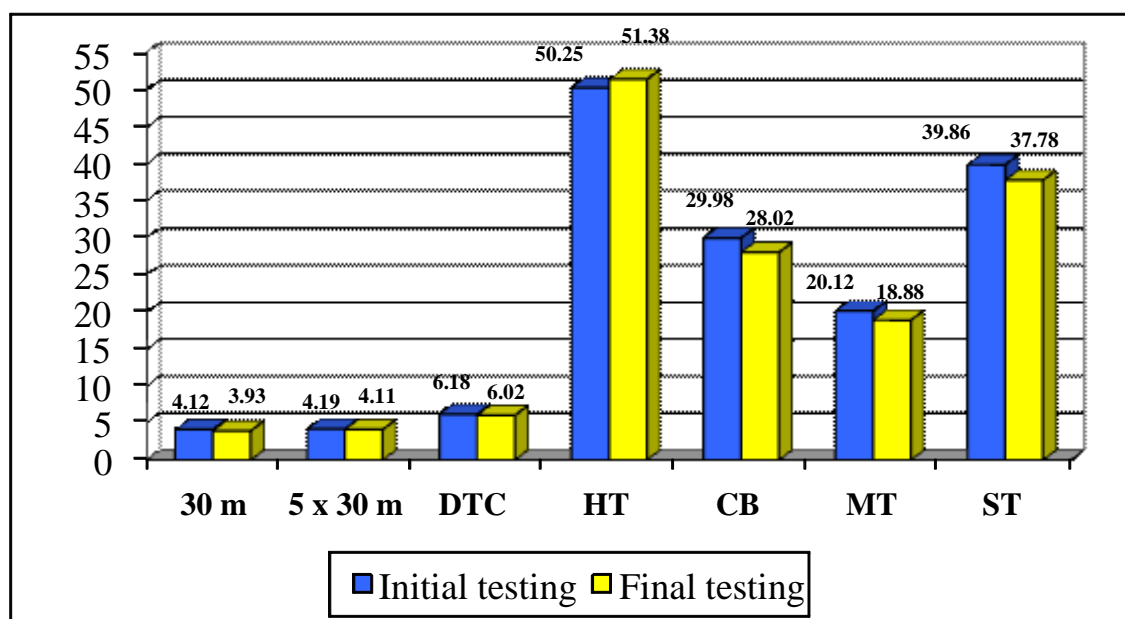


Figure 1. Research results

Conclusions. Training team performance requires individual training handball players of the game depending on the position they are specialized, using all types of lessons.

The means selected and used in performance training teams must be fully consistent with the structure of the motor current and specific handball game play station, varied and attractive.

Sporting performance of the handball players performance could be improved over a short period of time (six months), the results are statistically significant at $p < 0,05$ for all control samples.

Bibliography

1. Abernethy B., Kippers V., Mackinnon L.T., Neal R., Hanrahan S., (1997), The Biophysical Foundations of Human Movement, Human Kinetics Unites States.
2. Cometti G., (2007), Los metodos modernos de musculacion, Editorial Paidotribo, Badalona, Espana
3. Dupont G., Bosquet L., (2007), Méthodologie de l'entraînement, Ellipses Edition Marketing S.A., Paris.
4. Martinet J.P., Pagés J.L., (2007), Handball, Editions Vigot, Paris.
5. Mihăilă I., (2006), Evaluarea în selecția și pregătirea handbaliștilor de performanță, Ed. Universitaria Craiova.

6. Platonov N. V., (1991), L'antraineement sportif, Theorie et methodologie, Ed. II, Edition Revue E.P.S., Paris
7. Weineck J., (2005), Entrenamiento total, Editorial Paidotribo, Barcelona.

Implicațiile pregătirii individualizate asupra creșterii performanțelor sportive la handbaliștii de performanță

Abstract. Astăzi mai mult decât oricând, sportul de performanță impune regândirea și reactualizarea procesului de antrenament, în deplină concordanță cu structura motrică a jocului actual. Individualizarea pregătirii jucătorilor respectând conținutul tehnico-tactic al postului de joc, contribuie în mod deosebit la creșterea performanțelor jucătorilor și echipelor. Cercetarea s-a desfășurat la nivelul unei echipe participante în primul eșalon al handbalului de performanță, prin individualizarea pregătirii jucătorilor în dependență de specializarea pe posturi. Rezultatele obținute la finalul experimentului, sunt semnificative din punct de vedere statistic la toate probele de control pentru pragul de semnificație, $p < 0,05$.

Cuvinte cheie: handbal, individualizare, performanță, pregătire.

Les implications de la formation individualisée sur les sports de croissance des résultats de handball de performance

Résumé. Aujourd'hui plus que jamais, la performance sportive nécessite de repenser et de mise à jour du processus de formation, en pleine conformité avec la structure actuelle du jeu de conduite. Les joueurs sur la formation individuelle et le contenu technique de la tactique d'après-match, contribue grandement

augmenter les performances des joueurs et des équipes. La recherche a été menée à un échelon d'équipes dans le handball de performance d'abord par la position des joueurs individuels de formation, selon la spécialisation. À la fin de l'expérience des résultats sont statistiquement significatifs sur tous les tests de contrôle seuil de signification, $p < 0,05$.

Mots-clés: handball, la personnalisation, les performances, la formation.

THE CONTRIBUTION OF STRENGTH AND MUSCLE POWER IN SPRINT TRYOUTS

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Abstract: The research took place in 2010, at the Research Centre for Human Performance, University of Pitesti, the parameters data of speed, strength and power and power resistance being obtained in accordance with Bosco protocol: Squat Jumps (SJ and SJbw); Countermovement Jump (CMJ); Continuous Jump (CJs and CJbref); Continuous Jump (CJb 0-15s); Continuous Jump (CJb 15..60s), the Miron Georgescu tryout modified, electromyography. The study was conducted on nine sprint runners, members of the Olympic Team, National and University Club Pitesti, medallists at National Championships of Athletics - seniors, 2009.

Highlighting the values of indicators determined through research can be an effective informational support in monitoring the physical training for optimizing the specific strength of the sprinters. Research has revealed the direct relation between speed, strength and power level determined by the Bosco Protocol and the athletes ability of starting at base determined by the speed in the 20m race. The increasing of the power and strength indices will determine the increasing of the steps running magnitude while accelerating the speed in the second half of the race, after the launch from the base.

Key words: strength, the starting force, muscle power, track and field, sprint.

Introduction

It is said that "the strength that an athlete can apply and the speed which he applies it are mentained in a opposite relation"[Bompa T., 2003, p. 272]. The starting power, the acceleration power and the strength resistance are considered the forms of manifestation of strength that determines the plenary manifestation of the effort capacity in sprint try outs[Bompa T., 2006, p.120]. Numerous studies and researches have showed the importance of muscular strength in obtaining sports performance at sprint tryouts in athletics[Vittori C., 1985; Dintiman G.B., & Ward R.D., 1999; Zaïorski V., 2005; Grund M., 2006; Hommel H., 2009; Kuitunen S., 2010]. We consider relevant to our research approach, the definition of Bompa T., [2003, p. 272], who believes that force can be expressed both by neuromuscular ability to overcome external or internal resistance and the human capacity apply force / muscle contraction. In the first case, the force is the subject of mechanics, and the second aspect, physiological and methodological investigations in sports training. The author quoted that "the force that can

impose a speed sport and apply it applies remain in a inversely proportional relationship, as if the relationship between the force applied by a sporting and application time." The excess of one over the other ingredients and are therefore even if the force can be a dominant feature of a quality, it can not be considered in isolation (single event), while the force component is always at odds. Size of force is directly proportional to body mass. This relationship is linear only in the beginning when the force increases as the moving object's mass increases. Size continuous mass will not necessarily lead to an increase as large applied force.

Premises

- The gap between the performances value of world class and national level sprinters at all formative levels of training.
- This gap can be generated by many causes, one of them being of methodological order.
- The insufficient correlation of specific parameters of strength-explosive strength with the effort particularities in sprint tryouts.

- The approach of some aspects of our domain of research are identified in research works presented at congresses, international symposiums and others scientific manifestations, without showing the particularities of strength and muscle power in sprint tryouts.
- The lack of similar works at national and international level.

The hypothesis

Monitoring the development of muscle power by objectivising parameters of power in relation with the specific speed, during the annual

macrocycle, determines the proper conduct of individual training of explosive strength and, thus optimizes the performance in the sprint tryouts.

The purpose

Optimizing the performance in speed tryouts by monitoring the parameters of speed, strength and power as measured by „Quattro Jump Bosco Protocol Version 1.0.9.2”, on Kistler platform, Miron Georgescu tryout modified, tensiomyography (TMG) and electromyography.

The subjects of the reaserch

Table 1. athletes who enter the research.

No.	Name and surname	Sex	Age	National team	Olympic team	Tryout	Performance
1.	V.B.	M	27	x		100 m 200 m 400 mg	10.76 21.76 52.02
2.	C. M. C	M	25		x	100m 200m 400m	10.28 20.86 46.08
3.	B. V.	M	25	x		100m 200m 400m	10.46 21.21 46.22
4.	B.C.	M	22	x		200m 400m	22.17 48.56
5.	T. A.	M	23	x		100m 200m	10.72 21.50
6.	T.G.	M	20	x		400mg	52.67
7.	I.A.M.	F	22		x	100mg 400m 400mg	13.86 52.82 58.70
8.	P.A.	F	26	x		100m 100mg	12.37 13.98
9.	R.A.M.	F	17		x	100m 200m	12.01 24.89

Methods, instruments, tehnic of the research

1. The tryout MGM-15 represents a determination test of the elements defining of neuromotor qualities, energetic, and control, at a maxim effort of strength-speed, at a triple extension level.

The whole tryout is about doing three series of fifteen jumps each (on both legs , the right foot and the left foot) an a special mat, with the condition that each jump must be at the same maximum height and a minimum time of contact with the ground.The subjects must not count the jumps, that is done by the computer. After each series the subject has a break of fifteen thirty seconds to rest.

This tryout tries to bring the general resources of energetic nature of an athlete, going from the idea that the inferior limbs are used in any department of sports, and two legs jumps and one

leg are natural moves. Because the effort chosen is not seen in this form in the exercises practiced in different branches of sports, it's removed the possibility of distorting the results by anterior skills of the athletes, and the effort put is considered as nonspecific If the effort should be specific, some athletes would benefit rule because of technical processes. After conducting the test results are dependent only on the basic qualities of the athletes.

The test parameters measured: **PU** - average unit power - providing data related to the orientation training in sports training conditional, information on the qualities of speed, force-measuring the strength reported in kg W / kg. The higher the better; **Flight H** - average height of flights - mainly to provide information directed force (force-speed/force). The higher the better; **V. Rep.** - Recurrence rate - provides information force-speed/force oriented. The quality is even

better as the numerical value of the parameter is lower. It is one of the main forms of manifestation of speed. Highlights the speed of the succeeding excitation processes inhibition (nerve cells) and processes with the relaxation of contraction (in muscle). They represent some of the parameters resulting from the test parameters that we have considered useful to us in our approach. Besides mentioned above parameters are calculated and turn the power unit: **AUP**

2. Kistler Platform in accordance with Bosco protocol

Measured parameters:**hf** – maximum height of mass center during flight;

hc – the lower value of mass center in squat; **Pavg** – the average muscle power W/Kg;**Bilateral deficit** % - when using both left and right;**Additional weight** – equal with body weight;**Bosco indicator** % = $hf_{SJbw} / hf_{SJ} * 100\%$ indicates the future training direction to strength or speed;**FT (Fast Twitch fiber)** % - estimate the percentage of fast fibers responsible for the release of FV (**The algorithm was highlighted by Bosco based on hundreds of SJ-CMJ report records and muscle biopsies by age, sex, training type**) 25% = average;**Muscle elasticity** – (Effect of prestretch) – the contribution of the muscle elasticity **hf** – the maximum height of mass center during flight;**T contact**;**Length**;**Speed resistance indicator** – the ability to develop maximum power over time – hf_{CJb} / hf_{CJbref} ;**Volunteer effort indicator** – the maximum performance relation imposed on 5 jumps Tiredness index – (hf) – The comparison of the

first 5 jumps and the last 5 per h;**Tiredness index** – (P avg)- The comparison of the first 5 jumps and the last 5 on P avg.

3.Electromyography. It is a technique which measures the electrical activity of the muscles. . It is often used as a method of clinical investigation that complets the physical medical examination and provide additional information (for example can help to determine the causes of disease: neurogenic or myopathic). But, in the same time, it is a useful tool in research, in muscle physiology and pathophysiology study. By this method can be study the bioelectrical activity at the striated muscle level, at rest and contraction, both in normal and pathological conditions.

Results, discussion

Following the results of the Miron Georgescu tryout, the results are: the arithmetic mean is representative as a sequel of the homogeneity of jumps, on both legs and on the right foot, exception being H at the right foot where the variability coefficient is 16.06, where the arithmetic mean is sufficient representative. You can notice also that there is a difference of about 50% between the best and the worst jump regarding the height of the jump and the unitary power and the active unitary power.

Looking on the graphics of the MGM tryout, (fig.1-3) regarding the evolutions of height, the unitary power and active unitary power on the sequel of fifteen jumps on both legs we can tell, that the best momentum coincides with the best unitary power and active unitary power, then there is a slight fatigue,creating a plateau.

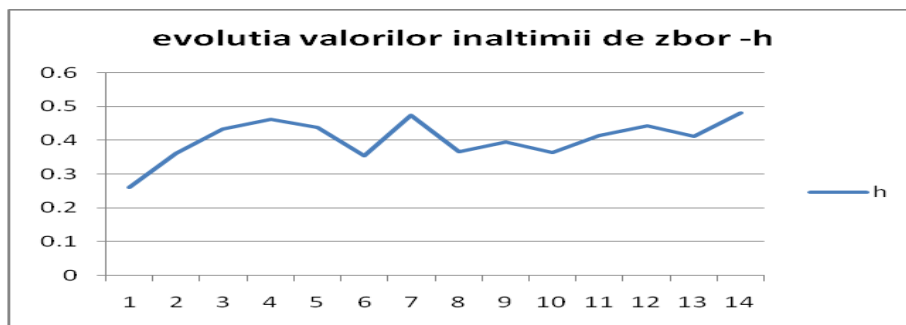


Fig.1 Evolution values chart of the flight height during 15 jumps on both legs at subject 3

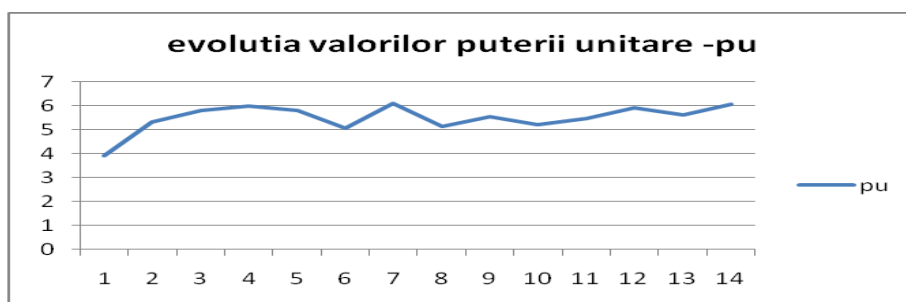


Fig.2 Evolution values chart of the unit power during 15 jumps on both legs at subject 3

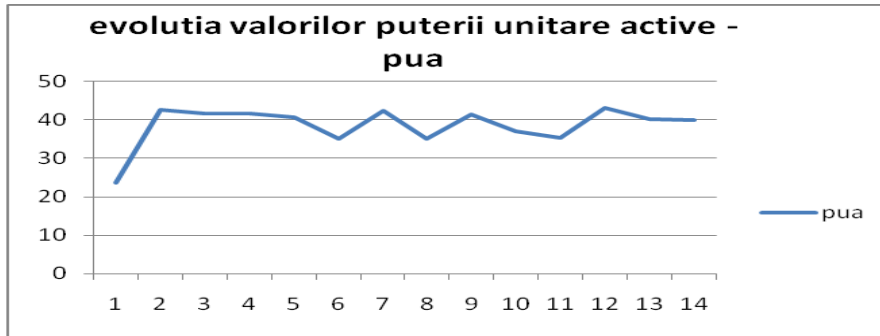


Fig.3 Evolution values chart of the active unit power during 15 jumps on both legs at subject 3

The functional symmetry determined by the tensiomyography shows the fact that subject 3 has a good symmetry at the ahilian tendon level, the

patellar ligaments and of the knee and an almost perfect symmetry at ankle level(99%).

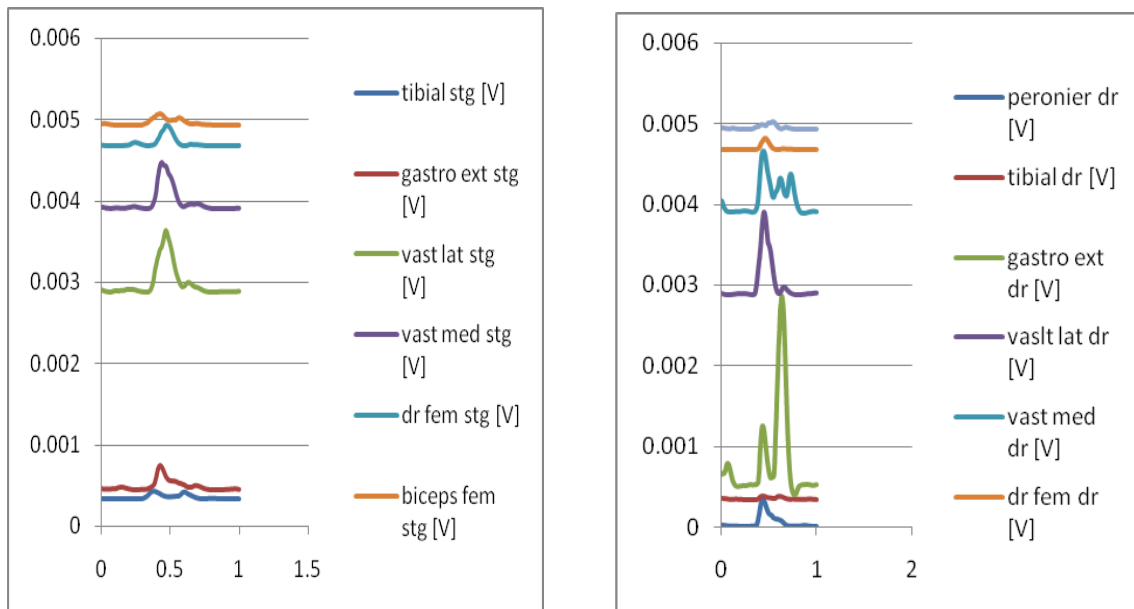


Fig. 4 EMG signal processing on an acquisition sequence – a both legs jump, at subject number 3

Regarding the results on Kistler platform, the variability coefficient of jumps indicates a homogeneity of jumps, in the same time all the values of testing being at the best level, all these things indicating the fact that force and muscle strength of subject 3 is consistent with the value of his results.

Counter Movement Jump (CMJ) at subject number 3

Bilateral Deficit (Pavg): n/a %
 Fast Twitch Fibres (est.): 51.9 %FT
 Effect of Prestretch: 4.1 %
 (reuse of elastic energy)

Legend #	Leg	hf [cm]	hc [cm]	Pavg [W/kg]	Fi
1	Both	57.7	-36.5	39.5	1.76
2	Both	58.8	-38.2	39.4	1.90
3	Both	58.6	-38.1	39.6	1.90
Avg.		58.3	-37.6	39.5	1.85
Stdev.		0.6	0.9	0.1	

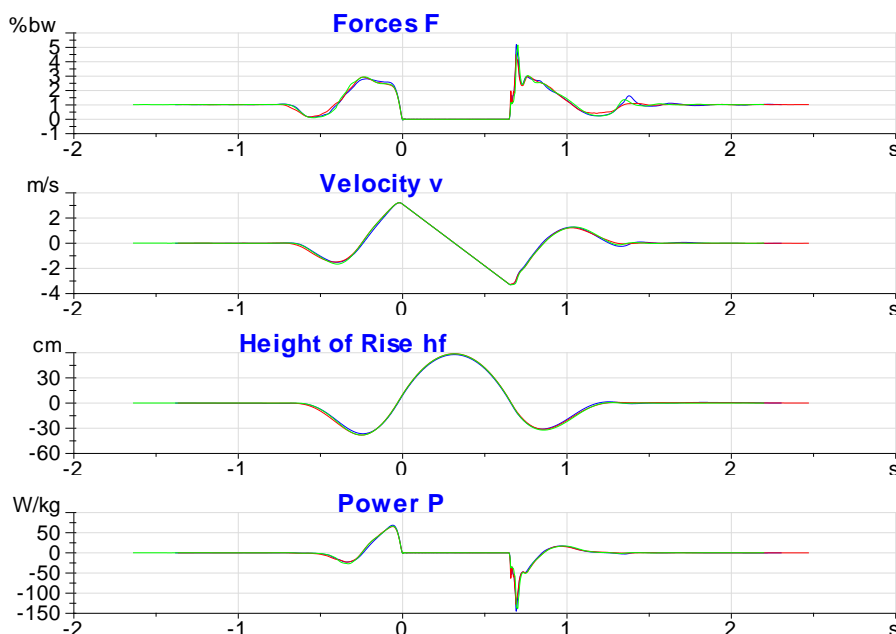


Fig. 5. Counter Movement Jump (CMJ) at subject number 3

Conclusions

Highlighting the values of indicators determined through research can be an effective informational support in monitoring the physical training for optimizing the specific strength of the sprinters. Research has revealed the direct relation between speed, strength and power level determined by the Bosco. The increasing of the power and strength indices will determine the increasing of the steps running magnitude while accelerating the speed in the second half of the race, after the launch from the base.

Bibliography

1. Bompa T., 2003, *Totul despre pregătirea tinerilor campioni*, Editura Ex Ponta, București.
2. Bompa T. & Carrera M.C., 2006, *Periodizarea antrenamentului sportiv*, Editura Tana, București.
3. Bosco C., 1985 – *Elastica muscolare e forza esplosiva nelle attività fisico-sportive*, Societa Stampa Sportiva, Roma.
4. Colonel I., 2008, *Studiu privind modificările morfofuncționale și biomecanice induse de practicarea exercițiilor de forță cu viteză maximală asociate cu stretching în vederea creșterii randamentului prestației în fotbal*, teza de doctor, ANEFS, București.
5. DINTMAN G.B., WARD R. D., 1988, *The # speed improvement program for athletes*, Sport Speed, a. Division Human Kinetics, S.U.A, în traducere, 1999, //, *Program de îmbunătățire a vitezei sportivilor*, S.D.P., 410-412, Edit. MTS- CCPS, București, pg. 31-104.
6. Gagea A., 1978, *Muscular Power and Neuromuscular Excitability în Sportsmen*, Doctoris thesis, editura WF, Warszawa, 1978.
7. Mano, R., (1996), *Bazele teoretice ale antrenamentului sportiv*, Editura Revue E. P. S., traducere CCPS.
8. Poehlein M., 2000, *Track & Field Caching Manual*, proiect coordinator Joseph L. Rogers, Human Kinetics, USA.
9. Sabău, I., (1997), *Aspecte noi și contribuții privind dezvoltarea forței în probele de aruncări la atletii de performanță și mare performanță*, teză de doctorat, București – ANEFS.
10. Zaïorski V., 2005, *Știința și practica antrenamentului de forță/ Sportul de înaltă performanță*, CCPS, București.

Determinarea contribuției forței și a puterii musculare în probele de sprint

Cuvinte cheie: forța, forța de demaraj, puterea musculară, atletism, sprint.

Rezumat: *Lucrarea este o cercetare de tip constatativ, desfășurată în anul 2010, în cadrul Centrului de Cercetare pentru Performanța Umană, Universitatea din Pitești cu sprijinul logistic al Institutului Național de Cercetare pentru Sport București. S-au determinat parametri de viteză, forță, putere și rezistență de putere conform protocolului Bosco: Squat Jumps (SJ and SJbw); Counter movement Jump (CMJ); Continuous Jump (CJs and CJbref); Continuous Jump (CJb 0-15s); Continuous Jump (CJb 15..60s). Acestui i s-a asociat proba pe platforma Miron Georgescu modificată și electromiografia.*

Studiul s-a realizat pe nouă alergători de sprint, componenți ai Lotului Olimpic, National, medaliați la Campionatul național de atletism –seniori în anul 2009. Datele recoltate au fost analizate individual și în corelație cu performanța fiecăruia în competiție.

Evidențierea valorilor indicatorilor determinați prin cercetare poate reprezenta un suport informațional eficient în monitorizarea pregătirii fizice în direcția optimizării forței specifice a sprinterilor pe baze obiective.

Determiner les forces et les tests de puissance muscle de sprint

Mots-clés: force, vigueur début, la force musculaire, l'athlétisme, le sprint.

Sommaire: *Document de recherche est un type attentif, qui s'est tenue en 2010, le Human Performance Research Centre, Université de Pitești avec le soutien logistique de l'Institut national de recherche sur le sport à Bucarest. Les paramètres ont été déterminés vitesse,*

force, puissance et la résistance de puissance protocole Bosco: Squat Jumps (SJ et SJbw) countermovement Jump (CMJ) continue Jump (CMP et CJbref) continue Jump (CJB 0-15s); Aller en continu (CJB 15.. 60). Cet échantillon a été associée à la plate-forme et l'électromyographie que Georgescu Miron. L'étude a été menée sur neuf coureurs de sprint, les membres de l'équipe olympique, des championnats nationaux

médailles en athlétisme, senior 2009. Datele recueillies ont été analysées individuellement et en relation avec les performances à chaque compétition. Soulignant les valeurs des indicateurs peuvent être déterminés par la recherche pour favoriser l'information de contrôle efficace pour l'optimisation de l'entraînement physique des sprinters sur un des objectifs de forces spécifiques.

THE HARDWARE AND SOFTWARE COMPONENTS OF THE "ALTATHLON" SYSTEM IN TRAINING AND CORRECTING THE TWO- HANDED UNDERARM PASS IN VOLLEYBALL

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Summary: "ALTATHLON" is the system proposed by our team for implementation as a computer-assisted training means for athletes.

The system architecture also allows its implementation in the medical applications specific to the patients' motor recovery or in the manufacture of intelligent prosthetics, but the present paper will only deal with the system's implementation in the training sessions specific to the acquisition of the two-handed underarm pass in volleyball.

Altathlon provides data acquisition on the equality of the athlete's hitting strength by using both hands, the limbs positions at the moment of passing, the spot where the ball hits the forearms, as well as the presence of the hold during each pass performed by the player during training.

The system proposed in the present paper, called, "Altathlon", provides real-time assessment of the pass effected by the palyer, subsequently issuing a vocal message aimed at correcting the player's performance. The software thus conceived allows the subsequent analysis of the training efficiency and the player's evolution over time.

Due to its ease of use, the "Altathlon" system provides objective assessment and real-time feed-back, which entitles us to believe that this system may be included among the modern means and methods in training and assessing beginner female volleyball players.

Key words: technique, voleyball, supporting devices, system "Altathlon".

Tasks

The system proposed for the training and assessing the athletes learning the two-handed underarm pass in volleyball has the following tasks:

- Data acquisition on the equality of the athlete's two-handed hitting strengths, the limbs positions at the moment of passing;
- The spot where the ball hits the forearms and the presence of the player's hold for each pass during training;
- Real-time pass assessment;
- Sending back to the player a vocal message aimed at correcting the precise performance of the accurate movements during the training session ;

- The subsequent analysis of the training efficiency and the time evolution of the player in question.

The system relies on gathering data from the various sensors applied on the player's body. As far as the two-handed underarm pass is concerned, the data contain information on:

- ✓ The spot where the ball touches the forearms;
- ✓ The strengths exerted by the ball on both forearms;
- ✓ The level of the upper limbs during the pass performance-underarm or overarm;
- ✓ The state of the elbow joints –extended or not;
- ✓ The presence of the hold determined during the pass performance.

Methods

The data acquired in this manner are sent to a distance through wireless radio to a computer. The computer performs the real-time data analysis and sends back to

the player a vocal message (the system's feedback under the form of auditory stimuli).



Fig. 1 The mobile hardware equipment of the "Altathlon" system

The "ALTATHLON" system comprises hardware equipment structured in 2 categories:

- **The mobile equipment** consists of all the components applied on the athlete's body. They are the following: cuffs, elbow pads, knee pads, gloves, shoes endowed with sensors, the signal-forming circuits, the acquisition and serialisation circuit, the

power source of the mobile equipment, the wireless transmission mobile equipment, the cables and harness attaching these components to the athlete's body;

- **The server** represents the fixed part of the system, consisting of: the calculation system, the fixed wireless transmission equipment, and the audio system.

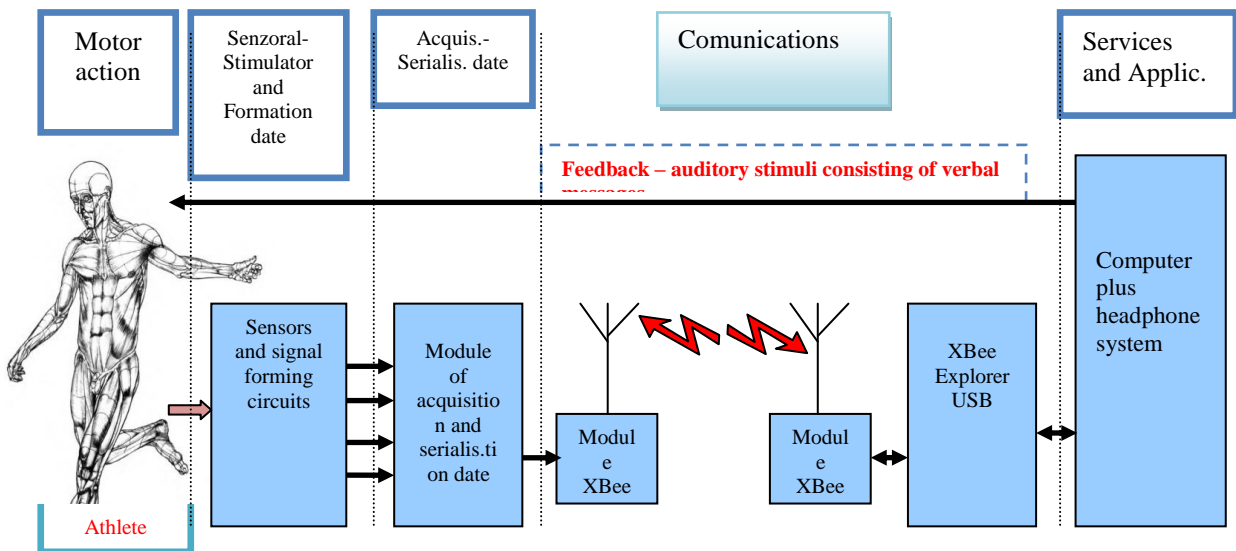


Fig. 2 – The hardware components of the "ALTATHLON" system in implementing the training system for the two-handed underarm pass in volleyball

Results

The vocal messages issued match the pass assessment, and may be the following:

- "Very well!;
- "Throw by the forearms third section!;
- "Stretch the elbows!;
- "Use both hands !;

- "Incorrect hold!;
- "Release hold after passing!.etc.

"Data acquisition" is performed by means of the "Cumullus Factum" software application running on a PC which contains the Microsoft Windows XP or above operating system.

The graphic user interface of the "Cumullus Factum" software application comprises a menu allowing the selection of the application module and the initiation of the working session.

Once the selection of the training module has been made, e.g. "the Module of Learning the two-handed underarm pass in volleyball", the working session may be initiated.



Fig. 3 . The starting menu of the "Cumullus Factum" application

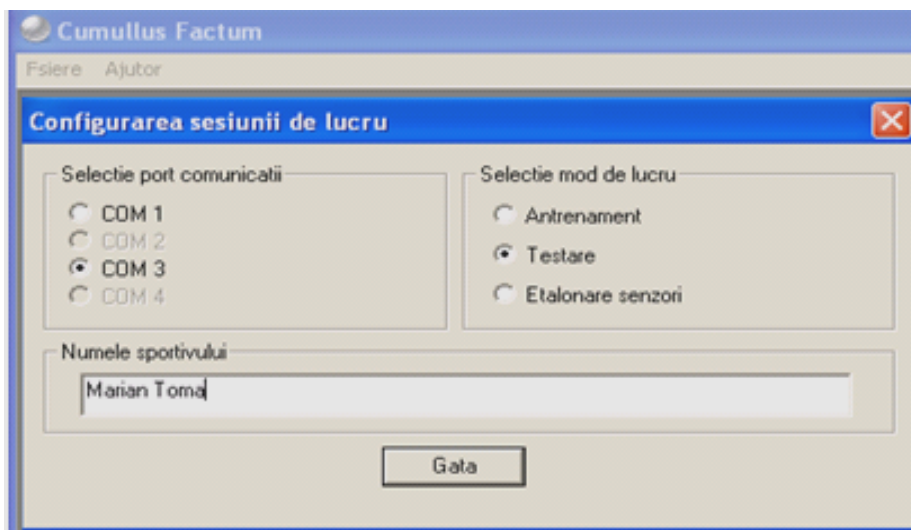


Fig .4 – Application window– Configuration of the working session

The training session takes place according to the working mode selected.

Fig. 5 shows a training session aimed at testing the volleyball player in point of the two-handed underarm pass.

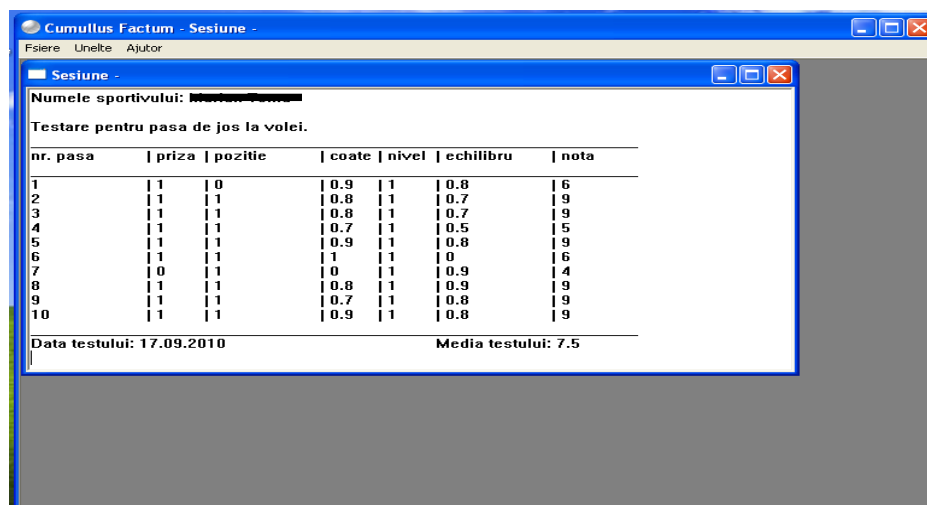


Fig. 5– Application window – Training session

Conclusions

Due to its ease of use, the "Altathlon" system provides objective assessment and real-time feed-back, which allows us to believe that it may be included among the modern means and methods of training and assessing beginning female volleyball players.

The system contributes to increasing the indices of accuracy and consistency in performing the two-handed underarm pass in beginner female volleyball players, as it displays data on the equality of the two-handed hitting strengths, as well as the limbs positions in performing the pass, it sends back to the player a correcting vocal message, thus enabling the subsequent analysis of the training efficiency and the time evolution through clear statistics.

Altathlon is a training system allowing the accurate assessment of the player's evolution from a period to another or even during the same training session, facilitating the accurate management of training the beginning groups.

Bibliography

1. PPreda, C., Niculescu M., (2009)- Study in programming the technical training for beginning female volleyballers by introducing supporting devices. (Annual international Conference" Physical Education, Sport and Health" , Pitesti Scientific report series physical education and sport nr. 13. <http://www.interlinkelectronics.com/catalog/Force-Sensors>
2. <http://www.interlinkelectronics.com/catalog/Force-Sensors>
3. <http://sports-motion.com/products-ark-volleyball.htm>

Componentele hardware și software ale sistemului "ALTATHLON" în implementarea pentru antrenamentul de învățare și corectare a pazei de jos cu două mâini la volei

Rezumat: "ALTATHLON" este sistemul propus de noi pentru a fi implementat ca mijloc de antrenare asistată de computer a sportivilor. Arhitectura sistemului permite de asemenea și implementarea în aplicațiile medicale specifice recuperării motorii ale pacienților sau pentru

fabricarea unor proteze inteligente, dar în conținutul acestei lucrări va fi prezentată o implementare a sistemului în antrenamentele specifice învățării pazei de jos cu două mâini la volei. Altathlon asigură achiziția datelor privind egalitatea forțelor cu care sportivul lovește mingea cu ambele mâini, poziții ale membrilor în momentul pazei, locul unde mingea lovește antebrațele și prezența prizei fiecărei pase efectuate de jucător în timpul antrenamentului. Sistemul propus de noi „Altathlon” ne oferă evaluarea în timp real, a pazei efectuate de către jucător și emite un mesaj vocal menit să corecteze executantul. Softul conceput oferă analiză ulterioară a eficienței antrenamentului și evoluția în timp a jucătorului. Datorită facilităților sale sistemul „Altathlon” oferă o evaluare obiectivă și un feed-back în timp real ceea ce ne face să credem că acest sistem poate fi acceptat în rândul mijloacelor moderne de pregătire și evaluare a voleibalistelor începătoare.

Cuvinte cheie: tehnică, volei, aparate ajutătoare, sistem „Altathlon”.

Les composantes hardware et software du système "ALTATHLON" dans l'implémentation dans l'entraînement d'apprentissage et de correction de la passe de dessous à deux mains en volleyball

Résumé: "ALTATHLON" est un système proposé pour implémentation comme moyen d'entraînement assisté par l'ordinateur. L'architecture du système permet aussi son emploi dans la récupération médicale des sportifs, mais l'article se donne pour but d'utiliser le système dans les entraînements spécifiques pour apprendre la passe de dessous à deux mains en volleyball. Le système évalue la passe en temps réel, en émettant aussi un message vocal destiné à corriger l'exécution du joueur. Grâce à ses facilités, le système „Altathlon” est sans doute un des moyens modernes d'entraînement et d'évaluation des volleybalistes débutantes.

Mots-clés: technique, volley-ball, appareils utiles, système "ALTATHLON".

A NEW PARADIGM OF SYSTEMIC CONCEPT IN SPORTS TRAINING

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Abstract. Mentality and the requirement of the sport today has a clear tendency to find new solutions to enhance the capacity of human performance regardless of industry or sport contests. One of these goals we believe we have to call the current concept of systemic training sports training that focuses on three segments (motor, physiological and psychological) that are found in standing balance and interdependence. Loss of balance or interplay between these three basic segments directly lead to distortions of the training, which by default will ultimately disrupt the body's ability to be able to fully adapt to the quality effort, and thus to transpose their outstanding sporting performance.

Keywords: systemic concept, paradigm, performance sport.

Introduction

Today, professional sports face a new trend, that of finding new solutions to enhance human capacity to adapt to the increasing performance requirements, compensation and overcompensation of physical effort.

Seen from this point of view, an important goal while capital is to call the current systemic concept of sports training, the training should be based on all segments undesirable obtain valuable performance. These segments of the system design, we consider as being composed not only of the motor, but also the physiological and psychological.

To be included in performance sports, these three segments must have contributed in greater or less than the results obtained in training and competitive sports.

It is important to note however that for these three segments of the system to contribute most effectively, must be kept in balance and permanent interdependence.

Loss of balance and interdependence of these three core segments will result in distortions of the training default, and thus will ultimately disrupt the body's ability to fully adapt to the specific exercise, which will lead to inability to obtain outstanding sports performances.

Content

Systemic concept of sports training starts as any other system, from a simple question, namely:

What frontier (stretching) can separate a different area and are its limits?

Can we separate the motor preparation of the body functional training and psychological preparation? We think certainly not. Always see the dynamics of international sport in general or branch of a sample and sports in particular, where performance is constantly growing and constantly up to the maximum capacity of the human body.

Sports training system approach is necessary because the overall circumstances and the implications that arise both in the work of lower quality optimization and the steps by which the coach has to learn how to materialize them, build, measure and evaluate.

Applied training in modern sports, such a concept can not only focus only issues related to driving, functional (physiological) and last but not least psychological.

They open reflection by knowledge areas mentioned above but also those who are helped permanently sociological institutional contribution of the sport regardless of level or branch of sports performance achieved.

Where differences occur between the performance of athletes? A question that wants to have an answer. It is easy to understand that

treating superficially one of the three segments of a simple system of sports training and consequently will generate its disruption will result in the reduction of human performance in general and also destroying the whole system.

To elucidate this phenomenon must start from the fact that human beings react to stimuli simply convenient in terms of its performance.

There are few situations in which man "believing " in value, because they lack the courage to stand up and fight with his beliefs about the possibilities to perform in one direction or another.

To try to answer the main question around which to concentrate all that has been written so far, point out that the concept of training system has not been discussed sufficiently and continuously, because it undermines or professionals often lack the courage to rise in conservatism and beliefs, to analyze and discuss this topic.

The plea that we put in front of professionals, we are convinced that it will be understood by the importance which must be paid to training with regard to driving skills, adjusting the body during exercise and psychological preparation. We believe that a pragmatic approach to systemic concept of sports training by specialists in the field, will generate a new attitude and quality personal training coach, you will pass on the training of athletes in particular to obtain valuable performance.

The principles that led to the move towards a new paradigm of sports training to:

- the principle of autonomy of the sports training;
- the principle of freedom expression;
- the principle of responsibility to the performances;
- the principle of ensuring the quality of education and enforcement in competition;
- principle of athletic training leadership effectiveness and conveyance;
- the principle of ensuring material and financial conditions and competition;
- the principle of respecting the rights and freedom of choice for athletes to train and perform.

Below this new trend of sports training paradigm, but without claiming that it will be the terminus of the identification of new guidelines for construction training by training athletes (Figure 1).

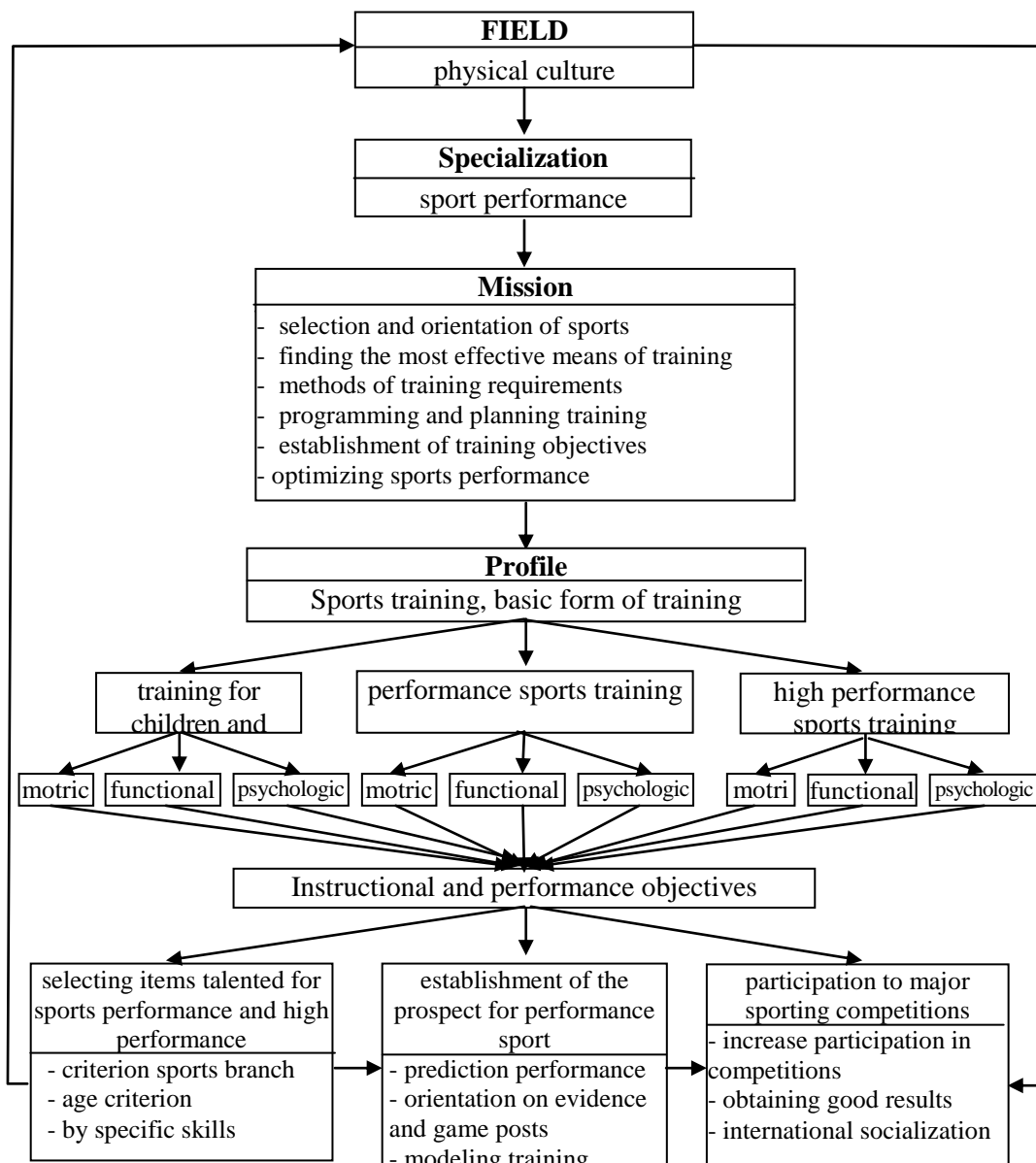


Figure 1. Systemic concept of sports training paradigm

Managing the training process should be properly understood as an operational unit and complex processing logic which is subject to competitive activity, which involves training the model to have a close correlation with the model contest. Competitive activity accurately and fully reflect the athlete training and opportunities to improve it.

Conclusions

Sports performance in training is achieved through the concept of systemic training.

The main segments of the instructional system composed of motor training, functional training and psychological preparation. Adapting the concept of integrative systems

must be made for each part of the formative stage.

Systemic Training must have specific evidence and the particularities of sport industry and sport in each hand.

Quality sports performance depends on the level of theoretical knowledge and practical and methodical, both the coach and the athlete herself.

Loss of balance or interplay between fundamental segments will lead directly to the distortions of the training, which by default will ultimately disrupt the body's ability to be able to fully adapt to the quality effort, and thus to transpose their outstanding sporting performance.

Training professionals must have regard to the acquisition of practical and methodological knowledge of their interdisciplinary specialty.

Bibliography

1. Dupont G., Bosquet L., (2007), *Méthodologie de l'entraînement*, Ellipses Edition Marketing S.A., Paris
2. Ferré J., Philippe B., (2003), *Préparation aux brevets d'état d'educateur sportif*, Ed. Amfora, Paris
3. Manno R., (1996), *Les bases de l'entraînement sportif*, MTS, CCPS, București.
4. Mc Ardle W., Katch F., Katch V., (2006), *Physiologie de l'activité physique*, Ed. Vigot, Paris.
5. Nicu A., (1993), *Antrenamentul sportiv modern*, Ed. Editis, București.
6. Seve C., (2003), *Préparation aux brevets d'état d'educateur sportif*, Ed. Amfora, Paris.
7. Stuart Biddle J.H., Nanette M., (2001), *Psychology of Physical Activity Determinants, well-being and interventions*, Taylor & Francis Group, London and New York.
8. Weineck J., (2005), *Entrenamiento total*, Editorial Paidotribo, Barcelona.

O nouă paradigmă a conceptului sistemic în instruirea sportivă

Rezumat. Mentalitatea și cerința de astăzi a sportului are o tendință clară de găsirea de noi soluții în vederea creșterii capacității de performanță umană indiferent de ramura sau proba sportivă. Unul din aceste deziderate considerăm că trebuie să repună în actualitate conceptul sistemic al antrenamentului sportiv în care instruirea are în vedere trei segmente (motric, fiziologic și psihologic) ce se regăsesc în

echilibru și interdependență permanentă. Pierderea echilibrului sau a interdependenței între aceste trei segmente fundamentale va conduce nemijlocit la distorsionări ale instruirii, care implicit vor dereglă în final capacitatea organismului uman de a putea să se adapteze integral la calitatea efortului, iar prin aceasta la transpunerea lor în performanțe sportive de excepție.

Cuvinte cheie: concept sistemic, paradigmă, sport de performanță.

Un nouveau paradigme de la conception systémique de la formation sportive

Résumé. Mentalité et l'exigence d'aujourd'hui le sport a une nette tendance à trouver de nouvelles solutions pour améliorer la capacité de la performance humaine indépendamment de concours de l'industrie ou le sport. Un de ces objectifs doit tenir compte de ce défi systémique de la notion actuelle de l'éducation et de formation sportive se concentre sur trois segments (moteur, physiologique et psychologique) que l'on trouve en règle l'équilibre et l'interdépendance. Perte d'équilibre ou de l'interaction entre ces trois segments de base directement conduire à des distorsions de la formation, qui est par défaut en fin de compte perturber la capacité du corps à être en mesure de s'adapter pleinement à l'effort de qualité, et donc à transposer leurs performances sportives exceptionnelles.

Mots-clés: concept systémique, le paradigme, la performance sportive.

STRUCTURE AND CONTENT OF EXPERIMENTAL TRAINING PROGRAMS FOR HOCKEY BEGINNERS AGE 9-11

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Abstract: The issue concerning research regarding hockey training for beginners has been and continues to be a disputed topic for many specialists in the field, both in the country, and more so abroad. Ice hockey as a sport has its own characteristics and peculiarities which develop continuously, this development thus assuming a comprehensive and complex assesment of all factors with undergo training. The paper presents the weighting factors in preparing novice training and the percentage of movement games and the driving qualities which are present in the structure of a training lesson. Finally, I made up a plan step and a lesson plan, both for guidance.

Keywords: ice hockey, novice, experimental program.

Introduction

In Hockey the specific effort is characterized by complex technical and tactical processes and by their deployment in high speed

during the game, which creates during the game a variety of situations. All they have managed in recent years to restructure the manner in which specialists in the field choose the optimal

age for the begging of training regarding future athletes.

Research assumptions

The necessity to build an experimental training program came from the fact that in the Romanian ice hockey theory, there is no single curriculum guidance for the novice, FRHG presenting only general guidelines for beginners who seek training. The unitary linear methodology is more detailed for juniors and seniors. At the beginners level there are no concrete ways of achieving goals, there is no selection of specific means for physical or technical training conducted on land or ice. In conclusion, at this particular level there are no modern methods of training for hockey children beginners.

The mail research method employed is the basic pedagogic experiment. This experiment has been described in great detail in my Phd thesis, with special reference to the

hockey training session for beginners age 9-11 based on movement games; thesis held at INEFS Chisinau 2006.

Theoretical Perspectives

Taking this into consideration this experimental program which I have proposed within the basic educational experiment shows:

- Application during training of movement games, selected according to previous clasifications taken from the previous subchapter;
- The training carried out on land or ice sports will be based on movement games;
- Training will have a well-defined structure, obtained from the analysis of literary sources derived from sociological inquiry and experience.

Weekly training cycle has been structured in accordance with training factors (Table 1);

*Table 1
Factors undergoing training programs for hockey beginners*

Training on land	%	Ice training	%
General physical training	40%	General physical training	20%
Specific physical training	30%	Specific physical training	30%
Technical training	20%	Technical training	40%
Theoretical training	5%	Theoretical training	5%
Psychological preparation	5%	Psychological preparation	5%

In this manner the weight of the movement games during the training session, will depend on the type of lesson.

1. Learning Lesson 10-20%.
2. Lesson for repetition-consolidation 40-50%.

3. Lesson for perfecting 50-60%.

The weight of the movement games for each part of the lesson will depend accordingly (table 2).

*Table 2
Percentage of games of movement for each type of lesson*

part	Learning lesson			Repeat and reinforcement lesson			Advanced lesson		
	prep	funda	final	prep	funda	final	prep	funda	final
%	10-15%	30-40%	20-30%	15-20%	40-50%	30-40%	20-30%	50-60%	40-50%

According to study findings it has been established that during training lessons the number of movement games should not exceed 4-5 types, the change in the complex of the

game to be once a month, while the percentage of motor skill development during training either on land or on ice will be structured judging its basic tasks (Table 3 and Figure 1.).

*Table 3
The percentage for motor skill development for each type of training*

Training on land	%	Ice Training	%
Speed	25%	Speed	25%
Force	10%	Force	5%
Resistance	10%	Resistance	5%
Skill	25%	Skill	40%
Mobility	15%	Mobility	5%
Qualities combined (speed-force)	15%	Qualities combined (speed-force)	20%

Graphical representation of sports training structure will look like:

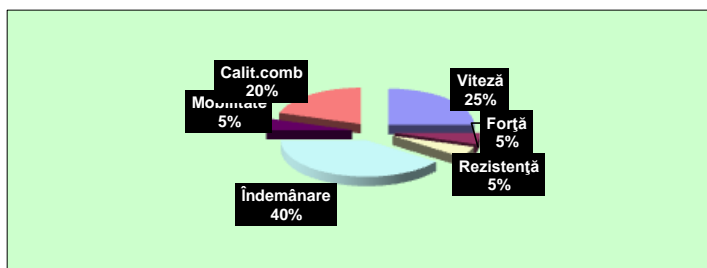


Fig.1. Graphic structure as a percentage of the main driving qualities in the training carried out on the ice.

Taking this into consideration I have made up two training plans, one for training conducted on land and one for sports training conducted on ice. I have also prepared a session plan as exemplification, specifically designed for training carried out on the ice (annex 1).

Programs designed and planning documents mentioned above were applied during a school year with effect from beginners' athletes SCM Danube Galati in the educational experiment intended.

Conclusions

Finally we can conclude that many authors have put forward, over the years, a number of methods and means of training ice hockey beginners, however according to our study little attention has been given in the academic literature, to movement games as methodical process, having in mind that many experts have indicated an increased efficiency of these games, especially in the opening period; fact which applies to the majority of sports.

Refereces

1. ALEXE N. și colab. - *Antrenamentul sportiv modern*. - Editis- București, 1993.
2. BOMPA T.O - *Periodizarea*. - Teoria și metodologia antrenamentului sportiv.- ediția a-IV-a.- EX PONTO.- Constanța, 2001.
3. CHIRIȚĂ G. - *Educație fizică prin jocuri de mișcare*. - Editura Sport-Turism.-București.
4. CRIHAN V. *Hochei pe gheață*. - Editura Sport-Turism.-București, 1982 .
5. DRAGNEA A.C MATE-TEODORESCU S. - *Teoria sportului*.- FEST .- București, 2002.
6. ZAPLETAL M. - *Mică enciclopedie a jocurilor*. - Editura Sport Turism.- București, 1980.
7. KOSTKA V., WOHL P., KOLEKTIV A. - *Treninkmladych hokejistu*, - Ed. Olimpia.-Praha, CSTV, 1979.

Structura și conținutul unei programe experimentale privind pregătirea hocheiștilor începători, vârsta 9-11 ani

Rezumat: Problema cercetării pregătirii hocheiștilor începători a fost și este în atenția multor specialiști

din acest domeniu, specialiști din țară, dar mai ales de peste hotare. Hocheiul pe gheață ca joc sportiv, are caracteristici și particularități proprii care se dezvoltă continuu, această dezvoltare presupunând o pregătire complexă la nivelul tuturor factorilor antrenamentului. Lucrarea prezintă ponderea factorilor antrenamentului în pregătirea începătorilor precum și procentajul jocurilor de mișcare și a calităților motrice în structura unei lecții de antrenament. În final am alcătuit un plan de etapă precum și un plan de lecție, ambele cu titlu orientativ.
Cuvinte cheie: hochei pe gheață, începători, programa experimental.

Structure et contenu des programmes de formation sur hockey niveau expérimental joueurs débutants 9-11 ans

Résumé: Le problème de recherche a été débutants de hockey et a l'attention de nombreux spécialistes dans ce domaine, des spécialistes dans le pays, en particulier de l'étranger. Match de hockey sur glace qui a un caractère particulier et sans cesse croissante, ce développement impliquant une formation complète sur tous les facteurs de formation. Cet article présente les facteurs de pondération ainsi que la formation en cours de préparation pour les débutants. J'ai finalement fait un plan détaillé et un plan de leçon, à la fois comme un guide.

Mots-clés: hockey sur glace, novice, le programme experiment.

SESSION PLAN

TEAM CHILDREN.....

Period preparatory.....Etap.....Duration...28.....Days.....

COACH...M.Cr...

Training Objectives (to the training components)..... comprehensive physical development, specific physical development, learning and strengthening key elements and basic skating techniques, develop team spirit and cooperation in the game learn the main rules for the conduct of games of movement

PROGRAMMING PREPARATION	DAYS DATE	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Monday		Tuesday	
		A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P
	PREPARATION Nr.	18	19	20	21	22	23	24	25	26	27	28	-			28	29	30	31
COMPONENTS	Methods materials tools (exercises)	WORKING TIME FROM THE OBJECTIVES																	
1	PFM PFS_e	10		5		5		5		5		10				10			5
	1.1Ex..to the preparation, jogging																		
	1.2Circuits with dim							15		20									
	1.3Complementary sports			10		10		15				15				10			10
2	PFS_p	10				10						10				15			
	2.1Ex. to the, development of the reaction rate																		
	2.2Preparation to mixed qualities (f-v),(v-î)							10		30									
	2.3Circuit technical-speed regime			30															30
3	TEHICAL PREPARATION	20		10		10		10		5		20				25			10
	3.1Ex. .to skating			10		10		20		5									10
	3.2Ex. .to dribble			10		10		10		5									10
	3.3Ex..to shoot					10													
4	PREPARATION TO GAMES OF MOVEMENT	30		30				30		30		30				30			30
	4.1Team games			10		30													10
	4.2 Games to the correct execution																		
5	PSYCHOLOGIC AL PREPARATION			5		10				5									5
	5.1Combativeness, aggression, controlled																		
	5.2 Emotional self-regulation	5						5				5							
	5.3 Team spirit, cooperation in game																		
6	TEORETICAL PREPARATION	10		10								10				10			10
	6.1Rules of actions																		
7	RATING	20				25		20		15		20				20			
	7.1 Samples and control standards, verification games																		
8	OTHER ACTIVITIES																		
	8.1 Medical visit, administrative work, analysis meetings, cultural activities																		
9	TRAINING DURATION (MINUT)	120'		120'		120'		120'		120'		120'				120'			120'

Annex 2. A. The fundamental.

TRAINING PLAN - specifically for game motion

Period : Preparatory held on ice

DATA : 7 Ianuarie 2002.

EFFECTIV : 25 sportivi.

LOCUL : patinoarul artificial din Galați.

TEMA nr.1 Strengthening dribbling, the acquisition and pucului bird, from the place of displacement.

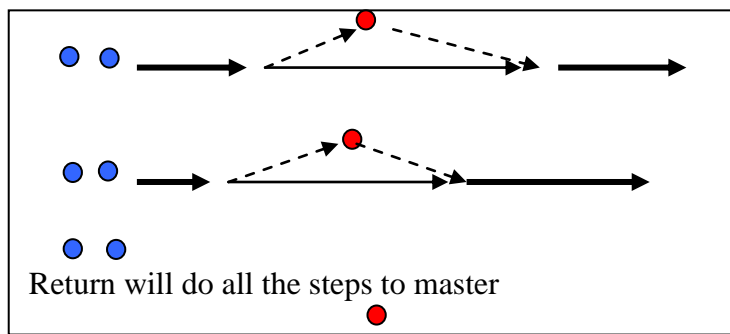
TEMA nr.2 : Acquisition and consolidation of the place and bird movement, repeating interception.

The Preparatory. Ex. light skating face different variants (low sliding position, sliding crouched on one foot, sliding your feet apart, etc.) ex. light skating backwards in different variants, eg. of basic gymnastics done on the place or easy glide, ex. mobility, eg. of breaths. 25 minutes.

Theme no. 1. 30 min.

1. Ex. skating with the inter-benchmarks with and without management pucului. Ex. skating backwards among landmarks. Ex-step acquisition in two or three partners on the spot or in movement. 5-7 minutes.

2. **"Relay the captain"** - The competition takes place on land length hockey and team will be divided into several teams, players being placed in the column. Each team has one captain, in the middle ground in their team right. He will receive the passing of every teammate and forward pucul. Team that finishes first wins over. Master role is crucial, it depends on the precision passing and rapid deployment of the journey. Options for deployment: the route can hold back the introduction of benchmarks that will be bypassed.



THEME 2- 30 minutes

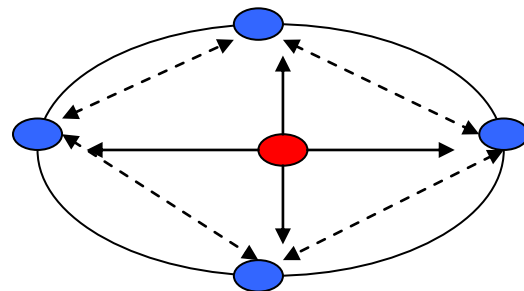
1. Ex. of step-taking in pairs across the width of the land of hockey. Executions take place early on and then go. The distance between the partners will increase gradually. 5-7 minutes.

2. Player movement: **"cat in the middle"**. The game takes place on the land of hockey circles, the four colleagues and a "cat" in the middle. Pucul teammates passes between them, and at the middle trying to reach pucul. If the cat reached the club pucul passes instead of one that reached the wrong care, reversing the roles. Win one who did not pass at all in the role of cats. Options for deployment: those passes can go ahead, or you can go but only on the circle, they have to do anything for the "cat" does not touch puck.

C. The closing - 4-5 minutes

Ex. light skating face, combined with the ex. Gymnastic, ex. of breathing, forced inspiration, ex. Mobility-light muscle strains.

At the conclusion will be made "on the fly" assessments and recommendations for training completed. It will highlight athletes who have won races.



THE IMPLEMENTATION OF THE METHODOLOGY CONCERNING THE SELECTION AND TRAINING OF THE YOUNG PLAYERS (14 TO 15 YEARS OF AGE), IN FOOTBALL

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Summary: The present research reflects the strategies concerning the selection and preparation of the young footballers for the development of the physical, technical and tactical factors which will have a direct effect over the game.

Key words: selection, training, driving trials, team, training methods.

Introduction

Football contemporary as any collective sporting event, or maybe more than others, involves behaviors that focus on performance. Driving qualities (speed, strength, endurance, ability) are not far enough to practice a high-class football, namely at the level at which it is practiced today in the world.

In other words, it is absolutely necessary to a performance benefit from the support of physical effort and continuing high acquisition parameters and build the best techniques, strategies and tactics for conducting a correlation (within the team and to opponents), with acquisition a solid theoretical training, while maintaining a fit.

This also includes an imaginative and creative thinking in individual initiative and collective components of a team that can infer and predict the opponent's intention at any time, so to be able to counteract and destroy.

The period (14 to 15 years of age) is a very important in the development of the players. Therefore, knowing the age and education will contribute to an appropriate training beneficial. In this phase of training, body children suffer significant changes, the height and weight, along with development and improvement of its functions. This is the phase in which children change their essential quality of different organ systems, the emergence of new functions (Giacomini, M., 2009).

At this age, the harmonious development of morphological indices of the body should stay in the coach's attention that, by appropriate means, to act systematically on all muscle groups, both analytically and globally. We recommend that this be done in each workout, aiming to ensure the quality of muscles and joints working (Cojocaru, V., 2000). And in this phase will further develop basic motor and

specific qualities of coordination, speed (in all its manifestations), resistance and will start work force development and general and specific (especially through the use of similar means and play the game). Expansion, mobility, flexibility, balance and coordination must be developed properly due to their contribution to the improvement of technical and tactical game required harsh. It is an extremely important step, in which the initial selection, a rate close to final completion of the batch of players (Rădulescu, M., 2009).

Aim

The research purpose is the establishment of the most important aspects of preparing players (14 to 15 years of age), highlighting the typical training methods and means of age, criteria for estimating the value of sports players, forming a discretion in selecting the appropriate image.

The hypothesis

- We assume that the peculiarities of specific training (14 to 15 years of age) will remove the appearance of empirical treatment for preparing football;

- Suppose that the knowledge level of preparation by studying the results of control samples will lead to an appropriate dose concerning the effort of children (14 to 15 years of age);

- Suppose that the criteria of biological, psychological and sports specific field will also positively influence the children;

- Suppose that the knowledge and strategies for initial selection elements will have a major role in determining the future of the young players.

Research methods

In order to achieve the work we used mainly the following methods of research: scientific documentation, statistical method,

observation, experimental methods. The results obtained will be milestones in preparing players football at this level.

The contain and development of the experiment:

The subjects of this research were represented by the experimental teams which both have 20 children from L.P.S. Galati, born in 1995 and 1996, coach: Oprea Adrian.

The trials used in this research were:

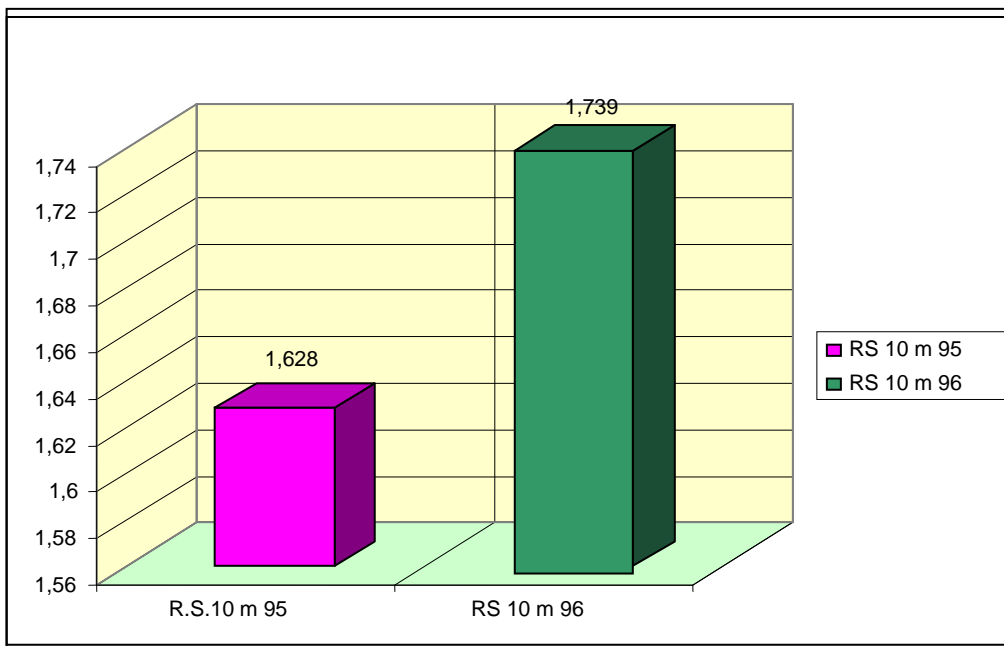
- running speed on 10 and 30 meters: Start standing, bend at the beep. It's run by 2, the synthetic field;
- standing long jump;
- crate - 4 x 5 m. run in maximum speed between two cones placed 5 meters apart;
- running resistance Cooper test (Drăgan, A., 2009).

*Table no. 1
Running speed on 10 m*

No.	Name	Running speed on 10 m (s)		Name
		g. 1995	g. 1996	
1.	C.C.	1,62	1,73	S.S.
2.	D.A.	1,71	1,85	D.A.
3.	L.C.	1,60	1,63	P.B.
4.	R.S.	1,71	1,75	B.I.
5.	F.T.	1,60	1,79	R.V.
6.	A.E.	1,55	1,67	A.E.
7.	U.O.	1,68	1,89	V.A.
8.	S.F.	1,62	1,54	B.R.
9.	L.D.	1,73	1,91	C.V.
10.	E.A.	1,69	1,76	S.M.
11.	G.N.	1,77	1,83	V.A.
12.	B.M.	1,48	1,91	V.M.
13.	B.A.	1,70	1,86	P.P.
14.	V.D.	1,66	1,56	S.A.
15.	I.S.	1,58	1,67	L.M.
16.	M.C.	1,61	1,57	P.B.
17.	B.A.	1,57	1,59	B.S.
18.	P.I.	1,47	1,67	R.I.
19.	R.L.	1,63	1,78	V.D.
20.	N.M.	1,59	1,82	V.S.
Arithmetical average		1,628	1,739	
Minimum		1,47	1,54	
Maximum		1,77	1,91	

*Table no. 2
The average levels at running speed on 10 m*

The average levels	Running speed 10 m (1995)	Running speed 10 m (1996)
Results	1,628	1,739



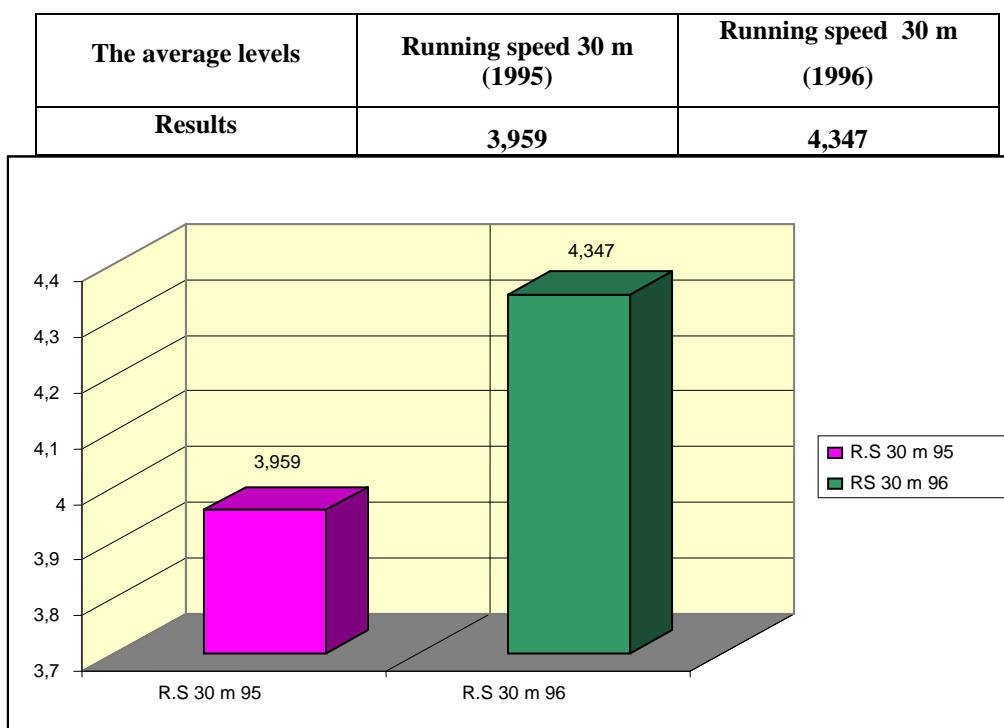
Type 1. Running speed on 10 m – the average levels

The difference between the two groups is 0,111 seconds (1,628 s - gr. 1995, compared to 1,739 s. - gr. 1996), according to the tables 1, 2 and type 1.

*Table no. 3
Running speed on 30 m*

No.	Name	Running speed on 30 m (s)		Name
		g. 1995	g. 1996	
1.	C.C.	4,12	4,41	S.S.
2.	D.A.	4,16	4,36	D.A.
3.	L.C.	4,02	4,87	P.B.
4.	R.S.	3,96	4,51	B.I.
5.	F.T.	3,79	4,33	R.V.
6.	A.E.	4,15	4,28	A.E.
7.	U.O.	3,75	4,97	V.A.
8.	S.F.	4,16	4,19	B.R.
9.	L.D.	3,97	4,09	C.V.
10.	E.A.	3,68	4,40	S.M.
11.	G.N.	3,99	4,55	V.A.
12.	B.M.	3,80	4,64	V.M.
13.	B.A.	4,20	4,35	P.P.
14.	V.D.	3,88	4,30	S.A.
15.	I.S.	3,79	3,96	L.M.
16.	M.C.	4,32	4,18	P.B.
17.	B.A.	4,08	4,10	B.S.
18.	P.I.	3,76	4,23	R.I.
19.	R.L.	3,69	4,05	V.D.
20.	N.M.	3,92	4,18	V.S.
Arithmetical average		3,959	4,347	
Minimum		3,68	3,96	
Maximum		4,32	4,97	

Table no. 4 The average levels at running speed on 30 m



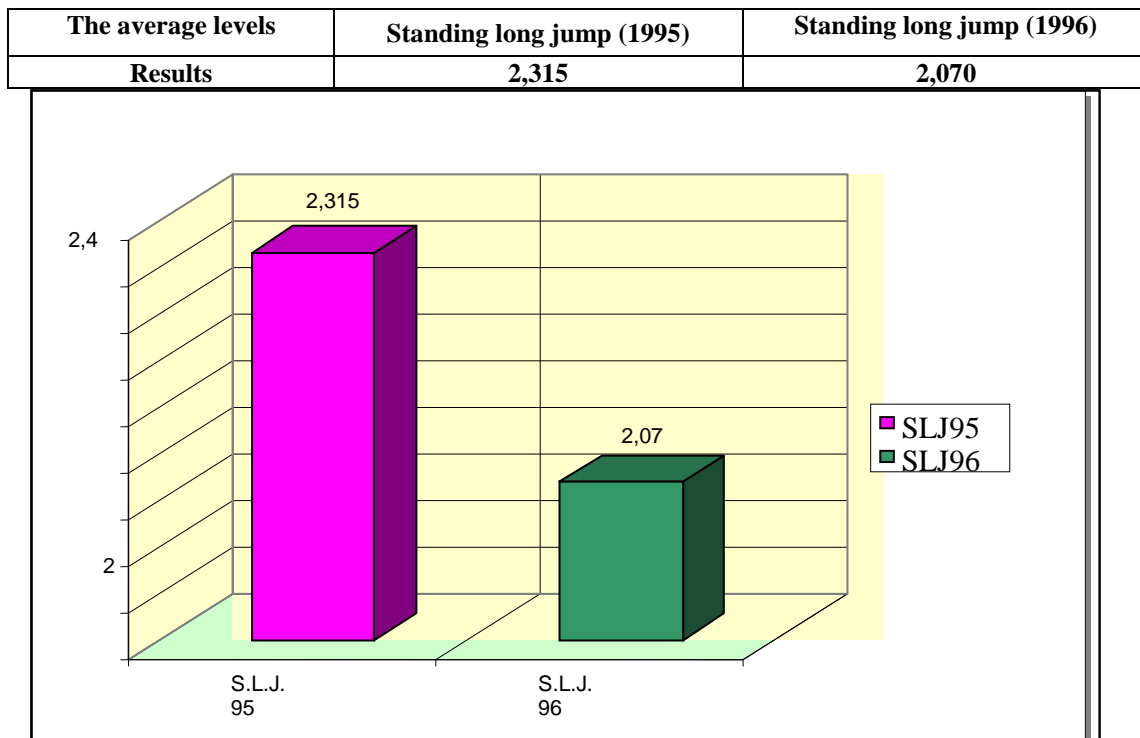
Type 2. Running speed on 30 m – the average levels

At this test, the difference between the two groups is 0,612 seconds (3,959 s - gr. 1995, face to 4,347 s. - gr. 1996), according to the tables 3, 4 and type 2.

Table no. 5
Standing long jump

No.	Name	Standing long jump (m)		Name
		g. 1995	g. 1996	
1.	C.C.	2,3	2,28	S.S.
2.	D.A.	2,40	2,03	D.A.
3.	L.C.	2,20	1,98	P.B.
4.	R.S.	2,30	1,91	B.I.
5.	F.T.	2,40	2,03	R.V.
6.	A.E.	2,45	2,08	A.E.
7.	U.O.	2,35	2,12	V.A.
8.	S.F.	2,10	1,92	B.R.
9.	L.D.	2,35	2,29	C.V.
10.	E.A.	2,10	2,11	S.M.
11.	G.N.	2,30	2,27	V.A.
12.	B.M.	2,35	2,08	V.M.
13.	B.A.	2,50	2,09	P.P.
14.	V.D.	2,30	2,02	S.A.
15.	I.S.	2,25	2,08	L.M.
16.	M.C.	2,35	2,22	P.B.
17.	B.A.	2,15	1,86	B.S.
18.	P.I.	2,40	2,15	R.I.
19.	R.L.	2,45	1,84	V.D.
20.	N.M.	2,30	2,05	V.S.
Arithmetical average		2,315	2,070	
Minimum		2,1	1,84	
Maximum		2,5	2,29	

Table no. 6
The average levels at standing long jump



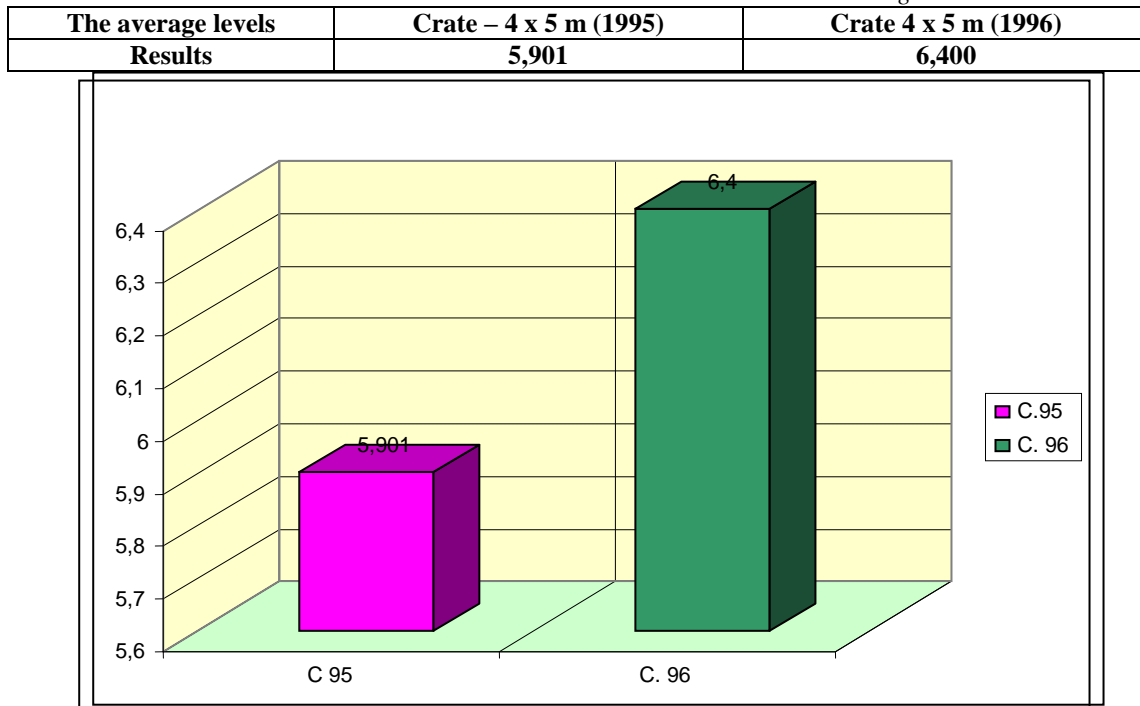
Type 3. Standing long jump – the average levels

The difference between the two groups is 24,5 cm (2,315 m - gr. 1995, compared to 2,070 m - gr. 1996), according to the tables 5, 6 and type 3.

Table no. 7
Crate - 4 x 5 m

No.	Name	Crate- 4 x 5 m		Name
		g. 1995	g. 1996	
1.	C.C.	5,90	6,18	S.S.
2.	D.A.	5,87	6,57	D.A.
3.	L.C.	6,12	6,66	P.B.
4.	R.S.	6,20	6,69	B.I.
5.	F.T.	5,99	6,80	R.V.
6.	A.E.	5,87	6,53	A.E.
7.	U.O.	5,69	5,87	V.A.
8.	S.F.	5,85	6,81	B.R.
9.	L.D.	6,01	6,14	C.V.
10.	E.A.	5,80	6,55	S.M.
11.	G.N.	5,76	6,33	V.A.
12.	B.M.	6,18	6,30	V.M.
13.	B.A.	5,77	6,18	P.P.
14.	V.D.	5,88	5,64	S.A.
15.	I.S.	5,68	6,43	L.M.
16.	M.C.	5,70	5,93	P.B.
17.	B.A.	5,93	6,66	B.S.
18.	P.I.	6,12	6,59	R.I.
19.	R.L.	5,91	6,87	V.D.
20.	N.M.	5,80	6,28	V.S.
Arithmetical average		5,901	6,400	
Minimum		5,68	5,64	
Maximum		6,2	6,87	

Table no. 8
The average levels at crate – 4 x 5 m



Type 4. Crate – 4 x 5 m – the average levels

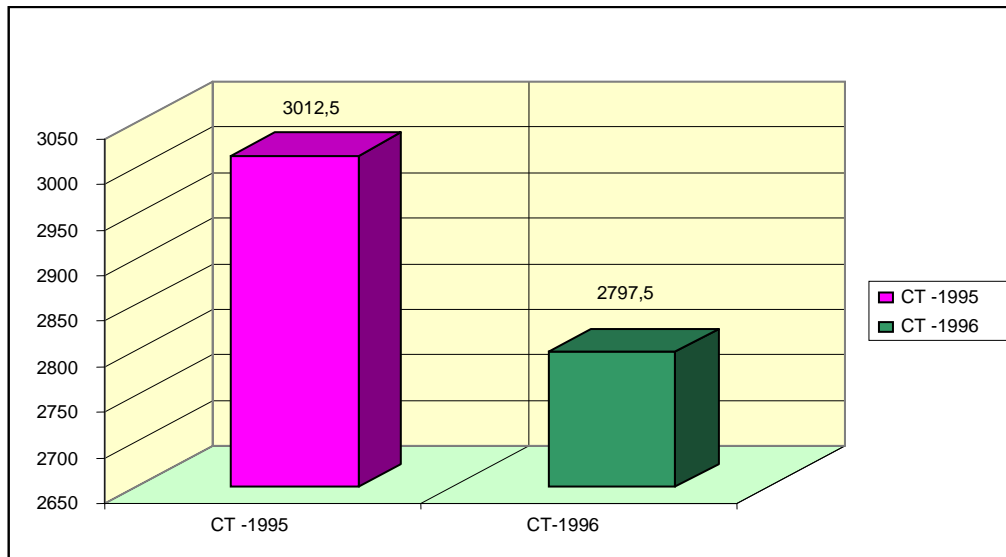
At this trial, the difference between the two groups is 0,499 seconds (5,901s - gr. 1995, face to 6,4s -gr. 1996) according to the tables 7, 8 and type 4.

Table no. 9
Running resistance Cooper test

No.	Name	Cooper test		Name
		g. 1995	g. 1996	
1.	C.C.	3200	2560	S.S.
2.	D,A.	3170	2870	D.A.
3.	L.C.	2990	2980	P.B.
4.	R.S.	3100	2620	B.I.
5.	F.T.	2980	2900	R.V.
6.	A.E.	2870	2630	A.E.
7.	U.O.	3200	2560	V.A.
8.	S.F.	3200	2400	B.R.
9.	L.D.	3250	3050	C.V.
10.	E.A.	3230	2600	S.M.
11.	G.N.	2700	2630	V.A.
12.	B.M.	2670	2610	V.M.
13.	B.A.	2860	2680	P.P.
14.	V.D.	3000	2900	S.A.
15.	I.S.	3030	2870	L.M.
16.	M.C.	2880	2620	P.B.
17.	B.A.	2920	3100	B.S.
18.	P.I.	3100	3200	R.I.
19.	R.L.	2900	3050	V.D.
20.	N.M.	3000	3120	V.S.
Arithmetical average		3012,5	2797,5	
Minimum		2670	2400	
Maximum		3250	3200	

Table no. 10
The average levels at Cooper test

The average levels	Crate – 4 x 5 m (1995)	Crate 4 x 5 m (1996)
Results	3012,5	2797,5



Type 5. Cooper test – the average levels

Also, there is a difference between the two groups, namely 215 m (3012,5 m - gr. 1995, compared to 2797,5 m - gr. 1996), according to the tables 9, 10 and type 5.

Conclusions

- We observe that, at all the tests there is a significant difference between the two teams.

- In the classroom, the design and conduct of their content, the coaches will give full consideration to the following requirements:

- Content of the lessons of that week (3 or 4) to be established at the beginning of each cycle, so by chaining their components (technical, tactical, physical training) and the objectives that constitute a system lessons with a well-defined functionality.

- Every week course of lessons, even during the competition period will be repeated the techniques and fundamental tactical actions with the same consistency, basic exercises for developing motor qualities and morphological indices of the body. Along with the repetition of these basic elements, the system will include lessons and the continual enrichment of technical and tactical weapons, executions, and by acquiring new shares, and improve those processes favorite players and enable them to exploit the superior efficiency conditions, their individual skills.

- In all courses weekly lessons will be given to properties of components in-depth and

accurate preparation and, in any case, the only limitation of this process closely related requirements, but limited to, the conduct of the championship game. The same interpretation will be given training and job satisfaction of children met the team. At this age, strict specialization of positions is a methodical error, it can not be located before the need to thoroughly master the fundamentals of technique and bilateral game.

- With each lesson building on the training, attention is directed toward coaches with the following requirements:

- Each lesson clearly specify the objectives to be met by members of the team, thereby establishing specific contribution, independently of each lesson, the completion and enrichment of children continues to fund training. Along with the themes and setting of the option depending on whether it will conduct exercises that specify educational objectives closely related to the cultivation in children of the discipline, focus, innovative spirit, speed of thought.

- Choosing the most effective ways and means to achieve the lesson themes. This requirement involves scheduling of those exercises that structure and what it calls an effort to influence as full training needs. In other words, the essence of teaching lies in the selection and effective exercises confirmed that the advanced practice of modern football and has a wide variety of structures, many, but

without the necessary effectiveness. In preparing children will start also from the requirement that the techniques taught in the present executions correspond to modern football and not those which by their nature are obsolete today.

- Determination of the volume and intensity judicious effort. In this direction, coaching is guided by the requirement methodical widespread today, according to the high volume of activity that we must meet a low intensity and vice versa. In general it can be noted that prepare children, being dominated by the requirement of contributions, increased workload, has a great significance to obtain indicators of progress.

- Rational use of lesson time allocated. This requirement involves judicious organization of business students, ensuring workload and intensity of effort needed training and improve driving skills and qualities expected to be achieved in that lesson. Organization of work on the compartments, individually or with the whole team, these alternate methods of organizing the team, must optimize the performance objectives, waste of time by removing inefficient activities.

- Parallel organization of work with all staff must be motivated and the work of the individual child.

Corresponding to this requirement, the coaches alternated performing the exercises included in the lesson plans with pre-established children's favorite or variations on the same theme, but done individually, without direct control of the coaches.

Establish times when children work in the lesson takes place on their own initiative addresses the requirement to increase personal responsibility for preparing their own and also provides a good opportunity to stimulate the innovative spirit of independent orientation.

• Friendly and formal games as another form of organizing the training of children, increases the possibility of training young footballers superior because, through them, it always enriches the ability to compete in sports-specific requirement.

• After kinds of games, especially those friendly, they can get a training precedence (the school games, themed games), verification (uniform team, trying a new formula of its power) and competition where the weight is on

the implementation of various actions and improve their technical and tactical. The other form of organization of training, independent work of children refers to the practice by the players during their free time, some additional exercises, able to complete the training.

• All forms used in independent work of children, especially if practiced frequently, may contribute to the development of morphological and functional indices of the body, to improve technical and tactical execution and driving quality standards, parts of great significance for achieving higher efficiency.

References

1. Cojocaru V. - „*High performance preparation strategy for the young players*”, Axis Mundi Publishing House, Bucharest, 2000.
2. Drăgan A. - „*Football for young players*”, Valinex Publishing House, Chişinău, 2006.
3. Drăgan A. - „*Football – conceptions, methods and means*”, Mongabit Publishing House, Galaţi, 2006.
4. Drăgan A. - „*Interdisciplinary Approaches in Football*”, Ed. Academica, Galaţi, 2007.
5. Drăgan A. - „*Optimisation of the lesson training in football as a discipline*”, Galati University Press, Galaţi, 2009.
6. Massimo Giacomini - „*The technical guide for the schools of football*”, Italy 2009.
7. Rădulescu M., Cojocaru V., Drăgan A. - „*The guide of football coach at children and youngsters*”, Axis-Mundi Publishing House, Bucharest, 2003.
8. Rădulescu M. – Damian M. - „*Football – pro – Guide of the professional coach*” – Didactic and Pedagogical Publishing House, Galaţi, 2009.

Implementarea metodologiei privind selecția și pregătirea juniorilor (14 – 15 ani), în fotbal

Rezumat: Prezenta cercetare reflectă strategiile cu privire la selecția și pregătirea tinerilor fotbaliști pentru dezvoltarea factorilor fizici, tehnici și tactici care vor avea un efect direct asupra jocului.

Cuvinte cheie: selecție, antrenament, probe motrice, echipă, metode de pregătire.

La implementation du méthodologie concernant la sélection et préparation des juniors de 14-15 années, dans le football

Résumé: La présente recherche reflète les stratégies concernant la sélection et préparation des jeunes footballeurs pour la développement des facteurs physiques, techniques et tactiques qui auront un effet direct sur le jeu.

Mots clefs: sélection, entraînement, épreuves motrices, équipe, méthodes de préparation.

PSYCHO MOTILITY AND ITS DEVELOPMENT IN PRESCHOOL AGE JUDO

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Summary: *Developing psycho motility is a complex process presenting a number of general characteristics: quantitative accumulations favour the occurrence of qualitative leaps leading to the manifestation of new forms of behaviour. Through successive restructuring, the newly acquired skills will include the previous ones; the evolution takes place on stages, each age stage having certain characteristics. Practising judo as a game may contribute to the efficiency of this process.*

Key words: *psycho motility, judo, preschoolers.*

Specialists approaching the issue of psycho motility unanimously agree that its comprehension is conditioned by the approach of the human being as a two-sided entity: mental and motor.

The connection between the two and its development within the area of multidisciplinary sciences was called psycho motility, defined as the result of integrating the motor and mental skills, under the effect of the nervous system maturation, bearing on the rapport of the subject with his body and environment.

If at first theoretical studies approached psycho motility mainly from the point of view of motor development and its relation to intelligence, present day studies approach motor structures in point of establishing relations between them and the corporal scheme, laterality and spatial-temporal structure, as well as the methods of learning and social adaptation.

In our country, M. Epuran was the first to deal with this issue, defining psycho motility as "the expression of maturation and integration of motor and mental functions at the level required by the individual's satisfactory functional integration in the environment" (C. Albu et al. 2006, p. 9).

"The importance of the mental factors in pupils' activity and therefore in the corporal and sporting activities increases as the instructive educational process becomes more organised and more demanding towards its effectiveness" (M. Epuran 1984, p. 111).

The development of psycho motility in children has a series of characteristics that deserve to be known, as they lie at the foundation of assessing the level and quality of development at a given moment.

In a nutshell, these characteristics are as follows:

- Developing psycho motility registers qualitative leaps, based on quantitative accumulations; new forms of behaviour are always superior to previous ones;

- New skills do not remove the previous ones, but integrate them through successive restructuring;

- The development of psycho motility takes place in stages, in distinct steps, having specific features for each age;

- Transformations in the field of psycho motility are continuous and indiscernible at short intervals of time. More often than not psychomotor development is asynchronous at the level of various processes and skills, some of them having their own development pace at various ages;

- There are methods and tests aimed at measuring the level of psychomotor development, such as the Gessel scale, the first scale of psychomotor development, the Brunet-Lezine scale, the Buhler and Hetzer test, the Scholl test, the scale of the Bucharest Hygiene Institute, etc.

Psycho motility components

The psycho motility area is very large, with a very complex and varied content. It may be noticed that the analytical elements coexist with the synthetic ones. At the level of motor behaviour (M., Epuran, 1984, p. 115) the elements of psycho motility are crucial in the voluntary regulation of actions, both in point of intention and purposefulness, and the mechanisms of target following, control and coordination-compensation. This importance becomes salient, the author listing as psycho motility components the following:

- corporal scheme;
- dynamic coordination (at the level of the entire body and its segments);
- laterality;
- static coordination - balance;
- the perceptive-motor coordination (space, rhythm, and own movements perception);
- quickness of movement;
- ideomotility (as a dynamic synthesis of the corporal scheme and the perceptive-motor coordinations to the motor task).

The stages of psychomotor development

Development studies have determined the elaboration of norms able to assess the child's evolution. These norms are adapted to certain age groups, so that it is possible to assess the child's performance.

Originally the child tests his abilities and gets to the point of innovating new gestures, and then movements. An unexpected movement brings the hand at eye level. Innovation is achieved through trial and error, which allows the selection of actions aimed at fulfilling an objective.

Movements gradually improve, becoming accurate and adapted to the purpose. This is the integration stage, when the nervous command improves and the sensory field connects to the motor field.

Finally the equilibrium stage is reached, when the acquired movement is precisely performed, representing the basic element for a new experience. In fact, development takes place through transforming and adapting previous experiences. It is mainly a permanent reorganisation, and less of an accumulation.

Structure of psycho motility

As a complex function determining the regulation of the human behaviour, psycho motility joins together the mental processes and functions ensuring the information receipt and the proper performance of response acts. Its structure contains a series of components, whose order and detailed description vary from an author to another, according to their formation.

Table 1 shows a synthetic view of the ideas expressed in specialised literature.

Table 1. Components of psycho motility

<i>Author</i>	<i>Components of psycho motility</i>
J.Le Boulch	The level of instrumental functions, the level of the corporal scheme structure, the emotional affective level
S.Naville	Motility, Corporal Scheme, Space Time Organisation, Education through Movement
G.Lagrange	Motor commands, Sensory-motor commands, Perceptive-motor commands
A.De Meur, L.Staes	Corporal Scheme, Laterality, Spatial structure, Time Structure, Prescription
L.Picq, P.Vayer	Corporal Scheme, Basic motor Behaviours, Perceptive-motor behaviours, Fine Motility
P.Arcan, D.Ciumăgeanu	Corporal Scheme, Dynamic coordination, Laterality, Static coordination, Perceptive-motor coordination, Fastness, Ideomotility
H.I.Kaplan, B.J.Saddock	Motor Compartment, the adaptive compartment, language and self-service-socialisation
V.Horghidan	Corporal Scheme, Laterality, Ideomotility, Motor Intelligence, Motor Response Organisation

Although there are a series of differences among authors, it may be seen that most include in the structure of psycho motility the following

elements: Corporal scheme, Laterality, Spatial Structure, Time orientation.

Table 2. Evolution of the components of motility and psycho motility in preschool

Age	General motility	Corporal scheme	Spatial and temporal orientation	Perceptions
3 years old	Balanced walk, maintaining balance on one leg, in leaps and from one leg to the other and over small obstacles Accuracy in single-handed and two-handed throws	Points to the components of the head and bodily segments.	Capable of executing displacements between two imposed landmarks.	Capable of comparing lengths of distances covered (long-short), sorting identical shapes and sizes.
4 years old	Clear distinction between walking-running-leaping. Catches and passes the ball accurately from 1 – 1.5m.	Points to the ear, eyes, hand, foot.	Indicates positions such as up-down, front-back.	Sorts objects by colour, compares objects of different weights. .
5 years old	Disposes of a broader range of leaps, balance is developed, accuracy in throwing and catching is improved.	The acquisitions of the previous stage are consolidated.	Learns new spatial positions: sidewise, forward-backward.	Perceives and distinguishes spatial positions, colours and nuances.
6 years old	Previous acquisitions also include vertical jumps. Capable of reproducing movements at the same time as the model.	Recognizes left-right.	Uses and applies spatial and temporal notions (here, there, now, then)	The quality of perceptions improves in all sensory registers.

The objectives of practising judo at this age are:

- Maintaining health;
- Favouring the growing processes and achieving a harmonious physical development;
- Developing basic motor skills and judo specific skills;
- Forming basic, applicative-utilitarian and judo-specific basic motor skills and abilities;
- Forming the ability and habitude to practise physical exercise, including in the spare time;
- Developing moral volitional and intellectual qualities and features, the aesthetic sense and social responsibilities.

The objective of practising judo at this age group:

- Spending the spare time in a pleasant and organised manner;
- Integrating children in teams and socialisation;
- Developing psycho motor and moral volitional skills (personality);
- Promoting judo.

General characteristics of psychomotor development and their educational consequences

In any educational approach, aiming at tackling the issue of psycho motility, the starting point should be finding the general characteristics of psycho motility:

- the psychomotor development takes place in stages, each stage having certain peculiarities;
- the components of psycho motility evolve in ontogenesis, on the basis of skills, depending on the process of neuro-somatic maturation and educational influences;
- in the evolution of the psycho motility components there are qualitative leaps depending on the level of the individual's physical and intellectual development;
- the progress made is the result of reorganisation on a superior level of the acquisitions of the previous stages;
- the evolution of the psychomotor area is under constant development, but the changes cannot be perceived at short intervals of time;

- in the development of the psychomotor components there may be a lack of synchronisation, due to the specific development pace of each component;
- the progress of psychomotor development depends on the neuromuscular development;
- the emphasis of significant negative differences between the individual's psychomotor development and the average normal values signal the existence of psychomotor deficiencies;
- within the area of preschool physical activities the priorities lie on the development of global motility, which influences the evolution of language and contributes to the children's success in school. Also, the exercise programs should encourage the passage from gestural expression to verbal expression, both being forms of inter-human communication;
- starting from the previous characteristics, the organisation of the activity in the physical education class departs from a number of methodological landmarks (cf. E.Firea, 1984; V.Dauer & R.Pangrazi, 1986; Gh.Cârstea, 1999).

Table 3 Peculiarities of the psychomotor development at preschool age and its consequences on education organisation

Characteristics	Implications
Psychomotor area	
Capable of rhythmical movements	Exercises on a musical background should be used
Eye-hand coordination and perception-motion coordination improve	Children will be given the opportunity to handle various objects, apparatuses; front and formation exercises will be used to improve the space-time orientation; it is time for the formation and consolidation the motor skills
Response time is short	Involvement in games presupposing object handling, decision taking, placing
Interest in sports increases, as well as in various branches and models (idols)	Initiation in certain sporting branches
Increased interest in improving effort capacity	Children will be gradually included in practising exercises to develop their motor skills
Cognitive area	
Still short attention span, agitated, noisy	Will be involved in appealing, varied activities, with short, clear explanations
Mechanical-type memory still predominant	Exercises of game rule memorisation
Increased curiosity towards the movement potential of their own body	Performing movements as varied as possible, in different positions; need for explanations on the movement possibilities; careful measures of security
Tendency to express their own ideas, initiative, high creativity	Time is assigned for individual creations, value analysis of each contribution to the lesson
Affective area	
They start understanding the idea of team work	team work, with common or differentiated tasks
Preference for physical contact, desire to "compare strengths"	Organisation of active, combat games
The pleasure provided by movement is identical at this age both for girls and boys	Involvement in common activities, avoiding separation on sexes
In the process of formation of the self-image, sensitive, individualistic	Need involvement in games requiring the firm, objective selection of the winner, learning how to win or lose
Sensitive to adult observations	The children's performance will be praised and encouraged
Desire to be in the center of attention	The teacher should find time for each pupil, avoiding favouritism
Manifest courage, desire to explore the environment, love challenges and like attempting new things	Exercises aim at developing courage, self-confidence; special security measures will be taken, in case certain apparatuses are used; opportunities to find solutions to problems should be provided

Conclusions

It may be stated that psychomotility is a complex function, integrating and joining together motor and mental aspects related to the perceptive, sensory, intellectual and motor functions, information receipt and the proper performance of the response act.

Knowing and mastering the methodology of using the most appropriate stimuli (in this case physical exercise) represent the basis for obtaining and directing the most suitable behaviour, corresponding to the objectives proposed. It is therefore natural that the entire effect of the instructive educational process depends, to a certain extent, on the personality structure, where the psychomotor skills have a fundamental role.

Given that the present paper aims at approaching the components of psychomotility within the formation and education activities through judo at preschool level and the lessons designed for this curricular area, the following will be taken into account:

- from the repetitive drill point of view, emphasis will be laid on its quality, not quantity;
- emphasis lays on forming motor skills, not motor abilities;
- first and foremost, the basic motor skills will be practised (walking, running, jumping, throwing, etc.);
- positive reinforcement will be used in developing a positive self-image and reducing fear of failure;
- training will be performed in mixed groups, girls and boys, as at this age the interests and level of development in skills are relatively similar;
- it is recommended to promote the perceptive-motor learning; acting on eye-hand coordination and handling techniques formation;
- among the instructive methods, an important role will be assigned to story telling and role playing (against the background of motor acts and actions);
- the criterion of individual progress assessment will take precedence;
- active, aware attitudes will be encouraged through the teacher-pupil dialogue, as well as pupil-pupil communication.

Bibliography

1. Albu Constantin și Adriana Albu – Psihomotricitatea, European Institute, 2006.
2. Binet A.– Ideile moderne despre copii, E.D.P., Bucharest 1975.
3. Epuran. M., Horghidan. V. – Psihologia educației fizice, ANEFS, Bucharest, 1994.

4. Horghidan Valentina – Problematika psihomotricității, Edit. ANEFS, Bucharest, 1994.
5. Miclea M. – Psihologie cognitivă, Polirom, Iași 1999.
6. Stănescu Monica – Educație fizică pentru preșcolari și școlari mici, Sem.

Psihomotricitatea și Dezvoltarea ei în Judo la Vârsta Preșcolară

Cuvinte cheie: psihomotricitate, judo, preșcolari

Rezumat: Dezvoltarea psihomotricității este un proces complex ce reprezintă câteva caracteristici generale: acumulările cantitative favorizează apariția salturilor calitative ce duc la manifestarea unor forme noi de comportament. Prin restructurări succesive calitățile noi le vor include pe cele anterioare; evoluția este stadială, fiecare etapă de vârstă prezentând anumite caracteristici. Practicarea Judo-ului sub formă de joc poate contribui din plin la eficiența acestui proces.

La Psychomotricité et son Développement dans le Judo à l'âge Préscolaire

Mots clés: psychomotricité, judo, préscolaire

Résumé: Le développement de la psychomotricité est un processus complexe qui représente quelques caractéristiques générales: les accumulations quantitatives favorisent l'apparition des croissances quantitatives qui mènent à la manifestation de nouvelles formes de comportement. Par des restructurations successives les nouvelles qualités incluront les antérieures; on présente des stades d'évolution, chaque étape d'âge ayant de diverses caractéristiques. Pratiquer le judo en tant que jeu peut contribuer pleinement à l'efficacité de ce processus.

STUDY ON THE PHYSICAL POTENTIAL OF HANDBALL GIRLS-PLAYERS, SPECIALIZED AS GOALKEEPERS

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***Abstract:** The physical training is one of the most important factors and in some cases, the most important ingredient of sport training in achieving great performance. In conducting the study on the physical potential of the handball girls-players, specialized as goalkeepers, there were tested the goalkeepers of junior team I, High School with Sports Programs, Suceava.*

***Keywords:** physical potential, handball, goalkeeper.*

Introduction

Domains experts agree that sports performance can not be achieved else, than a permanent increase in the efficiency of athletic training and adaptation of organism to different types of effort.

In addressing the physical profile of the girls-players, specialized as goalkeepers, the experts have common views about the future of goalkeeper training.

Researches emphasize increasing the body's ability high school-age children, to cope with motility tasks with indices raised by speed, skill and strength, with boys showing greater willingness than girls.

Due to capacity of the development of central nervous system and motor centers of the cortex, there is a significantly improved motor coordination capacity and consequently increase the skill level, more prominent in boys than in girls.

These movements allow for a higher degree of coordination and implementation of improvement also favors perfection in exert of learned motile acts. The only quality that is diminished is the joint mobility, and this is most noticeable in boys than in girls. Things mentioned above, lead to the conclusion that under the laws of growth and body development at the age of 14-18 years adolescent is apt to relatively high physical effort, as volume, intensity and complexity, and it is more visible in boys than girls.

Materials and methods

In the experiment, subjects were used as the junior I, girls-team goalkeepers, High

School with Sports Programs, Suceava. During the experimental work, has benefited from an outdoor handball court and a multipurpose gymnasium type.

To assess the experiment there were tested a number of three girls-players specialized as goalkeepers. Initial testing was done in September 2010 and final testing was done in January 2011.

To check:

Motility level:

- Displacement in a triangle shape;
-5x30m Flat-break 30'' between repetitions;
- Handball ball throwing away the momentum of three steps;
- Five steps long jump;
- Cooper test.

Hypothesis

If there are used the most effective means for achieving those objectives, then the results will be positive both in the development of force, but also in terms of acquiring technical and tactical elements of the game and practice game bilaterally.

Research Tasks

- Specialty literature study;
- Knowledge of initial level of the athletes specialized as goalkeepers;
- Knowledge of training conditions in high school;
- Finding the best ways and means to achieve its purpose;
- Planning and preparing programming content;
- Methodical recommendations for methods and means used to create the physical

profile of the handball girls-players specialized as goalkeepers.

Displacement in a triangle

The girls-players will be at the start with the left foot on the circle from the left of the base of the triangle and facing at the half circle from 9 meters. At the starting signal, athletes will move to add steps or cross to the right side, until the other foot touches the circle of the base of the triangle. Then moves to add or cross steps forward to reach the circle from the top of the triangle and continuing still add or cross the steps, will move back, touching the circle from where initially begun. Move immediately proceed in reverse, finally reaching the left circle on the base of the triangle.

The two ways travel is a complete route, the event containing three such routes.

The event will be repeated twice, taking in consideration the best time.

Information about rules of evidence and control testing-5x30m

The event will consist of 5 runs on the distance of 30m, with a break of 30" between runs. It will run from the start, standing at a distance of 1m behind the starting line. Break 30" will be followed strictly. It will record all five runs and will be the arithmetic mean.

Throwing away the handball ball with a momentum of three steps

Use statutory handball ball (for girls weighing 325-375 grams and 54-56 cm in circumference).

The handball ball will be thrown away after a momentum of three steps. For throwing the ball, it can be used the crossed or added step.

It will run two throws, taking in consideration the longest one.

The five steps long jump

The event consists of five steps in the execution of the starting position and having one leg fixed on the ground behind the start line. It will run two tests, and the best will be taken in consideration.

Measurement will be made at the start line until the last mark left by the athlete on the sand, at the landing.

Cooper test

It will run twelve minutes. This event will be sustained on the running track; athletes have the right to stop or to walk during the test without leaving the track. The start is in the group. End of proof will be announced by the whistle after 12 minutes, and the athletes will have to stop at this signal.

Exercises used to train goalkeepers of handball

Exercises for defending the ball, thrown at a lower level

1. In addition to rolling back next to the bar, on the goal line; return to squat; lunge quick reaction to a ball thrown from 4-5m, conditioning the hand and foot to close the path of the ball (the hand in front of the foot). Repeat on both sides.
2. Standing in the fundamental position near the bar. Step forward, crouch, and then step sideway and lunge for defending a powerful throwing ball. The arm will be placed in front of the foot. It runs on both sides.
3. On the knees, with the arms in the fundamental position. The ball is thrown away from a distance of 4-5m, strongly. Simultaneous reaction with the arm and the leg (the palm in front of the foot). It runs on both sides.

Exercises for defending the balls, thrown at a higher level

1. Rolling on the middle of the goal: return to squat, jump on the side with both arms to a strong throwing ball. Return to starting position. Repeat on the other side.
2. Fundamental position, next to the bar: then squat, jump on the side reaction with both arms to a strong thrown ball sent in the direction of the other bar. Return to starting position. Repeat at the other bar.
3. Rolling back next to the bar: then squat, jump on the side and reaction with both arms to a ball thrown strongly in the direction of the opposite bar. Return to starting position. Repeat at the other bar.

Exercises for the recovery and release of the ball

1. Passes to a distance of 10-30m.
2. Throwing the ball at the distance with momentum, and added or crossed steps.
3. Release the ball at a fixed point, near the center of the track.
4. Release the ball to a player who is continuously moving on the center line of the track, throughout its width.
5. Release the ball to the players who run, facing the opposed goal.

Results and discussions:

Results obtained from initial and final tests of the goalkeepers, were recorded in some summary tables.

Table 1. Results obtained in control tests, the initial test

No.	Full name	Triangle displacement	5x30 average	Throwing of the handball ball	Five steps long jump	Cooper Test	Total points
1	Diana Ivanov	19.00 = 38 p.	5.4 = 34p.	34m = 47 p.	11.5 = 43p.	1970m = 45p.	207 points
2	Justina Ungureanu	18.8 = 39 p.	5.3 = 42 p.	32m = 41 p.	10.90 = 38 p.	1960m = 46 p.	206 points
3	Diana Solomon	19.1 = 36 p.	5.4 = 34 p.	32m = 41 p.	11.20 = 43 p.	1960m = 46 p.	200 points
4	average arithmetic	18.96 = 38p	5.36 = 38p.	32.66 = 42P	11.08 = 41p	1963.33 = 46p	204 points

Table 2. Results obtained in control tests, the final test

Nr. crt.	Full name	Triangle displacement	5x30 average	Throwing of the handball ball	Five steps long jump	Cooper Test	Total points
1	Diana Ivanov	18.8 s = 40p	5.2 s = 49p	34m = 47p	11.20 m = 44p	1980m = 48P	228 points
2	Justina Ungureanu	18.4 s = 45p	5.3 s = 42P	33m = 44p	11m = 40p	1990m = 48P	219 points
3	Diana Solomon	18.9 s = 37p	5.3 s = 42P	34m = 47p	11.25 m = 44p	1970m = 47p	217 points
4	average arithmetic	18.7 s = 41p	5.26 s = 45p	33.66 m = 46p	11.15 m = 43p	1973.33 = 47p	221 points

Of the five control tests, the three girls having the position of the goalkeepers have better values than the initial testing, at the final

testing. They manage to get a higher score in the final testing, such as 221 points (average) to 204 points obtained in initial testing.

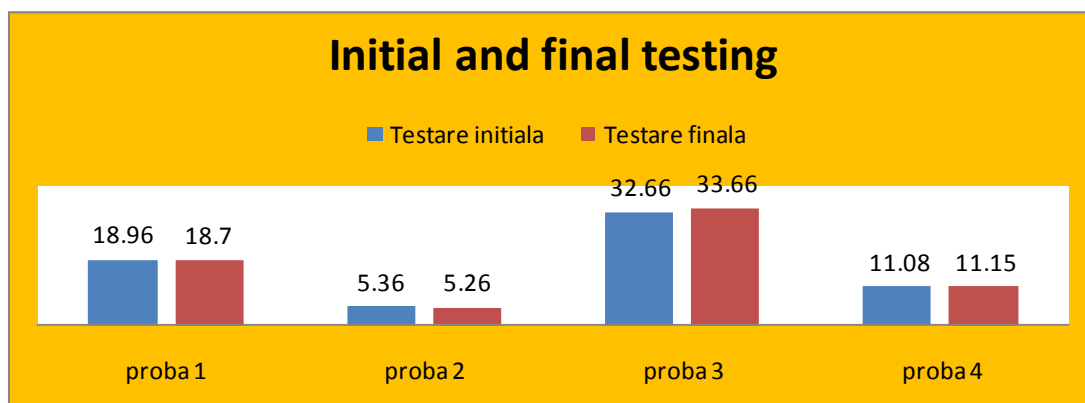


Figure 1 Results from initial and final testing

From the two tables it shows an improvement of the records for all athletes for a movement in a triangle, points up from 38p to 41p.

An increase in score is observed in the second test from 38p to 45p. The girls- players obtained at the final test for test # 2, a decrease in the average.

For the test # 3 (handball ball throwing) all athletes threw for final testing at a distance greater than the initial testing, the score increasing from 42p. to 46p.

As with other tests a progress is achieved and at the test # 4, final score increases from 41p to 43p, so you can see in Figure 1.

A progress is observed and in the case of the Cooper Test, from 46p. to 47p.

Conclusions

The research hypothesis on the tested athletes on the force development was confirmed.

We have concluded that regardless of motile development presented at the initial testing of the three girls-athletes, using an optimum number of materials can reach motile values close to model selection or sometimes even better values than the model selection.

The final testing may notice an increase in scores at all control tests.

In the study, we found the need to use in preparing teaching aids such as balls of different sizes and weights, the sling-ball, jumping ropes, Therra-bands, gymnastics benches.

Bibliography

1. CERCEL, Paul – Handbal, Exerciții pentru fazele de joc, Editura SPORT-TURISM, București, 1980.
2. BOTA, Ioan – BOTA, Maria – Handbal – 500 de exerciții pentru învățarea jocului.
3. CSUDOR, Gavril – Handbal – Instruirea echipelor școlare, Editura SPORT-TURISM, București 1986.
4. SOTIRIU, Romeo – Handbal, București, 1998.

Studiu privind potențialul fizic al jucătoarelor de handbal specializate pe postul de portar

Cuvinte cheie: potențial fizic, handbal, portar

Rezumat: Pregătirea fizică este unul din cei mai importanți factori și, în unele cazuri, cel mai important ingredient al antrenamentului sportiv în atingerea mării performanțe. În desfășurarea studiului privind potențialul fizic al jucătoarelor de handbal specializate pe postul de portar au fost testate portărițele echipei de junioare I, al Liceului Sportiv din Suceava.

Étude sur le potentiel physique

des joueurs – filles spécialisées au poste de gardien de but en handball

Mots-clés: potentiel physique, handball, gardien

Résumé: L'entraînement physique est l'un des facteurs les plus importants et dans certains cas, l'ingrédient le plus important dans la réalisation des grandes performances sportives. Dans le cadre de l'étude sur le potentiel physique des joueurs – filles spécialisées au poste de gardien de but en handball on a testé les gardiennes de l'équipe cadette 1^{ère}, Haute École des Sports de Suceava.

STUDY ON POWER/PERFORMANCE RATIO IN THE MEN'S 100 M EVENT

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Abstract: The main object of high performance sports is the development of **power** as a manifestation of force.

This work contemplates the prediction of **power** (as a manifestation of force) for obtaining high performance, based on the fact that exactly measurable force indicators can be easily obtained and studied.

We specify that the present research is mainly based on the analysis of lower limb force indicators and on the personal records obtained during official competition events.

There are very few who try to learn and discover more efficient ways to improve sport training, in order to get rid of older methodologies.

We think that the subject of the present research can stimulate young specialists to perform such analyses in order to permanently know how to train their athletes in order to improve their sports performance.

The present work also tries to argue that the athletes must regularly pass their fitness tests in order to know the correct relationship between their force development and the development of the other training factors.

Given the complexity of this event, the most important factors that influence the results obtained during the 100 m event are physical fitness in all its aspects, technical training, psychological training, theoretical and tactical training.

It is known that performance level in the 100 m event is influenced especially by force and implicitly by power as a manifestation thereof, both at the start and throughout the race.

The question is what is the relationship between the present factor and the other training factors?

Based on a prediction calculated by applying multiple linear regression on force/power relationship, the training may be changed depending on the factors that proved to be left behind.

It is known that at the beginning of each competition season, the specialists conceive a new yearly training plan, based on which they conceive the monthly and weekly training plans. These plans shall be strictly followed during the respective year, except for several modifications due to the health status of the athlete or to the weather conditions.

We shall see that at the end of this study, there will be athletes who would have run better according to the development of their force/power indicators, if they had trained better the other factors (technical, psychological, etc.), or, on the contrary, they would have run better if their force indicators had been developed according to the training level of the other factors.

Key words: *Explosive force, power, standing high jump, residual values, linear regression.*

Issue

Stagnation and even regression in the 100-m event, the shortest sprint event, performances should make us ask ourselves a question – why?

Given the complexity of this event, we think that the most important factors upon which the sprint event results depend are physical preparation in all its aspects, psychological preparation, theoretical preparation and tactical preparation.

It is a known fact that performance level in the sprint event is especially influenced by force and implicitly by power as a manifestation thereof.

The question is what is the relationship between power and the other training factors?

Hypothesis

Our research is based on the idea that the level of power development is essential for obtaining high performances in the 100-m event.

Subjects

In order to accomplish this research study, I selected 15 runners who are the most representative in the last 35 years. I've watched most of their training sessions and I obtained their consent and I'm sure that the data they offered me is accurate.

The values were recorded in table 1 and based on these values, we performed the statistical calculation by which we established the predictability of performance in the competition event for each considered indicator.

Methods. The data recorded in table 1 was obtained from the studied subjects by direct interviews, by studying their training booklets, as well as by direct inquiry. In order to interpret the data specified above, we used *multiple linear regression, case study and graphical method.*

We chose the indicators used by all 15 studied athletes, although some of the athletes also used other tests for assessment of lower limb force. We didn't take into consideration these tests because there were no corresponding values to be correlated in all the subjects. Thus, we obtained the residual values based on which we calculated the values corresponding to the performance predictions for each of the athletes.

The 100-m event results, in which the power manifestation has the greatest influence on performance values are recorded in column 4 (table 1).

We did it out of two reasons, namely:

1. In order to see the degree to which power influences the performance achieved in this event.

2. In order to see the predictability of the values corresponding to the indicators which are specific to power development in proportion to the other factors influencing sprint performance which cannot be exactly quantified. The results recorded in the table are obtained in competition by means of an electronic time recording device, or by means of a

manual stopwatch, by adding 0,25 sec. to the performance recorded manually (which in fact can get up to 0,34 sec. if we consider the fact that a result of 10",11 obtained manually is rounded to 10",2 as an official result).

Table 1.

Athletic performance data, force/vertical jump and somatic indicators corresponding to the studied sprinters.

1	2	3	4	5	6	7	8	9	10	11
No.	Last name/Fir st name	Year of birth	Long jump (m)	Semi- squats (Kg)	Squats (Kg)	Standin g long jump (m)	10- stride test (m)	Relative force	Height (cm)	Weight (Kg)
1	C.D.	1967	10.21	310	140	3.56	35	1.77	189	79
2	C.C.	1987	10.28	130	130	3.04	32.5	1.71	186	76
3	D.G.	1950	10.41	130	130	3.05	34	1.83	177	71
4	V.S.	1957	10.46	250	160	3.00	31.5	2.13	182	75
5	P.T.	1950	10.45	240	150	3.20	33	2.00	184	75
6	Ş.C.	1953	10.35	260	160	3.03	34.5	2.22	179	72
7	B.F.	1956	10.35	280	170	3.03	30	2.23	178	76
8	T.H.	1955	10.70	200	120	2.95	29	1.60	184	75
9	S.C.	1971	10.54	160	130	2.93	34.5	1.66	188	78
10	V.C.	1968	10.65	130	125	2.65	27	1.78	180	70
11	L.C.	1977	10.90	120	110	2.80	26.6	1.50	1.92	73
12	S.C.	1946	10.60	125	100	3.00	31	1.44	180	69
13	B.D.	1971	10.65	150	110	2.90	27	1.64	178	67
14	M.A.	1979	10.90	120	100	2.73	36	1.31	186	76
15	G.L.	1981	10.57	240	150	2.99	29.5	2.12	178	70.5

The values of the force/vertical jump events corresponding to men's 100-m event are recorded in columns 5, 6, 7, 8 . An important variable in training assessment is the relative force, which is recorded in column 9 and expresses the force value for each kg of body weight.

The somatic parameters each subject had when he/she achieved his/her best performance are recorded in columns 10 and 11. These values are reflected in the variable values, based on the relative force value.

The data recorded in table 2 was obtained by applying the regression equation with independent variables (i.e. the ones influencing the 100-m results by their force/power component, namely: squats, semi-squats standing long jump, 10-stride test, relative force). The performance prediction

values corresponding to the 100-m event are presented in column 4 (table 2), and the residual values obtained by subtracting the regression equation results from the values of the performance achieved in the 100 m event (column 3) are presented in column 5 (table 2).

After analyzing the data recorded in table no. 2, which was elaborated by applying the multiple linear regression analysis, we can observe that there are athletes who, according to the prediction values, could have obtained a better result in competition, if they had focused more on the other stagnating factors (*energetic process stimulation methodology, technical training, psychological training*) (e.g. T.P. could have run by up to 0,13 sec. faster).

Table 2. Multiple linear regression analysis in the 100-m event

No.	Athletes	100 m			PREDICTORS				
		Achieved performance	Prediction	Residual values	Standing long jump	Squats	Semi-squats	10-stride test	Relative force
1	C.D.	10,21	10,25	-0,04	310	140	3,56	35,00	1,77
2	C.C.	10,28	10,37	-0,09	130	130	3,04	32,50	1,71
3	D.G.	10,41	10,36	0,05	130	130	3,05	34,00	1,83
4	V.S.	10,46	10,42	0,04	250	160	3,00	31,50	2,13
5	P.T.	10,45	10,32	0,13	240	150	3,20	33,00	2,00
6	Ş.C.	10,35	10,42	-0,07	260	160	3,03	34,50	2,22
7	B.F.	10,35	10,38	-0,03	280	170	3,03	30,00	2,23
8	T.H.	10,70	10,69	0,01	200	120	2,95	29,00	1,60
9	S.C.	10,54	10,54	0,00	160	130	2,93	34,50	1,66
10	V.C.	10,65	10,75	-0,10	130	125	2,65	27,00	1,78
11	L.C.	10,90	10,73	0,17	120	110	2,80	26,60	1,50
12	S.V.	10,60	10,66	-0,06	125	100	3,00	31,00	1,44
13	B.D.	10,65	10,73	-0,08	150	110	2,90	27,00	1,64
14	M.A.	10,90	10,86	0,04	120	100	2,73	36,00	1,31
15	G.L.	10,57	10,53	0,04	240	150	2,99	29,50	2,12

On the other hand, the prediction values show that there are athletes who, if they had brought the *power* development at the level of the other factors, could have run faster (e.g. C.C. could have run by up to 0,09 sec. faster). Our study offers many such examples, both regarding power and the other factors.

By calculating the influence of the predictors expressed as percentage, we obtained the values from *table no. 3*, and the *graph no. 1*

was elaborated for the better understanding thereof. Thus, we ascertained that standing long jump has the highest degree of prediction among the independent variables, achieving 58,1%.

It is followed in descending order by the squat test with 15,8%, the semi-squat test with 10,9%, the 10-stride test and the relative force with 0,1% each.

Table no. 3. The weight of the prediction factors for the 100-m event

Predictor influence	%
Standing long jump	58,08%
Squats	15,81%
Semi-squats	10,88%
10-stride test	0,06%
Relative force	0,14%
Other factors	15,02%

The remaining 15% rests with the other methodical aspects of the training (methodical methodical training for energetic process stimulation), and the technical training (low focus on analytical training). We think that the other factors are of a less importance for the sprint events.

Regarding the other factors, we must assert that some of the effects of the exercises comprised by the technical training is transferred and reflected in the force/power indicators. We refer to the number of short

approach takeoffs with 3, 5, 7, 9 strides for take-off and flight development, the full approach takeoffs for the standardization thereof and the number of long jumps without approach for landing development.

Legend:

Long jump / Weight of prediction factors

Standing long jump: 58,1%

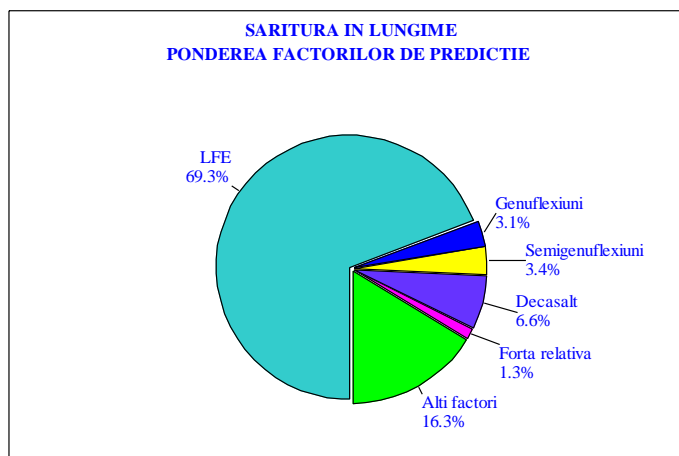
Squats: 15,8%

Semi-squats: 10,9%

10-stride test: 0,1%

Relative force: 0,1%

Other factors: 15,0%



Graph no. 1. The weight of the prediction factors for the 100-m event

Table no. 4. Statistical regression in the subjects studied in the 100-m event

STATISTICAL REGRESSION	Values
Multiple correlation coefficient	0,92
Degree of determination (R^2)	84,98%
Adjusted R^2	76,63%
Standard error	0,10
Number of observations	15

Regarding the determination of the force/power indicators in relation to the performance achieved in the 100-m event, we may assert that:

- There is at least one coefficient different from zero in the regression equation. This means that the regression pattern is valid.
- 76,63% of the performance achieved in the 100-m event is influenced by the prediction factors that were taken into consideration (R^2 adj. = 76,63 %).
- The influence of the prediction factors that were taken into consideration on the performance is statistically

significant, and the value of the calculated significance threshold is ($P = 0.05 \leq 0.002$)

- It is a known fact that not all experimental data can be statistically processed.
- In this case, all numerical data sets from the table of results were checked, and normality was confirmed with a risk factor of 5%, which is accepted in biology, sociology, physical education and other similar fields.

Table no. 5. Influence factors

Influence factors	Coefficient	Standard error	T Stat	P	Seq. SS	Influence %
Free component	13,770	0,59	23,20	0,00	-	-
Standing long jump	-0,840	0,21	-4,01	0,00	0,345	58,08%
Squats	-0,009	0,00	-3,75	0,00	0,094	15,81%
Semi-squats	0,002	0,00	2,42	0,04	0,065	10,88%
10-stride test	-0,001	0,01	-0,14	0,89	0,000	0,06%
Relative force	0,020	0,07	0,29	0,78	0,001	0,14%

ANOVA					
Variation source	df	SS	MS	F	P
Regression	5	0,504	0,1	10,18	0,002
Residual values	9	0,089	0,0		
Total		14	0,593		

Multiple linear regression equation for the long jump event

$$100 \text{ m} = 13.8 - 0.840 \text{ Standing long jump} - 0.00864 \text{ Squats} + 0.00223 \text{ Semi-squats} - 0.00138 \text{ 10-stride test} - 0.0204 \text{ Relative force}$$

Table no. 6. Determination of the relationship between performance and average annual volume

No.	SPEARMAN	100 m	SL	SI
1.	Semi-squats	0,3772	0,2852	0,9786
2.	Squats	0,2036	0,1471	0,5179
3.	Standing long jump	0,0004	0,1869	0,5402
4.	10-stride test	0,0972	0,4986	0,2345

The eventual statistical correlation between two sets of values could be just one (convincing) argument of the logical relationship between cause and effect.

In the 100-m event, the multiple linear regression analysis convincingly argues (by the multiple correlation coefficient = 0.978 in the semi-squat test) that there is a possible quasi-parallel variation between the columns measuring force and performance capacity.

We mean that the higher the force capacity, the higher the possibility of achieving remarkable results. The influence factors show that the explosive strength (assessed by standing long jump) has a relative influence of 58,08%, which is not surprising at all. In other words, whoever jumps far in the standing long jump, leaves faster the block-start and runs faster in the first part of the race.

Conclusions

1. According to the statistical table data processing, there is at least one coefficient different from zero in the regression equation. This means that the regression patterns are valid.

2. It is a known fact that speed is genetically conditioned and consequently, the selection is very important, and that the execution speed can be improved by increasing force (speed is physiologically related to active force by means of the performer quality and the command of the latter), but also that, after a certain force development degree, concomitant increase rate in speed slows down so much that the "force" training becomes unprofitable.

3. In the 100-m event, the standing long jump has the highest prediction percentage of all the independent variables – 58.1%.

4. The other unquantified factors influence the performance by 15%, due to the fact that they cannot be exactly measured (approach to training of the energetic processes

specific to this event, technical training, psychological training, etc.).

5. The facts ascertained by us after we processed the data represent convincing statistical arguments for supporting the reasoning based on which force under speed conditions is both a valid indicator and an efficient means of training that influence the results in the 100-m event.

6. If we take into consideration the level of determination calculated and presented by us in table no. 6, then we can assert that the semi-squats (under speed conditions, without maximal charge) represent an efficient and relevant method (determination = 0.9786) for periodically ascertaining the training level or the progress.

7. Based on prediction, we can choose the most efficient training methods, which influence the value of the performance indicators and implicitly the sport performance in each and

Bibliografie

1. *Balu, M., E., - Bazele statisticii, Ed. Fundației România de Măine, București, 2007, pag. 179.*
2. *Gagea, A., și colaboratorii – Cercetări interdisciplinare în sportul de performanță Ed. Ministerului Internelor și Reformei Administrative 2007.*
3. *Gagea, A., - Metodologia cercetării în educație fizică și sport, Ed. Fundației România de Măine, București 1999, pag. 238.*
4. *Gheorghiu Corin – Teza de doctorat, ANEFS București, 2011, pag. 207.*

Studiu asupra relației putere – performanță la proba de 100 m masculin

Abstract: Dezvoltarea puterii ca formă de manifestare a forței este obiectivul esențial pentru sportul de mare performanță.

Lucrarea face referire la nivelul de predicție al puterii (ca formă de manifestare al forței) în obținerea marilor performanțe sportive, pornind de faptul că indicatorii de forță care pot fi măsurabili exact putând fi obținuți și studiați cu ușurință. Facem precizarea că cercetarea se bazează în mod special

pe analiza valorilor indicatorilor de forță ale membrilor inferioare și a recordurilor personale obținute în competiții oficiale la proba de concurs.

Foarte puțini sunt cei care se documentează pentru a descoperi posibilități mai eficiente pentru îmbunătățirea pregătirii sportive, pentru a se desprinde de rutina vechilor metodologii. Considerăm că subiectul acestei cercetări îi poate stimula pe tinerii specialiști pentru astfel de analize, pentru a ști permanent în ce direcție să orienteze pregătirea sportivilor pe care îi pregătesc, în vederea creșterii performanțelor sportive.

Lucrarea mai încearcă să argumenteze necesitatea trecerii periodice a probelor de control cu regularitate, pentru a cunoaște raportul corect dintre nivelul de dezvoltare a forței și nivelul de antrenare a celorlalți factori ai antrenamentului. Dată fiind complexitatea probei, factorii de care depind rezultatele în competiții la proba de 100 m, dintre care cei mai importanți îi considerăm a fi, pregătirea fizică sub toate aspectele, pregătirea tehnică, pregătirea psihologică, pregătirea teoretică și tactică.

Este cunoscut faptul că valoarea performanțelor în proba de 100 m este influențată în mod deosebit de forță și implicit puterea ca formă de manifestare a acesteia atât la start cât și la alergarea pe parcurs.

Se pune întrebarea cât și în ce raport se găsește aceasta cu ceilalți factori ai pregătirii?

În funcție de **predicția** calculată prin aplicarea **regresiei liniare multiple** asupra indicatorilor de forță-putere, orientarea antrenamentului poate suferi schimbări acordând atenție mai mare acelor factori care se dovedesc rămași în urmă.

Este știut faptul că la începutul fiecărui an competițional se concepe un plan anual de pregătire, din care rezultă planurile de etapă și cele săptămânale. Acestea sunt urmate cu strictețe pe tot parcursul anului cu mici modificări datorate, stării de sănătate a sportivului sau a vremii.

Vom vedea la finalul acestui studiu că sunt sportivi care în funcție de nivelul de dezvoltare a indicatorilor de forță-putere ar fi alergat mai bine dacă ar fi acordat o atenție mai mare pregătirii altor factori (tehnici, psihologici, etc.), sau dimpotrivă ar fi alergat mai bine dacă indicatorii de forță erau dezvoltați la nivelul pregătirii altor factori.

Cuvinte cheie: Forță explozivă, putere, detentă, valori reziduale, regresie liniară.

Étude sur la relation entre puissance - test de performance pour 100 m hommes

Résumé: Le développement de l'énergie comme une forme de travail est le principal objectif pour le sport de haute performance. Le document se réfère à la puissance prédictive (comme une forme de Force) pour obtenir de grandes performances sportives, du fait que les indicateurs peuvent être mesurés avec précision la force qui peut être facilement obtenu et étudié.

Nous tenons à préciser que la recherche est fondée en particulier sur l'analyse des valeurs des paramètres plus faible résistance des membres et des dossiers personnels obtenus dans les compétitions officielles au concours. Très rares sont ceux qui sont documentés à découvrir des moyens plus efficaces pour améliorer la sensibilisation des sports, pour desserrer l'ancienne méthode de routine.

Nous croyons que l'objet de cette recherche peut stimuler de jeunes spécialistes de ces tests pour savoir dans quelle direction orienter de façon permanente la formation des athlètes qui les préparent à augmenter les performances sportives. Le document tente également de faire valoir la nécessité d'échantillons de contrôle régulières quart de travail normalement, à savoir le rapport correct entre le niveau de développement de la force et d'autres facteurs influant sur le niveau de formation.

Étant donné la complexité de l'échantillon, les facteurs dépendra des résultats dans les compétitions dans le 100 mètres, dont nous considérons les plus importants étant, l'entraînement physique dans tous les aspects, la formation technique, préparation psychologique, préparation théorique et tactique. Il est connu que la valeur de la performance au 100 m est particulièrement influencée par la force et la puissance comme une forme de défaut à la fois à la maison et le fonctionnement du processus.

La question est de savoir comment et pourquoi il est comparé avec d'autres facteurs de la formation?

Selon la prévision calculée en appliquant la régression linéaire multiple sur les indicateurs de la force de puissance, une formation d'orientation peut subir des changements de donner une plus grande attention à ces facteurs qui deviennent à la traîne. On sait qu'au début de chaque année pour concevoir un plan de formation annuel concurrentiel, ce qui montre la phase et plans de semaine. Ils sont suivis de près tout au long de l'année avec des changements mineurs à cause de la santé des athlètes ou des conditions météorologiques.

Nous voyons la fin de l'étude qui sont basés sur les athlètes de développer des indicateurs de sortie de puissance serait mieux fonctionner si elle avait accordé plus d'attention à la préparation d'autres facteurs (techniques, psychologiques, etc.), ou à l'inverse serait mieux si les indicateurs de la force exécuter ont été développés dans la préparation d'autres facteurs.

Mots-clés: la force explosive, la puissance, l'expansion, les valeurs résiduelles, la régression linéaire.

THE INFLUENCE OF SOMATIC PARAMETERS ON THE CONTROL PARAMETERS DETERMINED DURING THE MGM TEST

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Abstract: *The paper presents the influence of the somatic parameters (height and weight) of a group of 18 athletes on the control parameters, provided by the MGM test. The method used to estimate that influence is regression that takes into account two possible influence parameters. The paper reveals that, considered together, both somatic parameters have a certain influence on the control parameters, while individually, they have no influence on them, meaning that for this group of athletes there are other factors of influence.*

Keywords: *somatic parameters, MGM test, control parameters*

Introduction

The training process aims to render the maximum efficiency of the athletes performing different tasks during the competition.

Many tests are used to reveal their motrical parameters, but all of them must be analyzed and particularly adapted to their somatic development.

It is very important for a trainer to conduct his program taking into account the physical development of his athletes and render it more and more suitable.

The trainer must estimate the training level of the athletes, the distance from the objective and the athlete's resources for improving the performances. An important issue that must concern the trainers is related to the somatic parameters that are the cumulative result of hereditary, natural, social and environmental factors.

Their activity is focused on the content and characteristics of biometrical potential, in order to investigate the particular somatic, physical, psychological characteristics of athletes', aiming to conduct the training process accordingly.

Previous studies have revealed a different pattern of somatic and motrical development. The paper aims to see if there is a dependency between control parameters and somatic parameters, using MGM test.

Description of Miron Georgescu's test

$$Y = \alpha_0 \cdot X_0 + \alpha_1 \cdot X_1 + \alpha_2 \cdot X_2 + \alpha_3 \cdot X_3 + \dots + \alpha_{p-1} \cdot X_{p-1} + \varepsilon \quad (1)$$

Meaning that the variable Y can be expressed as a linear combination of

In order to get the control parameters, we have tested 18 athletes using the MGM test, which consist of a series of 15 jumps on a special carpet, which is connected to a computer that uploads the data through a data acquisition board and provides the control parameters for each athlete. The control parameters are: CVE - energetical variability coefficient and CVS - structural variability coefficient. Both of them are computed using the time on the air and on the ground measured for each high jump.

CVE is the energetical variability coefficient which provides information about the control state of the energy resources during unspecific motion and CVS is the structural variability coefficient which provides information about the athlete's capacity of controlling the ground contact. It is important to state the fact that all the control parameters are determined while the athletes perform a series of jumps on both legs, on the right leg and on the left leg.

Regression method

The procedure regression provides the estimation of a linear model using the least squares method and the calculus of the statistics associated to this model.

The procedure provides also automatic generation of graphs that are necessary for visual matches.

The estimated linear model is given by equation (1):

independent variables $X_0, X_1, X_2, \dots, X_{p-1}$ plus an error ε .

In order to estimate the parameters of the model, we consider 18 tests on variables in the model, which are structured as a table. The regression procedure provides also calculus for the residuals of the estimated model as well as the normalized residuals.

Experimental results

Performing the MGM test on the selected group of athletes, we get the control parameters. Taking into account the somatic parameters we can now emphasis the influence of each parameter on the performances of our subject, together with their global influence. The input data are revealed in table 1.

Table 1 Somatic and control parameters

Subject	Height	Mass	CVE			CVS		
			Both legs	Right leg	Left leg	Both legs	Right leg	Left leg
1	183	74	65.86	50.01	6.29	9.7	4.24	2.94
2	183	71	2.12	4.14	3.74	9.53	5.4	7.53
3	176	67	3.53	6.39	2.19	9.39	3.1	8.19
4	181	64	5.06	16.19	34.82	6.1	8.94	8.4
5	191	89	66.9	9.02	4.12	42.12	7.49	6.75
6	174	71	3.14	3.69	4.47	49.35	5.83	5.04
7	178	65	2.16	5.98	3.56	5.07	11.54	10.07
8	181	84	4.13	5.48	80.78	6.26	6.71	6.01
9	184	76	1.83	53.06	3.91	47.29	50.12	3.19
10	174	61	8.61	85.52	4.68	8.5	81.11	5.92
11	178	69	5.27	4.2	4.53	9.46	4.15	8.72
12	170	64	3.18	10.36	4.42	8.64	6.79	4.98
13	180	75	4.37	12.76	55.17	10.03	6.03	42.61
14	172	78	6	79.95	4.81	5.48	95.55	7.13
15	175	84	3.47	4.45	77.64	12.96	6.15	2.98
16	180	67	5.26	7.3	7.32	5.88	49.21	7.9
17	180	70	3.23	6.65	6.02	3.71	2.58	10.93
18	179	75	35.21	8.29	8.34	48.57	9.61	7.58

The regression statistics for the dependent variable CVE on both legs are shown

in table 2 and the variance analysis table associated to the regression is shown in table

Table 2 Regression statistics of CVE

Regression Statistics	
Multiple R	0.5939
R Square	0.3527
Adjusted R Square	0.2664
Standard Error	17.9008
Observations	18

Table 3 – Anova test for CVE

ANOVA	df	SS	MS	F	Significance F
Regression	2	2619.2601	1309.6300	4.0870	0.0383
Residual	15	4806.5876	320.4392		
Total	17	7425.8477			

The values provided by the regression analysis reveal that only 35.27% of the variance of CVE on both legs is influenced by the variance of the height and mass.

The estimated values for the coefficient of the model are tested for significance (table

4). The results show that the constant term of the model (the intercept) is -378.7594, while the estimated coefficients are 1.9542 and 0.5802.

The proposed model for that control parameter is:

$$CVE_{both\ legs} = -378.7594 + 1.9542 \cdot Height + 0.5802 \cdot Weight \quad (2)$$

Table 4 – Estimated values of the coefficients for CVE

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-378.7594	160.5143	-2.3597	0.0323	-720.8874	-36.6313
Height	1.9542	0.9866	1.9808	0.0663	-0.1486	4.0570
Weight	0.5802	0.6349	0.9138	0.3753	-0.7731	1.9334

We can see that only the constant is significant while the coefficients must be zero. The limits for the coefficients of the independent variables are presented in the last two columns.

The height line for the predicted CVE and the computed CVE is shown in fig.1 and the normal probability plot in fig.2

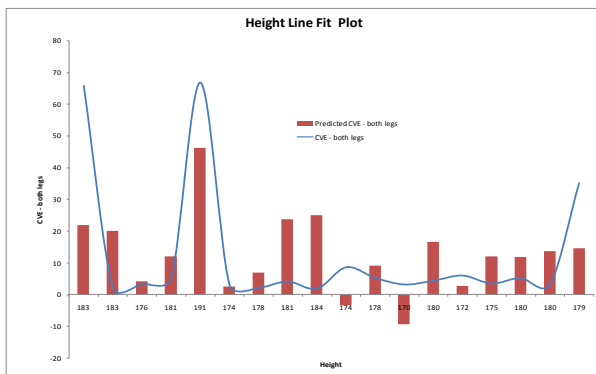


Fig.1

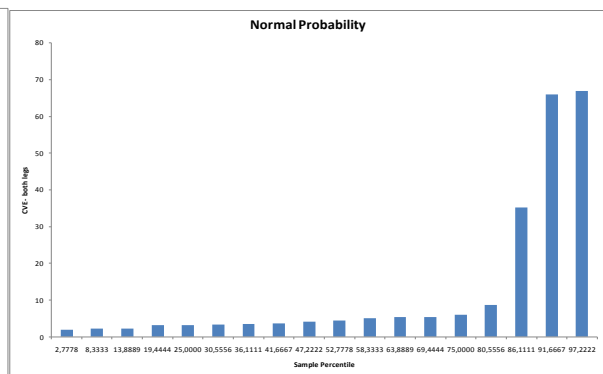


Fig.2

The regression statistics for the dependent variable CVS on both legs are shown

in table 5 and the variance analysis table associated to the regression is shown in table 6.

Table 5 Regression statistics of CVS

Regression Statistics	
Multiple R	0.39251
R Square	0.154064
Adjusted R Square	0.041272
Standard Error	16.50178
Observations	18

Table 6 – Anova test for CVS

ANOVA	df	SS	MS	F	Significance F
Regression	2	743.9028	371.9514	1.365918	0.285123
Residual	15	4084.631	272.3087		
Total	17	4828.534			

The values provided by the regression analysis reveal that only 15.40% of the variance of CVS on both legs is influenced by the variance of the height and mass.

The estimated values for the coefficient of the model are tested for significance (table

7). The results show that the constant term of the model (the intercept) is -123.522, while the estimated coefficients are 0.5197 and 0.6506.

The proposed model for that control parameter is:

$$CVE_{\text{both legs}} = -123.522 + 0.5197 \cdot \text{Height} + 0.6506 \cdot \text{Weight} \quad (3)$$

Table 7 – Estimated values of the coefficients

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-123.522	147.9693	-0.8347	0.4169	-438.911	191.8671
Height	0.5197	0.9094	0.5714	0.5761	-1.4187	2.4581
Weight	0.6506	0.5852	1.1116	0.2837	-0.5968	1.8981

We can see that all the coefficients are tested for zero and as we cannot reject the null hypothesis, because their significance level is greater than 0,05. The limits for the coefficients

of the independent variables are presented in the last two columns.

The height residual for CVE is shown in fig.3 and the normal probability plot in fig.4.

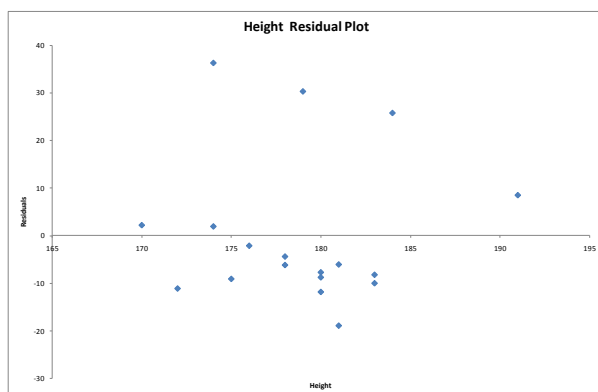


Fig.3

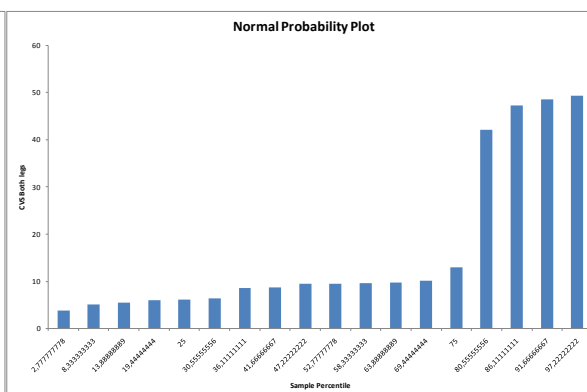


Fig.4

Conclusions

The analysis provided by the regression method on the influence of the somatic parameters upon the control parameters, reveals the fact that, considered together, the two somatic parameters (height and weight) have a certain influence on the control parameters (CVE and CVS), respectively 32.57% on CVE and only 15.4% on CVS, although, considered individually, their influence is not significant.

The analysis was performed on the control parameters computed from the MGM test, for the vertical jumps on both legs. Further analysis will reveal if there is any influence on the control parameters computed while the athletes perform vertical jumps on left and right leg.

References

1. MGM test description;
2. JURCA I., TIRON C., (1996) *Echipament electronic pentru aprecierea puterii maxime anaerobe*. In: *Revista Stiinta sportului*. Bucuresti, nr. 3.

3. American College of Sports Medicine (2005) *ACSM's Guidelines for exercise testing and prescription*. (7th ed.) London: Lippincott, Williams and Watkins.
4. Buckley, J. & Eston, R.G. (2007) In: Winter, E.M., Jones, A.M., Davison, R.R.C., Bromley, P.D. & Mercer, T.H. (eds) *British Association of Sport and Exercise Sciences (2007) Sport and Exercise Physiology Testing: Guidelines. Volume 1: Sport Testing*. The British Association of Sport and Exercise Sciences Guide. London: Routledge.
5. Dick, F.W. (2003) *Sports Training Principles*. (4th ed.) London: A & C Black.
6. Mereuta, C., Mereuta, E., *Study on control parameters provided by MGM test*, THE ANNALS OF "DUNAREA DE JOS" UNIVERSITY OF GALATI, FASCICLE XV ISSN – 1454 – 9832 – 2010, pp. 30-35.
7. Mereuta, C., Mereuta, E., *Study on energetical parameters provided by MGM test*, THE ANNALS OF "DUNAREA DE JOS" UNIVERSITY OF GALATI, FASCICLE XV ISSN – 1454 – 9832 – 2010, pp. 35-37.

L'influence des paramètres somatiques sur les paramètres de contrôle déterminée pendant le test Mgm

Résumé: Cet article présente l'influence des paramètres somatiques (taille et poids) d'un groupe

de 18 athlètes sur les paramètres de contrôle, fournie par le test MGM. La méthode utilisée pour estimer l'influence est de régression qui prend en compte deux paramètres. L'article révèle que, considérés ensemble, les deux paramètres somatiques ont une certaine influence sur les paramètres de contrôle, tandis que, individuellement, ils n'ont aucune influence sur eux, ce qui signifie que pour ce groupe d'athlètes y sont d'autres facteurs d'influence.

Mots-clés: paramètres somatiques, test MGM, paramètres de contrôle.

Influența parametrilor somatici asupra parametrilor de control furnizați de testul MGM
Rezumat: Lucrarea prezintă influența parametrilor somatici (înălțime și greutate) asupra parametrilor de control determinați pe un grup de 18 sportivi, prin testul MGM. Metoda folosită pentru a estima această influență este metoda regresiei, care ia în considerare cei doi parametri posibili de influență. Lucrarea arată că, analizați împreună, parametrii somatici au o anumită influență asupra parametrilor de control, în timp ce, în mod individual, nu au nicio influență asupra lor, în sensul că pentru acest grup de sportivi, există alți factori de influență asupra parametrilor de control.

Cuvinte cheie: parametrii somatici, testul MGM, parametrii de control.

EXPERIMENTAL ARGUMENTATION ON THE APPLICATION OF 9 AND 10-YEAR OLD GYMNASTS ARTISTIC TRAINING MODELS - COMPARATIVE ANALYSIS OF GYMNASTS' MOBILITY DEVELOPMENT LEVEL WITHIN THE PEDAGOGICAL EXPERIMENT

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Abstract: By applying the structure and content of the artistic training model within the teaching experiment, a considerable increase in gymnasts' mobility has been achieved especially in all body joints. Consequently, the test results recorded on mobility testing have higher values on all tests for experimental group, compared with the witness group, the *t* variable indicating values above the significance threshold ($P < 0.05$).

Keywords: mobility, style, amplitude, expressiveness.

Gymnasts need mobility especially in the shoulder, coxofemoral and ankles joints and also on the spine level. In artistic gymnastics we speak of active and passive mobility and also of dynamic or static mobility. For instance, from the standing position, the gymnast performs the leg balance as widely as possible

(mobility in dynamic conditions). Under the same circumstances, the gymnast maintains her leg at the largest possible height (mobility in static conditions).

Comparative analysis of the motor indicators at initial and final testing of the experimental and witness groups

No	Recorded parameters	Initial testing		t	P	Final testing		t	P
		Witness group (n=7)	Experimental group (n=8)			Witness group (n=7)	Experimental group (n=8)		
1	Tiptoe from standing position (mm)	77,62±1,65	77,85±1,64	0,09	>0,05	77,96±1,62	82,89±1,53	2,21	<0,05
2	Bringing the arms back with the gymstick (cm)	41,22±0,88	41,10±0,87	0,09	>0,05	40,13±0,85	37,58±0,81	2,18	<0,05
3	Back bridge from standing position (cm)	29,07±0,69	29,14±0,70	0,07	>0,05	28,24±0,62	26,38±0,59	2,19	<0,05

4	Splits (cm)	Right leg front	16,00±0,59	15,82±0,61	0,21	>0,05	15,27±0,45	13,97±0,40	2,17	<0,05
		Left leg front	16,87±0,63	16,50±0,62	0,42	>0,05	16,71±0,60	14,95±0,53	2,20	<0,05
		Side	25,50±0,96	24,71±0,94	0,59	>0,05	25,19±0,93	22,41±0,88	2,17	<0,05

By applying the structure and content of the artistic training model within the teaching experiment, a considerable increase in gymnasts' mobility has been achieved especially in all body joints.

Tiptoe (mm). If we analyze the evolution of the arithmetic average recorded for this test, it can be noticed that the two groups display almost similar values for the initial testing (77,85 – experimental group and 77,62 – witness group). For the final testing the average test results achieved by the experimental group – 82,89 is higher than the average test results of the witness group – 77,96. Concerning the difference between the two results, we may notice that as a result of the statistical and mathematical calculation the average results experimental group differs significantly from the average results of the witness group ($t = 2,21$; $P < 0,05$).

The ankle joint mobility is required when performing any artistic element, it is visible both in releve positions that occur in the movements, elements and beam and floor artistic combinations, being responsible for that movement amplitude and expressiveness, and in the legs posture (pointed toes), affecting the posture and aesthetics of the movements to all competition apparatuses.

Lowering the arms backwards with the grabbed gymstick (160, p. 136). On the initial testing the experimental group displayed an average value of 41,10 compared with the average value of the witness group of 41,22. The experimental group's final testing shows an average value of 37,58, whereas the witness group's average value is of 40,13. The „t” variable for this event displays a value that is above the threshold of significance. ($t = 2,18$; $P < 0,05$) (fig. 1).

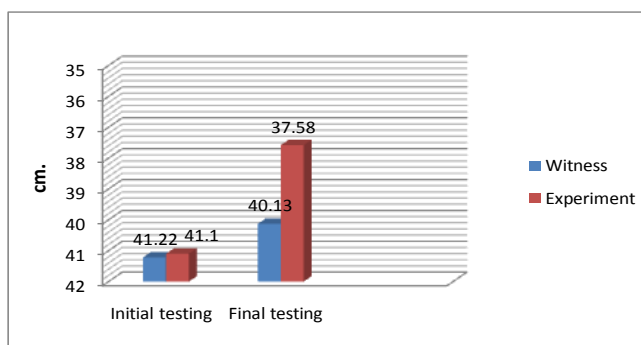


Figure 1. Mobility value on the shoulder joint level at initial and final testing

The shoulder joint mobility influences the proper and expressive posture of the artistic movements as well as the and proper execution of the pre-acrobatic movements (of rhythmic gymnastics) and of slow turn over from back lying (requirements of the FRG classification system for this age category).

Bridge (1, 3, 4). The „t” variable shows for the experimental group a results increase for this testing, between the initial and final testing (6,73), above the thresholds of significance ($p < 0,001$); the witness group displays poorer

results ($t = 2,51$; $P < 0,05$). The „t” variable for the final testing of the two groups show that there have been values above the threshold of significance ($t = 2,19$; $P < 0,05$) (fig. 2).

Better spine mobility is reflected in a proper and expressive performance of all beam and floor artistic movements that are accomplished with high body extension. Moreover it influences the correct technique of the slow turns over from back lying and pre-acrobatic elements.

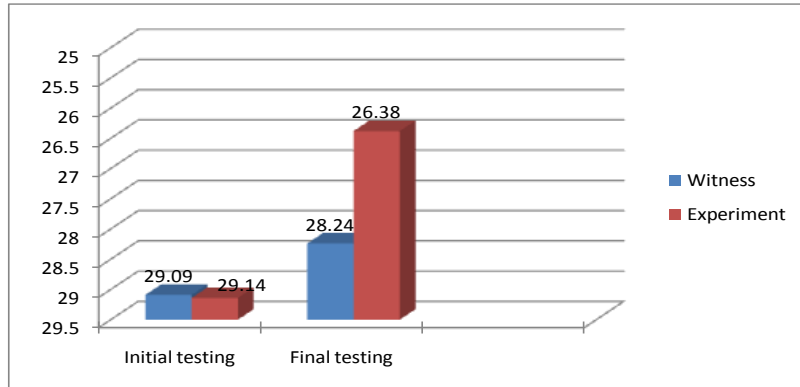


Fig. 2. Mobility value on the spine level at initial and final testing

Splits (2, p. 51). Regarding "the right leg front splits" testing, the average final results of the experimental group gymnasts – 13,97 is lower than the witness group's average final results – 15,27, the difference being of 1,25. Concerning the difference between the average results achieved at the final testing by the two groups, we can say that as a result of the statistical and mathematical analysis the experimental group average differs significantly from the from the average results of the witness group ($t = 2.17, P < 0.05$). For the next test - "left-leg front splits" the average obtained on

final testing by the experimental group gymnasts (14.95) is significantly better than the average obtained by the witness group gymnasts (16.71), thus leading to a significant difference of results ($t = 2.20, P < 0.05$). The medium value of the final test results on "side or middle splits" for the experimental group (22.41) is also better than the witness group (25.19). Thus, the statistical and mathematical calculations of the differences between the final tests show that there is a significant difference between the values recorded by the two groups. ($t = 2.17, P < 0.05$) (Fig. 3).

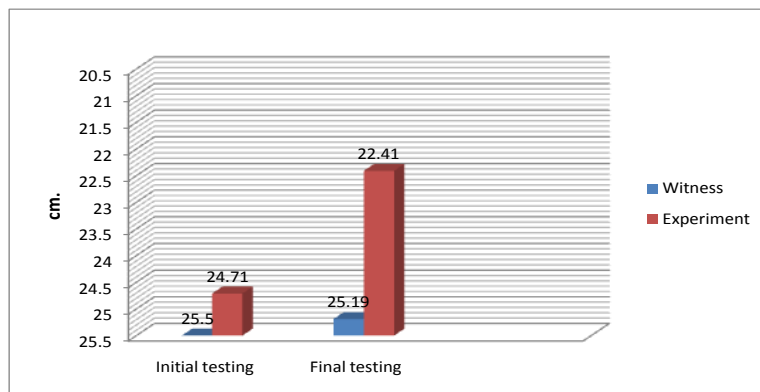


Fig. 3. Mobility value on coxofemoral level at initial and final testing

The split is a floor-required element by the FRG classification system for this age category. The level of passive mobility influences significantly both the execution of splits and the degree of active mobility, i.e. the proper performance of movements and elements which require splitting the legs at the coxofemoral joint. According to the FRG and FIG Score Code of points, considerable score is lost both on beams and on the floor for

insufficient splitting of certain artistic elements (especially artistic jumps). At the same time the accomplishment of some freely-chosen artistic movements (different pictures, maintaining, balancing) with a wide beautiful splitting on the coxofemoral joint, improves the value of the exercise.

Therefore the results achieved at initial and final testing of the experimental group's gymnasts are significantly higher to those

achieved by the witness group's gymnasts on all mobility events.

Bibliography

1. Dungaciu P. Probleme de antrenament în gimnastică. București: Uniunea de cultură fizică și sport, 1967. 105 p.
2. Popescu C., Grimalschi T. Standardizarea și raționalizarea mijloacelor de antrenament în gimnastica ritmică. În: Materialele conferinței științifice a doctoranzilor "Cultura fizică. Probleme științifice ale învățământului". Chișinău: USEFS, 2007, p. 51.
3. Tuduscic I. Gimnastica acrobatică. București: Sport-Turism, 1977, p. 7–31.
4. Ukran M. L. și colab. Gimnastica sportivă. Moscova: Ed. Uniunii de cultură fizică și sport, 1965, p. 111–176; 184–522, p. 136.

Argumentarea experimentală a aplicării modelului de pregătire artistică a gimnastelor de 9 – 10 ani - Analiza comparativă a nivelului dezvoltării mobilității gimnastelor din cadrul experimentului pedagogic

Cuvinte cheie: mobilitate, eleganță, amplitudine, expresivitate

Rezumat: Prin aplicarea structurii și conținutului modelului de pregătire artistică în cadrul experimentului pedagogic, s-a obținut dezvoltarea semnificativă a mobilității gimnastelor, la nivelul

tuturor articulațiilor corpului. Ca urmare, rezultatele înregistrate la testarea mobilității au valori superioare la toate probele pentru grupa experimentală, comparativ cu grupa martor, variabila t indicând valori peste pragul se semnificație ($P < 0,05$).

L'ARGUMENTATION EXPÉRIMENTALE DE L'APPLICATION DU MODÈLE DE PRÉPARATION ARTISTIQUE DES GYMNASTES ÂGÉES DE 9 – 10 ANS – L'analyse comparative du niveau du développement de la mobilité des gymnastes dans l'expérimenté pédagogique

Monts-clé: mobilité, élégance, amplitude, expressivité

Résumé: Par l'application de la structure et du contenu du modèle de la préparation artistique dans l'expérimenté pédagogique on a obtenu le développement significatif de la mobilité des gymnastes au niveau de toutes les articulations. En conséquence, les résultats obtenus dans le test de la préparation motrique ont des valeurs supérieures pour tous les tests dans les preuves des groupes expérimentales, la variable t dépassant le seuil de signification ($p < 0,05$).

THE EFFICIENCY SHARES OF GAME OF PLAYER SETTER, IN THE JUNIOR VOLLEYBALL CHAMPIONSHIP

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Summary: The present work tries to analyze this act of the game, because is one of the most important, and because the job of coordinator (the setter) is the most suppliant of all, both physical and intellectual.

This work will establish which is the efficiency of the raising actions for the level of National Junior Championship, both of the specialized players (the coordinators of the game) and of the other participants to the game.

Keywords: efficiency, actions, games, setter.

Introduction

The present work tries to be, as much as possible, useful for all the specialists that practice in this domain and not only. We hope that the results of our study to create a general image, at list of the game's action we analyze, if not of the whole game, in junior level. We also hope that, based on the conclusions of our study, we will be able to help the technical staff of the specialized national federation, but also those of the clubs, in order for them to better organize their technical and tactical preparation of the teams they lead.

The hypothesis of research

- At the level of the junior national division the raising is performed mostly from the second area.
- Although the raising actions should be orientate towards all the areas of the line 1 and should use the attack from the line 2, the preliminary observations lead us to the conclusion that the area no. 4 will be most often use from finalizing.
- The efficiency of the raising in the junior national division will be – mostly - good and very good.

- In the development of the game we shall meet a few situations in which the raising is performed by other players - beside the specialized players - and in those cases the performed raisings will have a lower quality.

The tasks of the research

In elaborating this paper we established the following tasks:

- ⇒ Specialized bibliographic documentation.
- ⇒ Establishing the investigatory hypotheses.
- ⇒ The choice of the research group.
- ⇒ Registering the game's actions and centralizing the data.
- ⇒ Reckoning the efficiency of the raising actions for each registered match.
- ⇒ Analyzing the efficiency of the raising actions, at the level of the National Junior Championship.
- ⇒ Analyzing the distribution and efficiency of the raisings performed by other players than the ones specialized, at the level of the National Junior Championship.
- ⇒ Analyzing the distribution and efficiency of the special passes.
- ⇒ Drawing charts and synthesizing the data given in the charts in order to facilitate the subsequent analyses.
- ⇒ Elaborating the conclusions and writing the paper.

Processing the data

In order to evaluate the efficiency actions of the game, components of the game's structure, we considered necessary to give some grades corresponding to the immediate effect that these actions had during the game.

The graduation was made using the evaluation scale elaborated by FIVB and presented in "Handbook for FIVB Statistical Match Record (SMR)", thus:

EXCELENT - 3 - total control gained, maintained;

GOOD - 2 - limited control gained, maintained;

LOW - 1-control lost, without control;

WRONG - 0 - point lost.

The formula used for calculating the index of efficiency for the raising was the following:

$$I.E. = \{[3x(A) + 2x(B) + 1x(C) - 1x(D)]\}/3xN,$$

where:

- E = efficiency;
- A = the evaluated number of executions 3;
- B - the evaluated number of executions 2;
- C = the evaluated number of executions 1;
- D = the evaluated number of executions 0;
- N = the total number of executions.

The interpretation of the results and of the conclusions

Unlike the other action of the game, the raising presents the highest values of indexes of efficient as a result of the following aspects:

- the ball is sending in the own court, the fellow member having the interests to catch it;
- the wrong executions can be corrected by marksman;
- the speed of the ball after the take over is relatively lower, so it can be easily intercepted;
- the raising can be performed by any player beside of the basic player.

From the studies performed on the best representative teams from the world, in 2010, studies presented in the official bulletins of F.I.V.B. were detached the following indexes of the efficiency of the raising, both for the whole team and for the specialized players. Thus we obtained the following indexes:

- for the team - 0,74;

- for the player that raises the ball - 0,723;

In the study we performed on the National Junior Boys Championship we obtained the following indexes of efficiency:

- for the team - 0,596;

- for the specialization - **0,603**.

In the following pages we shall present the efficiency of the raising from each area of the playing field, as well as the efficiency of the raising actions for each area relation established by the trajectory of the pass.

In the next table I am presented the number of shares of set up from six zones of court, for each degree of evaluation:

Table 1

	0	1	2	3
Area 1	6	44	29	0
Area 2	68	229	608	209
Area 3	7	58	151	63
Area 4	3	33	64	12
Area 5	5	12	9	1
Area 6	3	18	17	0

It can be observed, as shown in the chart below, that the biggest number of raisings is part of the second degree of evaluation (good).

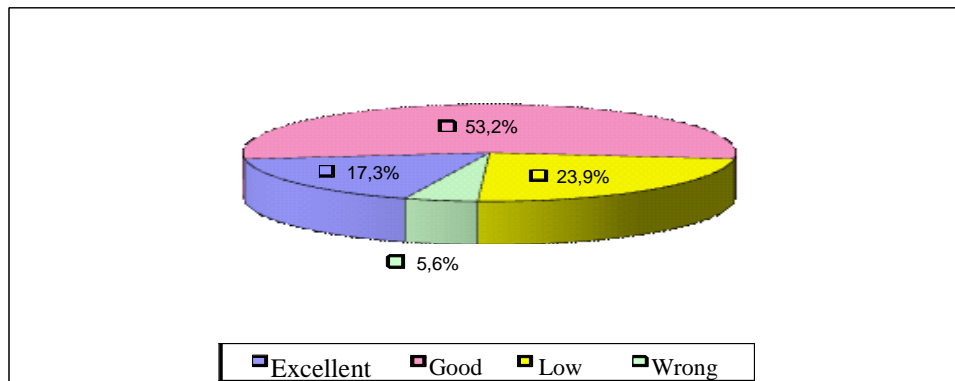


Chart 1

Analyzing table 1 we've calculated the efficiency of the raising actions from the six areas of the playing field resulting chart 2.

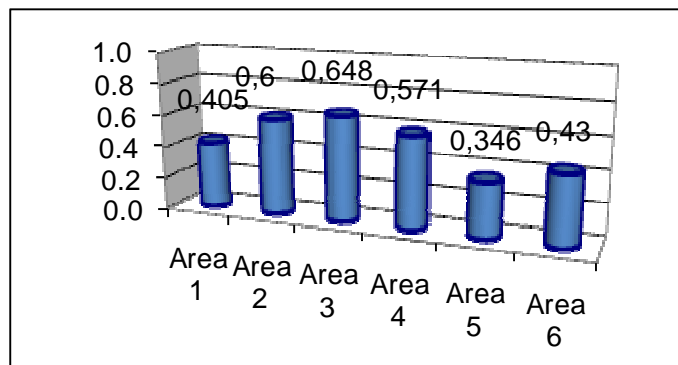


Chart 2

As we see in this chart, the upper efficiency is presented by the lifts performed from area 3, followed closely by those from area 2, these also being the areas towards which the taking over is frequently heading. The area with the lowest efficiency is area 5, an uncomfortable area for this line of action, possibly because those that perform the lift from this area have the tendency to send the step towards area 4, usually considering that

the lifter is to be found in area 2, whom doesn't know the attack stroke technique very well.

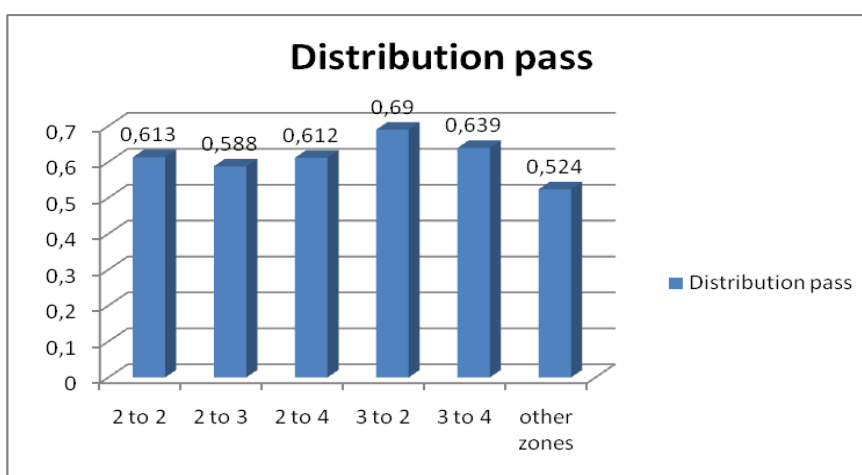
In order to have a better idea about the efficiency of the lift, as a result of the analysis of the registration papers, we've calculated the number of executions for each degree of evaluation and also for each relation established between the areas by the trajectory of the step (wherefrom is executed the step and in what area is intercepted by the marksman).

Table 2

Evaluation of executions	0	1	2	3
Pass distribution				
2 – 1	0	2	0	0
2 – 2	12	53	112	52
2 – 3	34	71	203	81
2 – 4	21	97	295	79
2 – 5	0	5	0	0
2 – 6	0	0	2	0
3 – 2	0	11	43	16
3 – 3	1	12	17	16

3-4	4	35	84	34
3-1	0	0	2	0
3-6	0	3	6	0
4-2	2	7	24	6
4-3	0	16	8	4
4-4	0	6	27	1
4-6	0	5	6	0
1-3	1	11	5	0
1-4	3	31	22	0
1-5	0	1	0	0
1-6	0	1	2	0
5-2	1	10	2	0
5-4	1	3	4	0
6-2	0	3	6	0
6-3	0	2	1	0
6-4	1	8	10	0
6-5	0	5	0	0

I have calculated the efficiency for the most area relation and I have obtained the chart below for a better visualization.



Thus we can see that the most efficient lift is the one from area 3 towards area 2, followed by the one from area 3 towards area 4. The lift from area 2 towards area 4 is less efficient because the ball has a bigger distance to go and the effort it must deposit the setter is bigger also.

CONCLUSIONS

⇒ At the level of Junior Boys National Championship the lifting action is performed mostly from area 2. Thus 69,3% from the actions are performed from this area, 16,8% are performed from the area 3, 6,1% from the area 4, and from the areas 1, 6, 5 are performed 16,8%. In this case the teams that took part into the study are part of the game model at high level performance.

⇒ The index of efficiency of the lift at the level of the Junior Boys National Championship is 0,586. The specialized players have realized an index of 0,603. If at the level of high performance the efficiency of the lift has indexes of almost 0,723, we hope that our junior division players that lift will improve as soon as possible their technical-tactic knowledge and at the same time the efficiency of the lifting actions.

⇒ From the total number of lifts 6,5% are performed by players that are not specialized for this action. The index of efficiency of these executions is lower than - 0,479 - the efficiency of all the lifting actions. This result proves that the unspecialized players don't know very well the technique necessary for realizing the lift.

Bibliography

1. Cojocaru, A. (2008) - *Voleiul la juniori* Editura Universitaria din Craiova
2. Cojocaru, A., Ioniță, M. (2008) - *Volei – aprofundare*, Editura Fundației România de Măine, București.
3. F.I.V.B (1992) - *Manual for Statistical Match Record*. FIVB, Fotocopie FRV.
4. Hanciuk, R. (1990) - *Antrenamentul specializat al jucătorului ridicător*, SDP nr.115, Bucuresti, 1990.

**Eficiența acțiunilor de joc al jucătorului
coordonator,**

în campionatul național de volei al juniorilor

Lucrarea de față cu titlul Eficiența acțiunilor de joc al jucătorului coordonator, în Campionatul Național de volei al juniorilor, încearcă să analizeze această acțiune de joc, pentru că stă la baza construcțiilor de atac și pentru că postul de coordonator (ridicător) este foarte solicitant atât fizic cât și intelectual.

Aceasta lucrare va stabili care este eficiența acțiunilor de ridicare la nivelul Campionatului

Național de Juniori, atât a jucătorilor specializați (coordonatorii de joc), cât și a celorlalți participanți la joc.

Cuvinte cheie : *eficiență, acțiuni, joc, ridicător.*

**Efficacité des actions de jeu de liaison,
dans le championnat de volley-ball junior**

Document intitulé Efficacité de coordonateur de joueur de jeu d'action dans le Championnat Junior de volley-ball, en essayant d'analyser ce jeu d'action qui a conduit à l'attaque et que le poste de coordonateur (up) est très exigeant à la fois physiquement et intellectuellement.

Ce travail permettra de déterminer l'efficacité des actions de lever le championnat national junior, les deux joueurs se spécialisent (coordonateurs du jeu) et les autres participants dans le jeu.

Mots-clés: *l'efficacité, action, jeu, setter.*

**SCIENTIFIC MANAGEMENT OF THE SPORTING TRAINING AT
THE CHILDREN OF (10 TO 11 YEARS OF AGE),
IN MODERN FOOTBALL**

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Summary: *This paper presents the principal directions concerning the scientific leading of the training in football, at the children of (10 to 11 years of age), together with the specific peculiarities for this sporting training.*

Key words: *running speed; standing long jump; skilled foot; clumsy foot.*

Introduction

The period (10 to 11 years of age) is one in which the technique is the most important factor in preparation. Therefore, it must be given careful consideration to create the foundation preparation for the next performer in football. The fact that she is, in general, the principal in relation to physical and tactical training that goes without saying.

Football would not be football without the means through which he plays. In fact, for the accuracy of the report, it must be said that the technique first appeared as a football and after football game developed and regulated. Insistence on claiming the first place you should have technical plans indicate an overlapping arrangement with the game makers. (Giacomini, M., 2009). Of course, for physical, tactical or psychological training is to achieve a higher

technical efficiency. This point of view is another reason to consider engineering as a major game.

As the main character plays the technique is also explained by the fact that it is most often based on physical and tactical training. Although such physical training is often done separately, tends to be driven by technical means, the intention to provide training, game. And the same tactic to involve practically all intentions by technical means. Thus, the correlation and interdependence of factors that clearly required, the technique is the common denominator. Without this would lead to an approach to separate and priority. The fact that in periods of the game emphasizes learning teaching technique not only means that she is training. In some stages of preparation as a result of methodical plan of special interests,

physical training or tactics may temporarily become prime factors (Rădulescu, M., 2009).

So, while theoretical the technique first factor of the game is constantly in pursuit of their workouts without first in a primary care, physical training and tactics. That allows and encourages continued recovery and development of a factor by others, ensuring the overall development of the game. It think it is understandable how the role of art into the game makers. Actually, that would be correlation with other factors specific to the technique of the game ? What is the interdependence of technical content and physical content of the game, his tactical and psychological ? First, in terms of correlation with physical training technique, it is noted that all physical abilities, namely the speed, strength, endurance and skill, act as technical and structural components of the act, giving him a specific qualitative value.

There is certainly an optimal level of interference between motor skills and technical skills. Thus, speed and strength of positive interference, unlimited hits against the technical elements, which requires the development of training to make them continuously without risk of affecting the technical qualities. Instead, the force necessary to a certain limit of effective technological expression, it becomes a negative interference by overdosing with technical, reducing the variety of appearance and quality of execution. But the correlation between the current football revealed the technical and physical training is given by the increasing physical load that game is, therefore exacerbated competitiveness that require technical skills and capabilities to achieve a speed – strength – power, increased.

Thus, the technical skill of the player today necessarily implies two essential physical conditions, namely, that they run fast and fight with your opponent.

Technical skill dubbed the physical causes of complex technical and physical abilities in the game requires tactical terms, which require further analysis of how that correlates with the tactical technical capabilities.

Herefore, preparation footballing (10 to 11 years of age) will focus on technical issues in general, but are not neglecting other factors of training.

Aim

The purpose of this research it's represented by setting the most important aspects of selection and training in all aspects of sports training for children of (10 to 11 years of age), stage in which the technique is extremely important in the evolution of future football performer.

The hypothesis

- We suppose that the peculiarities specific training in (10 to 11 years of age) will lead to direct scientific sports training;
- Also, we suppose that the knowing the level of preparation by studying the results of control samples will lead to an appropriate dose of the effort for the children (10 to 11 years of age);
- We suppose that the compliance with the criteria of biological, psychological and sports specific field will also positively influence the children.

Research methods

In order to achieve the work we used mainly the following methods of research: scientific documentation, statistical method, observation, experimental methods. The results obtained will be milestones in preparing players football at this level.

The contain and development of the experiment

The subjects of this research were represented by the experimental teams which both have 20 children from L.P.S. Galați, born in 1999 and 2000, coach: Niculcea Ionuț. The tests used in this research were:

- Running speed on 10, 20, 30 meters: Start standing, bend at the beep. It is run by 2, the synthetic field, two repetitions and record the best;
- Standing long jump;
- Keeping the ball in the air with skillful and clumsy foot, maximum. The ball is up in the air about 30-40 cm (Drăgan, A., 2009).

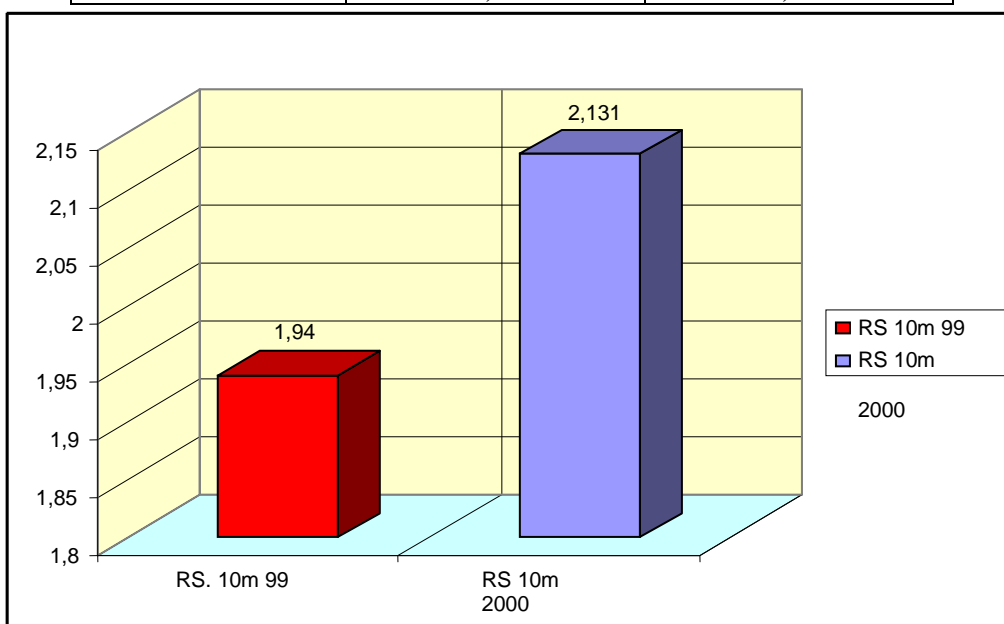
*Table no. 1.
Running speed 10 m*

No.	Name	Running speed 10 m (s)		Name
		g. 1999	g. 2000	
1.	S.M.	1,79	2,17	B.C
2.	A.C.	1,80	2,12	L.A.
3.	R.D.	1,96	2,28	R.D.
4.	D.A.	2,00	2,04	N.O.
5.	S.G.	1,85	2,20	V.A.

6.	P.A.	2,09	2,01	S.M.
7.	T.S.	1,86	2,12	B.G.
8.	M.R.	2,14	2,17	D.C.
9.	J.A.	2,02	2,00	A.S.
10.	E.T.	1,87	2,23	B.D.
11.	U.L.	1,69	2,05	P.A.
12.	A.F.	1,90	2,04	U.D.
13.	B.D.	2,10	1,96	D.C.
14.	C.O.	2,17	2,30	V.L.
15.	B.H.	1,99	2,20	P.R.
16.	F.M.	1,79	2,33	I.S.
17.	I.A.	1,71	2,04	F.E.
18.	Z.A.	2,14	1,97	I.C.
19.	B.M.	1,86	2,16	B.O.
20.	D.C.	2,07	2,23	Z.P.
Arithmetical average		1,94	2,131	
Minimum		1,69	1,96	
Maximum		2,17	2,33	

Table no. 2
The average levels at running speed on 10 m

The average levels	Running speed 10 m (1999)	Running speed 10 m (2000)
Results	1,94	2,131



Type 1. Running speed on 10 m – the average levels

The difference between the two groups is 0,191 seconds (2,131 s - gr. 1999 compared

to 2,131 s - gr. 2000), according to the tables 1, 2 and type 1.

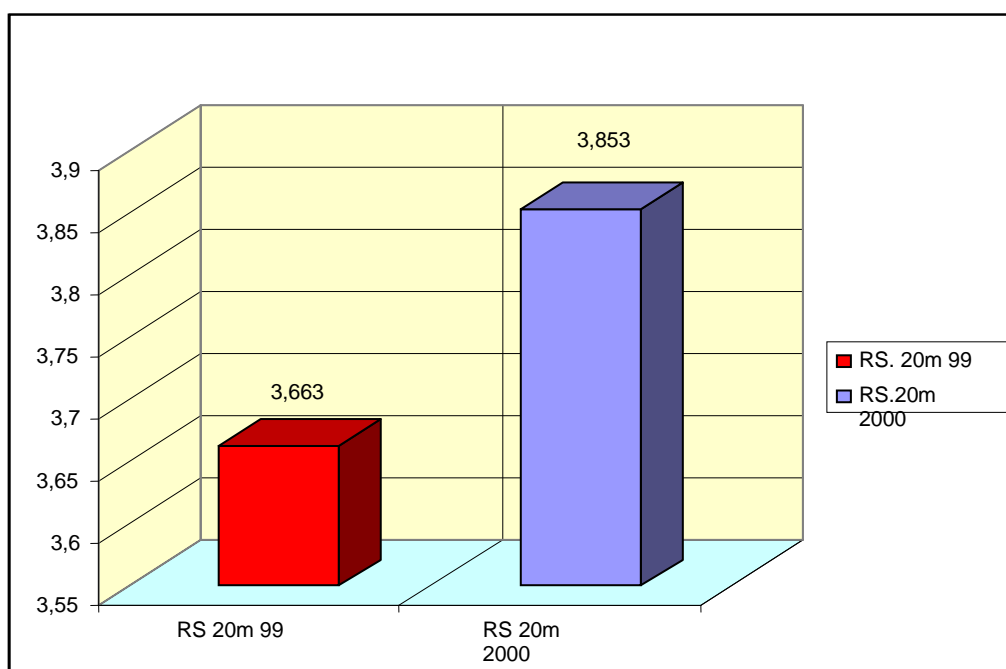
Table no. 3.
Running speed 20 m

No.	Name	Running speed 20m (s)		Name
		g. 1999	g. 2000	
1.	S.M.	3,67	4,00	B.C
2.	A.C.	3,66	4,21	L.A.
3.	R.D.	3,58	3,96	R.D.

4.	D.A.	3,46	3,87	N.O.
5.	S.G.	3,66	3,67	V.A.
6.	P.A.	3,55	3,78	S.M.
7.	T.S.	3,54	3,86	B.G.
8.	M.R.	3,87	3,79	D.C.
9.	J.A.	3,46	3,68	A.S.
10.	E.T.	3,77	3,76	B.D.
11.	U.L.	3,81	3,92	P.A.
12.	A.F.	3,90	4,08	U.D.
13.	B.D.	3,52	3,77	D.C.
14.	C.O.	3,63	3,69	V.L.
15.	B.H.	3,58	3,70	P.R.
16.	F.M.	3,73	3,79	I.S.
17.	I.A.	3,63	3,68	F.E.
18.	Z.A.	3,80	3,92	I.C.
19.	B.M.	3,75	3,94	B.O.
20.	D.C.	3,69	4,00	Z.P.
Arithmetical average		3,663	3,853	
Minimum		3,46	3,67	
Maximum		3,9	4,21	

Table no. 4- The average levels at running speed on 20 m

The average levels	Running speed 20 m (1999)	Running speed 20 m (2000)
Results	3,663	3,853



Type 2. Running speed on 20 m – the average levels

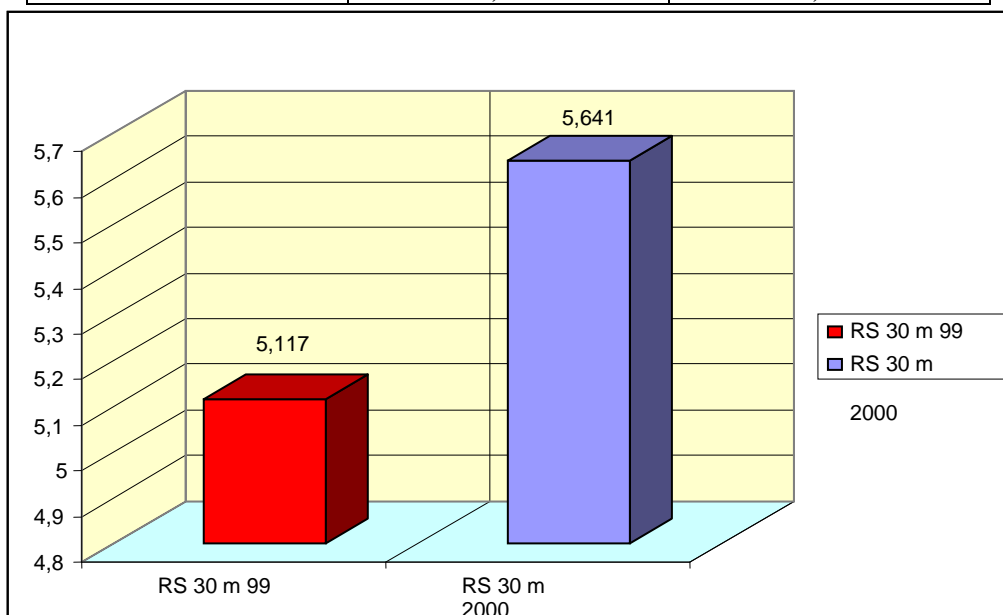
The difference between the two groups is 0,210 seconds (3,663 s - gr. 1999, compared to 3,853 s. - gr. 2000), according to the tables 3, 4 and type 2.

Table no. 5 - Running speed 30 m

No.	Name	Running speed 30m (s)		Name
		g. 1999	g. 2000	
1.	S.M.	5,13	5,58	B.C
2.	A.C.	5,34	5,44	L.A.
3.	R.D.	5,27	5,62	R.D.
4.	D.A.	5,03	5,37	N.O.
5.	S.G.	5,11	5,70	V.A.
6.	P.A.	5,40	5,48	S.M.
7.	T.S.	5,17	5,74	B.G.
8.	M.R.	4,97	5,90	D.C.
9.	J.A.	5,22	5,82	A.S.
10.	E.T.	5,06	5,91	B.D.
11.	U.L.	4,89	5,79	P.A.
12.	A.F.	5,20	5,80	U.D.
13.	B.D.	5,10	5,67	D.C.
14.	C.O.	5,02	5,49	V.L.
15.	B.H.	5,00	5,66	P.R.
16.	F.M.	5,16	5,59	I.S.
17.	I.A.	4,89	5,62	F.E.
18.	Z.A.	5,23	5,39	I.C.
19.	B.M.	5,02	5,80	B.O.
20.	D.C.	5,14	5,45	Z.P.
Arithmetical average		5,117	5,641	
Minimum		4,89	5,37	
Maximum		5,4	5,91	

Table no. 6 - The average levels at running speed on 30 m

The average levels	Running speed 30 m (1999)	Running speed 30 m (2000)
Results	5,117	5,641



Type 3. Running speed on 30 m – the average levels

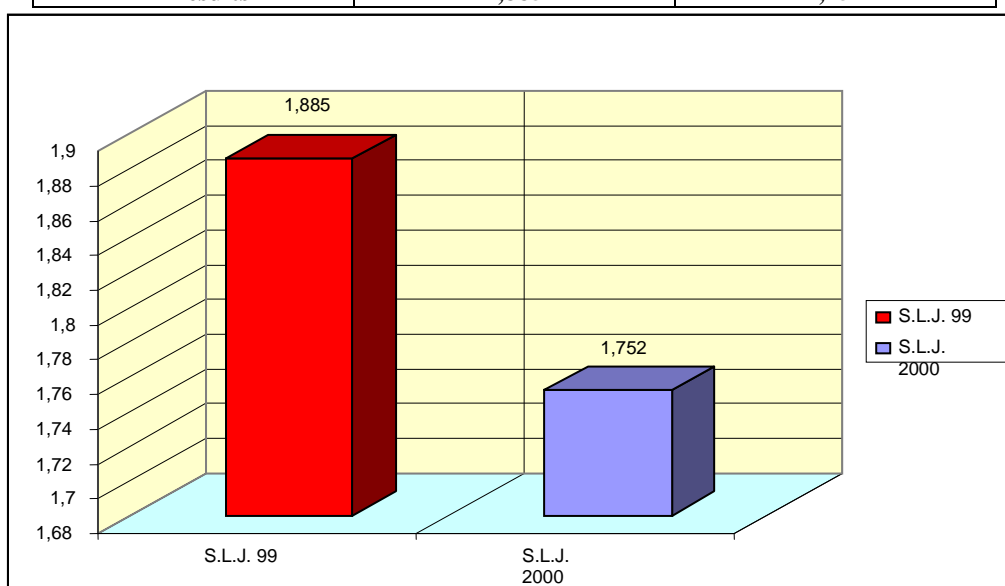
The difference between the two groups (to 5,641 s. - gr. 2000) according to the tables 5, is 0,524 seconds (5,117 s - gr. 1999, compared 6 and type 3.

Table no. 7- Standing long jump

No.	Name	Standing long jump (m)		Name
		g. 1999	g. 2000	
1.	S.M.	1,85	1,65	B.C
2.	A.C.	1,90	1,75	L.A.
3.	R.D.	1,95	1,80	R.D.
4.	D.A.	1,80	1,75	N.O.
5.	S.G.	1,95	1,65	V.A.
6.	P.A.	2,00	1,60	S.M.
7.	T.S.	1,85	1,80	B.G.
8.	M.R.	1,90	1,85	D.C.
9.	J.A.	1,95	1,70	A.S.
10.	E.T.	1,90	1,70	B.D.
11.	U.L.	1,90	1,70	P.A.
12.	A.F.	1,95	1,85	U.D.
13.	B.D.	1,85	1,80	D.C.
14.	C.O.	1,90	1,85	V.L.
15.	B.H.	2,00	1,75	P.R.
16.	F.M.	1,75	1,85	I.S.
17.	I.A.	1,90	1,60	F.E.
18.	Z.A.	1,75	1,75	I.C.
19.	B.M.	1,80	1,80	B.O.
20.	D.C.	1,85	1,85	Z.P.
Arithmetical average		1,885	1,752	
Minimum		1,75	1,6	
Maximum		2	1,85	

Table no. 8- The average levels at standing long jump

The average levels	Standing long jump (1999)	Standing long jump (2000)
Results	1,885	1,752



Type 4. Standing long jump – the average levels

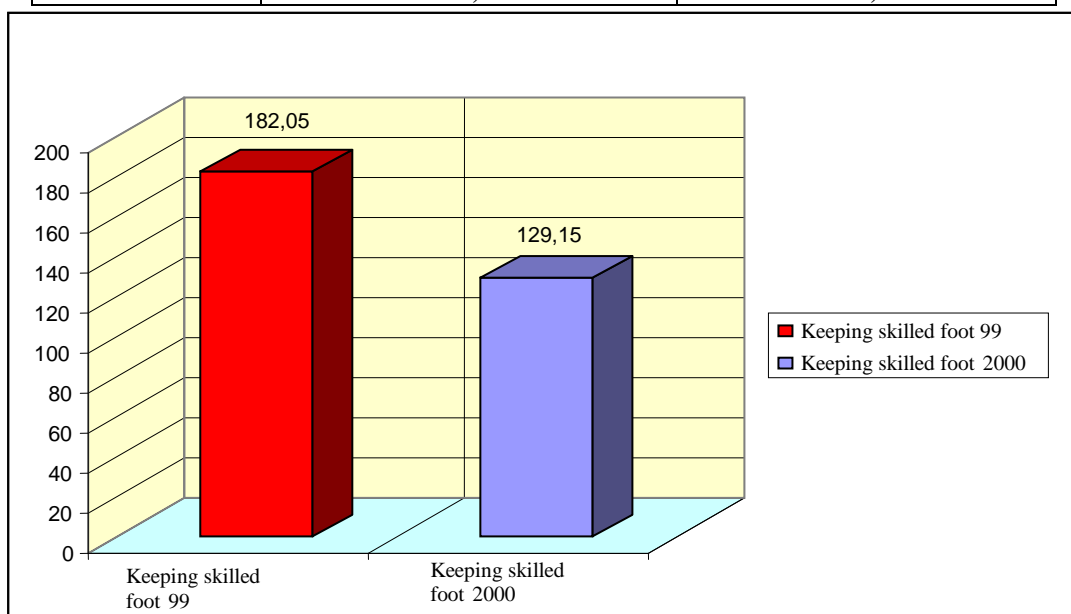
At this trial, the difference between the two groups is 13,3 cm (1,885 m - gr. 1999, face to 1,405 m - gr. 2000), according to the tables 7, 8 and type 4.

Table no. 9 - Keeping the ball in the air with the skilled foot

No.	Name	Keeping the ball in the air with the skilled foot (max. no. of repetitions)		Name
		g. 1999	g. 2000	
1.	S.M.	200	75	B.C
2.	A.C.	176	87	L.A.
3.	R.D.	186	90	R.D.
4.	D.A.	206	120	N.O.
5.	S.G.	176	163	V.A.
6.	P.A.	190	170	S.M.
7.	T.S.	175	142	B.G.
8.	M.R.	190	110	D.C.
9.	J.A.	95	154	A.S.
10.	E.T.	190	176	B.D.
11.	U.L.	200	165	P.A.
12.	A.F.	170	86	U.D.
13.	B.D.	190	76	D.C.
14.	C.O.	176	68	V.L.
15.	B.H.	165	75	P.R.
16.	F.M.	174	106	I.S.
17.	I.A.	167	167	F.E.
18.	Z.A.	190	189	I.C.
19.	B.M.	230	189	B.O.
20.	D.C.	195	175	Z.P.
Arithmetical average		182,05	129,15	
Minimum		95	68	
Maximum		230	189	

Table no. 10 - The average levels at keeping the ball in the air with the skilled foot

The average levels	Keeping the ball in the air with the skilled foot (1999)	Keeping the ball in the air with the skilled foot (2000)
Results	182,05	129,15



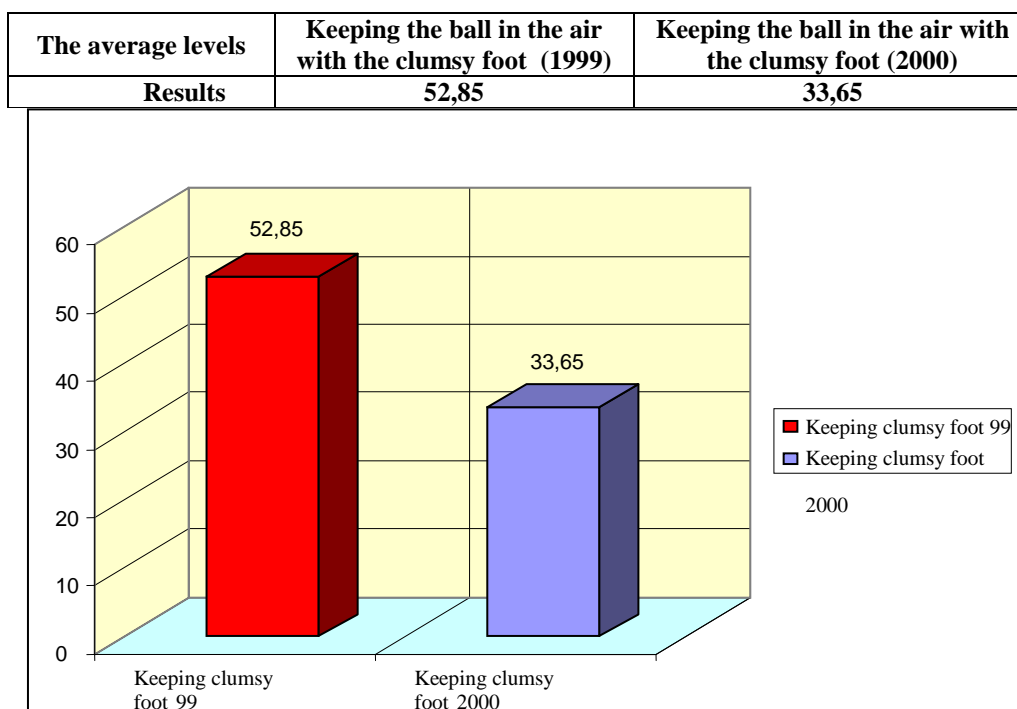
Type 5. Keeping the ball in the air with the skilled foot – the average levels

The difference between the two groups (129,15 - gr. 2000), according to the tables 9, 10 is 52,90 repetitions (182,05 - gr. 1999, face to and type 5.

Table no. 11 - Keeping the ball in the air with the clumsy foot

No.	Name	Keeping the ball in the air with the clumsy foot (max. no. of repetitions)		Name
		g. 1999	g. 2000	
1.	S.M.	38	27	B.C
2.	A.C.	44	30	L.A.
3.	R.D.	50	29	R.D.
4.	D.A.	43	40	N.O.
5.	S.G.	27	59	V.A.
6.	P.A.	45	27	S.M.
7.	T.S.	55	33	B.G.
8.	M.R.	50	35	D.C.
9.	J.A.	64	41	A.S.
10.	E.T.	70	17	B.D.
11.	U.L.	66	28	P.A.
12.	A.F.	42	35	U.D.
13.	B.D.	50	43	D.C.
14.	C.O.	65	12	V.L.
15.	B.H.	73	19	P.R.
16.	F.M.	54	62	I.S.
17.	I.A.	89	45	F.E.
18.	Z.A.	35	35	I.C.
19.	B.M.	47	30	B.O.
20.	D.C.	50	26	Z.P.
Arithmetical average		52,85	33,65	
Minimum		27	12	
Maximum		89	62	

Table no. 12 - The average levels at keeping the ball in the air with the clumsy foot



Type 6. Keeping the ball in the air with the clumsy foot – the average levels

Also, for this test, the difference between the two groups is 19,20 repetitions (52,85 - gr. 1999, compared to 33,65 - gr. 2000), according to the tables 11, 12 and type 6.

Conclusions

We observe that, at all the tests there is a significant difference between the two teams.

At this age, we distinguish the following aspects:

- Keeping the ball in the team by retaining less of it by each player individually and through a strong collective spirit to achieve completion;
- The entire team participates actively in the development phase, acting as a unit through a smooth connection of the game in attack and defense with the game and vice versa;
- A sustained recovery tempo ball game and orientation course organized trips from their half of the field. The game is held in speed, coupled with perseverance and steadfastness necessary impose their own game;
- With a technique useful in time and space with a capacity in which the joint effort of the game mainly to be constructive, collective, balanced and flexible;
- Activation all areas of ground in attack and defense - the edge - deep - by making sustained efforts routes imposed by organizing the game, including taking over and occupying temporary tasks;
- Print belief that performance leads and obtain practice in competition with a game total, aggressive (within regulation), an active vigorous and ongoing.

For the attack phase, we recommend:

- the use of free zones and corridors to reach near the side gate;
- creating numerical superiority by providing at least two opportunities for bird player with the ball, including the final pass for the shot at the gate;
- synchronizing the movement of players in groups and couples, with the temporary change of functions, avoiding congestion in an effort to continually threatening side portions;
- orientation of action towards the sidelines and then return to complete their central area;
- own combination set pieces (kick-off, throwing the ball at the edge, corner kick, direct and indirect free kicks).

For the defense phase is recommended:

- use for pressing the opponent can not change the direction of attack;

- quick and simultaneous placement of the defense and prosecution of enemy attack to recover the ball;
- organization on the track ball mark and dubbing aggressive, responsive and concerned with recovery.
- rapid and accurate orientation in situations of attack and defense;
- fairness and accuracy in the execution of the technical and tactical actions, specific position, speed and coordination in the system;
- achieve the tasks in the game posts, and areas of activity of the organization and conduct of individual and collective actions to defend and attack the system.

References

1. Drăgan A. - „Football for young players”, Valinex Publishing House, Chişinău, 2006.
2. Drăgan A. - „Football – conceptions, methods and means”, Mongabit Publishing House, Galaţi, 2006.
3. Drăgan A. - „Interdisciplinary Approaches in Football”, Ed. Academica, Galaţi, 2007.
4. Drăgan A. - „Optimisation of the lesson training in football as a discipline”, Galati University Press, Galaţi, 2009.
5. Massimo Giacomini - „The technical guide for the schools of football”, Italy 2009.
6. Rădulescu M., Cojocaru V., Drăgan A. - „The guide of football coach at children and youngsters”, Axis-Mundi Publishing House, Bucharest, 2003.
7. Rădulescu M. – Damian M. - „Football – pro – Guide of the professional coach” – Didactic and Pedagogical Publishing House, Galaţi, 2009.

Dirijarea științifică a antrenamentului sportiv la copiii de (10 – 11 ani), în fotbalul modern

Rezumat: Această lucrare prezintă principalele direcții privind conducerea științifică a antrenamentului în fotbal, la copiii de (10 - 11 ani), împreună cu particularitățile specifice pentru acest antrenament sportiv.

Cuvinte cheie: alergare de viteză; săritură în lungime de pe loc; picior îndemânatic; picior neîndemânatic.

Le management scientifique d'entraînement sportive pour les enfants de (10 – 11 années), în fotbalul modern

Résumé: Cette ouvrage présente les directions principaux concernant le management scientifique d'entraînement dans le football, pour les enfants de (10 – 11 années), ensemble avec les particularités spécifiques pour cette entraînement sportive.

Mots clefs: course de vitesse; saut en longueur; pied habile; pied malhabile.

ALPINE SKIING SELECTION ACHIEVED IN COMPLIANCE WITH ANATOMIC-FUNCTIONAL CRITERIA

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Resume: *The harmonious physical development is given by the harmony between perimeters and diameters, respectively the segmental proportionality.*

The perimeters are the circumferences of the segment and the diameters are the linear distances which represent the length of a segmental part.

While the organism grows and develops, we can interfere through a well organized selection in order to discover those sportsmen who respond to the conditions and criteria of the future alpine skiing practitioners from an anatomic-functional point of view. The selected sportsmen are not allowed to have body flaws which can become more severe because of this sport. The attitude of the individual is accomplished through the cooperation of the mio-osteo-articular systems and the nervous one, being highly influenced by the physical state.

Key words: *physical development, perimeters, diameters.*

Content

Physical development, up to preschool age, gives us some guidance referring to the corporal aspect of the future skier. These are minimum starting data in a continuous and sustained process of specific training in the preparation of performance alpine skiing.

While the organism grows and develops, we can interfere through a well organized selection in order to discover those sportsmen who respond to the conditions and criteria of the future alpine skiing practitioners from an anatomic-functional point of view. For harmonious physical development, very important is the harmony between perimeters and diameters, respectively the segmental proportionality.

The perimeters are the circumferences of the segment, respectively: neck, thorax, abdomen, upper limb (arm, forearm), lower limbs (thigh, calf). They can be measured with a metric ribbon in a relaxed or contraction phase, giving minimum, maximum and differential figures.

Among these perimeters, some of them are very important for alpine skiing at the level of performance.

Thoracic perimeter gives us objective assessment values for the practical part of the selection problem. Registration of thoracic perimeter in rest, in maximum inspiration and deep expiration, that is *thoracic elasticity*, provides us the best relations on the inspiring power of the individual.

A linear diameters are distance is the length of segmentation part, for example, the

diameter biacromial that characterize development scapular girdle (shoulder width) chest diameters: antero-posterior (appendix xiphoid of the sternum and the fourth dorsal vertebra), transverse diameter take the same line, but subaxilar; bitrohanterian diameter, which represents the transverse diameter of the pool. Anatomical diameters measured with the compass. Biacromial chest diameter and diameter.

Biacromial chest diameter and diameter provides adequate data for assessing the development of the entire rear expresses also informs us bitrohanterian diameter or narrowing the width of the basin, these parameters are changing under the influence of alpine skiing.

Vital capacity is very important, it represents the maximum amount of air that can enter the lungs through inspiration followed by forced expiration spirometer and is measured in ml. In adults it reaches an average of 3200-3500 ml. women and 3500-4500 ml. in men. After a methodical practice of physical exercises, vital capacity increased to reach performance athletes averaged 4500-5000ml. women and 5000-6000 ml. in men.

Vital capacity varies depending on age, height, weight and chest area. Index dynamometer, in addition to being capable of recording the force segment (wrist flexors, scapular belt in thrust and traction), can provide information about the status tonicity cortex, at rest or in effort. This enables us to adapt the organism to the effort to establish if the training had a positive or negative, as the manifestation of certain psychological states (apathy,

excitement, fever of competition, etc.). The selection will have to be careful not to present the attitude of the body to serious deviations from normal, which could be increased from alpine skiing. Body attitude refers to the usual position, unforced, standing personal to each individual. Individual's attitude is achieved through collaboration systems myo-osteo-articular and nervous, being greatly influenced and physical condition. In case of failure kept, pathological, concerned for the selection of professional sports is contraindicated, and he will be guided to practice medical gymnastics exercises. Muscle tissue has an interest to us almost as large as height, weight or age. It will take account not only the muscle mass (volume, terrain, shape) that determines the strength of an individual, but rather the strength of contraction of the muscle fiber.

After muscle features that were originally formed under the influence of environmental factors, can guide children to skiing performance, muscle development is dependent on the specific physical activity and then submitted. The alpine skiing ensure a harmonious development of all muscle because muscles require.

The amount of body fat allows us to appreciate the nutritional status of those who will be selected. For this we consider celulo-adipose tissue, and appreciated by palpation or measurement of the thickness of the abdomen plicii (thickness can be between thumb and forefinger). Plicii thickness should not exceed 1 to 1.5 cm below this figure celulo-adipose tissue is low and rib contours appear pronounced, if adipose tissue exceeds 1.5 cm, the tissue will be increased considerably, and relief

Commercial applications

State of the organism seeks the establishment of the development level of enforcement functions, the basic and specific motor qualities and ability to adapt to the effort required. Consideration of initial functional body is of a passive (static) and one active (dynamic) when the practice is under the influence of exercise, controlling periodically.

Consideration of initial functional body is of a passive (static) and one active (dynamic) when the practice is under the influence of exercise, controlling periodically. Determination of functional status is achieved through:

- the quality control of basic motor;
- motor control functional exploration.

Quality control refers to the basic motor speed, skill, strength and endurance, plus the combined (mobility, expansion, flexibility, etc.) Their control can be field or laboratory. Driving quality control laboratory has the advantage of the ease with which identity can register and climate, thus the reaction speed can be an exciting way to use visual (light) or auditory (sound).

To determine the force dynamometer using wrist flexors, scapular and lumbar belt. To use ergogram resistance and for skill assessment is made by analyzing the movement or workmanship conclusions arising from the registration graphic curves.

Control of functional exploration deals with the level of functioning of the body (cardiovascular, respiratory, neuromuscular system, etc.). To explore the cardiovascular system using specific efforts alpine skiing followed by different indices recorded (pulse, blood pressure and time to return to normal). You can also use standard efforts (electrocardiogram, oximetry, hemodynamic examination, etc.).

In our respiratory care respiratory rate, pulmonary ventilation, respiratory, respiratory type, and the neuromuscular system to obtain data we are interested in using cronoximetric methods, electromyography, etc. After all these examinations are analyzing the data entered in the Athletes individual medical records, to establish general conclusions on the health, physical and functional status.

The higher the value, the examinations are more complex and demanding.

Conclusions

- Knowledge of anatomic-functional indicators arises at the level of necessity when we want to make a selection.
- Thoracic diameters and perimeters are very useful items for the teacher who will make a selection of future practitioners of alpine skiing.
- Analysis of data obtained from examinations allows determination of the conclusions on the health of the examined individual.
- Functional status of the individual's organism is achieved by controlling the basic motric qualities and the functional exploration.

References

1. BOCU, T., (1997) – *Selection in sport*, Cluj, Dacia Publishing House;
2. BOTA, C., (2000) – *Ergophysiology*, Bucharest, Globus Publishing House;

3. DEMETER, A., (1981) - *Physiological and biochemical bases of motric qualities*, Bucharest, Sport-Tourism Publishing House;
4. DRAGNEA, A.; MATE-TEODORESCU, S., (2002) – *Sport Theory*, Bucharest, Fest Publishing House;
5. DRĂGAN, I., (1989) – *The practice of sport medicine*, Bucharest, Medical Publishing House;
6. MANNO, R., (1996) – *Les bases de l'entraînement sportif*, Bucarest;
7. RĂDUȚ, C., (1967) – *Selection Criteria*, Bucharest, C.N.E.F.S. Publishing House.

**La sélection dans le ski alpin effectuée
conformément aux critères anatomiques
fonctionnels imposés**

Mots-clés: développement physique, périmètres, diamètres.

Résumé: Le développement physique harmonieux est donnée par l'harmonie entre les périmètres et les diamètres, respectivement la proportionnalité segmentaire. Les périmètres sectoriels sont les circonférences du segmente respectif et les diamètres sont des distances linéaires qui représentent la longueur de la partie de segmentation. Comme la croissance du corps et le développement se produit grâce à une sélection bien organisée pour trouver les athlètes qui remplissent les conditions et les critères qui sont indispensables pour des futurs skieurs du point de vue anatomique - fonctionnel. Les athlètes

choisis ne sont pas autorisés d'avoir des maladies physiques qui peuvent devenir plus graves en raison du sport. L'attitude de l'individu est atteinte par le système myo-ostéo-articulaire et le système nerveux, étant influencé par l'état physique.

**Selecția în schiul alpin realizată prin condiționarea
impusă de criteriile anatomo-funcționale**

Cuvinte cheie: dezvoltare fizică, perimetru, diametru.
Rezumat: Dezvoltarea fizică armonioasă este dată de armonia dintre perimetru și diametru, respectiv proporționalitatea segmentară. Perimetrele sunt circumferințele segmentului respectiv, iar diametrele sunt distanțele liniare care reprezintă lungimea părții segmentare. Pe măsura creșterii și dezvoltării organismului se intervine prin selecția bine organizată pentru a descoperi acei sportivi care îndeplinesc condițiile și criteriile ce sunt premise pentru viitorii schiori din punct de vedere anatomo-funcțional. Sportivilor selectați nu li se permite să aibă afecțiuni fizice care pot deveni mai severe din cauza acestui sport. Atitudinea individului se realizează prin cooperarea dintre sistemul mio-oste-articular și cel nervos, fiind influențată decisiv de starea fizică.

RELATIONSHIP OF TRAINING EFFORT PARAMETERS WITHIN A TRAINING MACRO-CYCLE OF JUNIOR FEMALE GYMNASTS

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Abstract: The purpose of the paper is to introduce the relationship of effort parameters in different training stages of junior III gymnasts. To highlight the relationship of training effort parameters in various preparatory stages of junior gymnasts, we have organized a study of case in the national team from Onești. The study was conducted during the period (24.03.2008 – 10.06.2008) formed of 11 training micro-cycles, applied to 8 junior gymnasts (3 female gymnasts of category III, level 3 and 5 female gymnasts of category II, level 4), 12-13 years old.

The study focused on the training plans within a training macro-cycle, monitoring statistically the content of training means and the training effort parameters in various stages of preparation. Statistical processing has been made in Word and „KyPlot” programs. A comparative analysis of the training stages and periods highlights the increase of means per training session and the decrease of total reps number from the basic stage to the pre-competitive stage and the competitive stage.

The evaluation of gymnasts' technical training was based on the results obtained in competition compared with the content of demands listed in the Qualifying Program for categories III and II, in terms of requirements of difficulty on each apparatus, penalties and mistakes of execution.

The findings of the study emphasize the relationship of effort parameters used over the preparatory stage, their specificity in pre-competitive stage and the fructification of technical training consistent with competitive

effort parameters which led to training improvement and to better performances achieved in competition.

Key words: *training, effort, athletic shape, artistic gymnastics, planning, performance.*

Introduction

Sport is a field of competitions, where the training has become increasingly sophisticated thanks to sports professionals, in large part, and to athletes as well. By training, athletes are preparing to achieve high performance, the training main purpose being to increase athletes' effort and capacity for performance and to develop strong psychological traits (G. Niculescu, 2003).

Artistic gymnastics, the sport that we concomitantly enjoy and marvel at, due to the outstanding performance we are witnessing nowadays, is in full transformation. In recent years there has been a continued "rush for elements" and difficult connections, especially since those already presented in competitions are declassified continuously because the increase of the number of gymnasts who manage to introduce such elements and connections in their exercises. Thus there occurred both the tendency to limit the number of difficult and risky elements required by the contest rules, and a better correlation of the special requirements with the level of training and the age of performance gymnastics practitioners (V. Grigore, 2001).

The effort in women's artistic gymnastics is distributed differently on each one of the four apparatus, involving many muscle groups in a wide variety of movements (high level of complexity) in a relatively mixed energetic system, but with net anaerobic predominance (V. Potop, 2008).

Sport training is formed of loads which lead, by their volume, intensity, density, complexity, specificity and type, to functional adaptations or to the achievement of coordinative and technical-tactical objectives in which the systems submitted to training are stressed up to pathological limit.

In training methodology, one of the most exciting and complex issues is the peaking on the planned date. Periodization is one of the most important concepts of training and planning. Determining the optimal mix between volume and intensity is a complex task and usually depends on the specific sport (T. Bompa, 2002).

The 3 periods of a macro-cycle correspond to the phasic character of athletic shape: preparatory period, corresponding to the period of installation or obtaining of the athletic shape; the competitive period that corresponds

to the phase of fructification or manifestation of the athletic shape; transition period that corresponds to the phase of organized off-peaking and recovery of the capacity for effort (S. Teodorescu, 2009).

For a long time it was said and believed that the two parameters of training effort, volume and intensity, are in a reverse ratio, namely, in proportion as the intensity increases, the volume must decrease while an increase of the volume entails the decrease of the intensity. But, the modern practice confirmed by its results that the increase of the body capacity for effort and the peaking for competition are achieved through a large volume with high intensity for certain periods (N. Vieru, 1997).

Purpose of the paper: to present the relationship of training effort parameters in various stages of training of junior III female gymnasts.

Hypothesis

We consider that an optimum relationship of effort parameters used during the preparatory period, their specificity in pre-competitive stage and the fructification of technical training consistent with competitive effort parameters will lead to training improvement and to better performances achieved in competition.

Organization and conduct of the study

To point out the relationship of training effort parameters in various preparatory stages of junior gymnasts, we have organized a study of case in the juniors' national team in Onești.

The study was conducted during the period (24.03.2008 – 10.06.2008) containing 11 training micro-cycles, applied to 8 junior gymnasts (3 female gymnasts of category III, level 3 and 5 female gymnasts of category II, level 4), 12-13 years of age.

Methods of research and procedures

- Method of bibliographic study;
- Method of observation;
- Method of experiment;
- Statistical-mathematical and plotting methods.

The study analyzed the training plans within a training macro-cycle, monitoring statistically the content of training means and the training effort parameters in different stages of training. Statistical processing has been made in Word and „KyPlot” programs. The training was made in a micro-cycle with two workouts a

day: Mondays, Tuesdays, Thursdays and Fridays – two workouts/day and on Wednesdays and Saturdays –one workout only; morning

workout from 10³⁰ to 13⁰⁰ and the afternoon workout from 17⁰⁰ to 19³⁰.

Results of study

Table no. 1. - Features of training effort parameters

No.	Effort parameters	Basic and pre-competitive stage			Competitive period		
		Morning workout	Afternoon workout	Total	Morning workout	Afternoon workout	Total
1	No. pf preparatory workouts	24	16	40	18	12	30
2	Vaults	16	8	24	13	7	20
	Uneven parallel bars	24	8	32	20	7	27
	Beam	24	8	32	20	7	27
	Floor	12	12	24	13	7	20
3	Warm-up (minutes)	20	20	40	20	20	40
4	Artistic training + mobility (minutes)	50+10	-	50-60	***	***	***
5	Physical training (minutes)	30	30	60	30	30	60

Note: *** artistic training was made during the training on beam and on floor.

In table no. 1 are listed the features of effort in the preparatory period – basic, pre-competitive and competitive periods,

highlighting the parameters of effort in the training session no. 1, 2 and their total.

Table no. 2. - Content of training means – preparatory period, basic stage, 24.03.2008- 19.04.2008

Apparatus		No. of means			Reps no./ workout	Total no of reps		
		Work.1	Work.2	Total		Work.1	Work.2	Total
Vaults	Preparatory exerc.	7			3-10	1152		
	Vault	4				960		
	Total	11				2112		
Uneven bars	Technical elements	9	4	13	1-10	912	264	1176
	2-3 elements connected	7	4	11	1-10	456	112	568
	Total	16	8	24	1-10	1368	376	1744
Beam	Elements	10	10	20	2-5	1440	400	1840
	Connection of acrobatic elements	5	5	10	2-5	432	280	712
	Artistic elements	4	4	8	2-5	1872	680	2552
	Total	19	19	38	2-5	3744	1360	5104
Floor	Acrobatic lines on acrobatic path	13			1-5	13		
	Total of means	13			1-10	1104		
Total of training means				86				10064

Tables no. 4 and 5 present the content of training means in the pre-competitive and competitive periods, in terms of volume of

means on each apparatus, the number of means, the optimum number of reps per training session, total reps and total of training means.

Table no. 4. Content of training means in preparatory period, pre-competitive stage,
from 21.04.2008 to 17.05.2008

Apparatus		No. of means			No. of reps / workout	Total no of reps		
		Work.1	Work.2	Total		Work..1	Work..2	Total
Vaults	Preparatory exercises			3	3-7			312
	Vaults			6	3-7			768
	Total			9	3-7			1080
Uneven bars	Technical elements	8	5	13	1-10	1368	336	1704
	Connections of 2-3 elements	6	4	10		864	128	992
	Total	14	9	23		2232	464	2696
Beam	Elements	6	5	11	3-5	192	200	392
	Connections of acrobatic elements	9	5	14		408	184	592
	Artistic elements	6	6	12		240	240	480
	Total	20	16	37		840	624	1464
Floor	Acrobatic lines on acrobatic path			8	1-5			408
	Artistic elements			8				960
	Acrobatic lines on floor			9				960
	Total of means			25				2328
Total of training means				94				7569

Table no. 5. Content of training means in competitive period, from 19.05.2007 to 0.06.2008

Apparatus		No. of means			No. of reps / workout	Total no of reps		
		Work.1	Work.2	Total		Work.1	Work.2	Total
Vaults	Preparatory exercises			4	1-5			340
	Vaults			7	3-5			660
	Series of competition vaults			1	2			40
	Total			12				1040
Uneven bars	Warm-up technical elements	3	3	6	1	60	21	81
	1 st part	1	1	2	2	40	14	54
	2 nd part	1	1	2	2	40	14	54
	Full exercise	1	1	2	5	100	21	121
	Failed elements - correction		3	3	5		105	105
	Total	6	9	15		240	175	415
Beam	Warm-up elements 30seconds	5	5	10	3	300	105	405
	Full exercise	1	1	2	5	100	105	205
	Failed elements - correction	3	6	9	5	300	210	510
	Mounts + dismounts	5	5	20	5	500	178	678
	Total	14	17	41		1200	598	1798
Floor	Acrobatic lines on acrobatic path				1-5			400
	Acrobatic lines of the exercise on floor			16	1-5			400
	Artistic saltos, pirouettes			5	5			500
	Full exercise			1	3			60
	Artistic full exercise			1	2			40
	Failed elements - correction			3	5			300
	Total of means			31				1700
Total of training means				99				4953

Table no. 6. Results in Juniors' Team National Championships, 8-10.06.2008 Buzău





N.M.										
	A1	B	Score	A1	B	Score	Final mean	A1	B	Final mean
B.A-M.	4.400	9.550	13.950	3.000	9.500	12.500	13.225	5.300	8.600	13.900
N.M.	4.400	8.625	13.025	4.400	9.600	14.000	13.513	5.300	8.950	14.250
B.B.	4.200	9.175	13.375	3.000	9.300	12.300	12.838	3.900	8.875	12.675
B.D.	4.400	9.500	13.900	4.400	9.600	14.000	13.950	5.400	8.925	14.325
D.M.	4.400	9.300	13.700	3.000	9.400	12.400	13.050	4.500	7.950	12.450
G.G.	4.200	9.200	13.400	3.000	8.700	11.700	12.550	5.400	8.675	14,075
I.L.	4.400	9.650	14.050	3.000	9.400	12.400	13.225	5.600	8.575	14.175
Ş.C.	4.000	8.325	12.325	3.000	9.225	12.225	12.275	5.100	8.350	13.450
Mean	4.3	9.16	13.46	3.35	9.34	12.69	13.07	5.06	8.61	13.66
S.E.M.	0.05	0.16	0.2	0.23	0.1	0.29	0.18	0.2	0.11	0.25
S.D.	0.15	0.46	0.57	0.64	0.29	0.84	0.53	0.57	0.33	0.73
Coef. Var.	3.51	5.07	4.28	19.3	3.11	6.64	4.06	11.3	3.9	5.36

Table no. 7. Results of National Championships- continued

N.M.								Total score	Mean of B	Category Place in ranking
	A1	B	Final mean	A1	B	Final mean	Pen.			
B.A-M.	6.300	9.025	15.325	5.000	8.850	13.850		13.850	9.105	II.3
N.M.	6.800	8.750	15.375	5.400	9.425	14.825		57.963	9.035	II.1
B.B.	4.900	8.075	12.975	4.200	8.700	12.600	0.300	51.088	8.805	II.10
B.D.	6.100	7.150	13.250	5.100	8.900	14.000		55.525	8.815	II.4
D.M.	6.400	9.150	15.550	4.900	9.025	13.925		54.975	8.965	II.5
G.G.	5.800	9.350	15.150	5.200	8.925	14.125		55.900	8.970	III.2
I.L.	6.000	8.000	14.000	5.600	9.275	14.875		56.275	8.980	III.1
Ş.C.	5.700	9.225	14.925	4.700	8.875	13.575		54.225	8.800	III.4
Mean	6.0	8.59	14.56	5.01	8.99	13.97		49.97	8.93	
S.E.M.	0.2	0.27	0.35	0.15	0.08	0.25		5.2	0.04	
S.D.	0.56	0.77	1.01	0.43	0.24	0.71		14.7	0.11	
Coef. Var.	9.4	9.01	6.9	8.6	2.65	5.15		29.5	1.28	

In table no. 6 and 7 are summarized the performances achieved by the gymnasts included in the study at Artistic Gymnastics National Championships for Juniors, held in Buzău, emphasizing the level of technical training on each apparatus, in terms of score A1- difficulty of the exercise, score B- penalties for execution and final score on each apparatus.

Table no. 8 shows the results achieved in apparatus finals in Artistic Gymnastics National Championships for Junior, held in Buzău, highlighting the place and the final score on apparatus.

Discussions

The subjects of the experimental group are represented by 8 junior gymnasts (3 female gymnasts of category III, level 3 and 5 female gymnasts of category II, level 4), 12-13 years old, members of the Olympic team of juniors within the Training Camp of Oneşti. Junior female gymnasts' training in our study was made with two training sessions daily, meaning 10 training sessions weekly, each one having 150 minutes/session, 1500 minutes / week (25 hours).

As for the work order on apparatus, we monitored the work on uneven parallel bars and on beam in both training sessions of the same day, while the apparatus for legs – vaults and floor - were alternated, one in the morning and the other in the afternoon. All over the preparatory period, the program and the order of apparatus was constantly maintained, with some exceptions in special cases (accidents, preferences or other conditions). A comparative analysis of the training stages and periods highlights the increase of means per training session and the decrease of total reps number from the basic stage to the pre-competitive stage and the competitive stage.

The assessment of gymnasts' technical training was based on the results obtained in competition compared with the demands content of the Qualifying Program for categories III and II, in terms of requirements of difficulty on each apparatus, penalties and mistakes of execution (***, 2007).

Conclusions

The findings of the study emphasize the influence of training means in different stages and the dynamics of effort parameters in the training of junior female gymnasts of categories III and II. The relationship of training means and effort parameters during the basic mezzocycles, pre-competitive and competitive period, emphasize the preparatory exercises, the technical and artistic exercises on each apparatus, the optimum number of reps necessary for learning and consolidating these exercises during the preparatory period of the basic stage; training means, centered round connections of technical elements and parts of the full exercise, the optimum number of reps needed to improve these ones during the preparatory period of the pre-competitive stage; means of modeling the training for competition within the check-up workouts, the optimum number of reps necessary for perfecting the full exercises and the increase of the capacity for effort in the competitive period. The efficiency of training effort planning in the preparation of junior female gymnasts was highlighted by the performances achieved in the National Championships, regarding the grades granted by the jury A1, B and the final score and last, but not least, the total score in the all-round finals ranking. Ensuring an optimum relationship of effort parameters used during the preparatory period, their specificity in pre-competitive stage and the fructification of technical training consistent with the competitive effort parameters will lead to training improvement

and to better performances achieved in competition.

References

1. Bompá, T.O., *Periodization: Theory and Methodology of Training*. 2002, (70, 164).
2. Dragnea, A.; Mate-Teodorescu, S., *Theory of Sport*. „Fest” Publishing House, Bucharest, 2002, (129).
3. Grigore, V., *Artistic Gymnastics- Theoretical Bases of Sports Training*. “Semne” Publishing House, Bucharest, 2001, (14-15).
4. Niculescu, G., *Artistic Gymnastics - Theoretical and Methodical Reference Points*. Arvin Press, Bucharest, 2003, (58).
5. Potop, V., *Women's Artistic Gymnastics – Elements of Theory and Methods*. “Bren” Publishing House, Bucharest, 2008, (8).
6. Teodorescu, S., *Periodization and Planing in Performance Sport*. Alpha MDN Publishing House, Buzău, 2009, (48).
7. Vieru, N., *Manual of Sports Gymnastics*. „Driada” Publishing House, Bucharest, 1997, (65-67).
8. *** 2007, *Qualifying Program*, Technical Commission of Romanian Federation of Gymnastics.

Relația parametrilor efortului de antrenament în cadrul unui macrociclu de pregătire la nivelul gimnastelor junioare

Cuvinte cheie: antrenament, efort, forma sportivă, gimnastica artistică, planificare, performanță

Rezumat: Scopul lucrării îl constituie prezentarea relației parametrilor efortului de antrenament în diferite etape de pregătire la nivelul gimnastelor junioare III. Pentru a evidenția relația parametrilor efortului de antrenament în diferite etape de pregătire a gimnastelor junioare s-a organizat un studiu în cadrul lotului național de la Onești. Studiul s-a desfășurat în perioada (24.03.2008 – 10.06.2008), 11 microcicluri de pregătire, aplicate la 8 gimnaste junioare (3 gimnaste de categoria a III-a, nivel 3, și 5 gimnaste de categoria a II-a, nivel 4), cu vârste cuprinse între 12-13 ani.

În studiu au fost luate planurile de pregătire din cadrul unui macrociclu de pregătire, urmărindu-se statistic conținutul mijloacelor de pregătire și parametrii efortului de antrenament în diferite etape de pregătire. Prelucrările statistice au fost făcute în programele Word și „KyPlot”. Din analiza comparativă dintre etapele și perioadele de pregătire se evidențiază creșterea numărului de mijloace pe antrenament și scăderea numărului de repetări totale de la etapa de bază la etapa precompetițională și perioada competițională. Evaluarea pregătirii tehnice a gimnastelor s-a realizat pe baza rezultatelor obținute în concurs, comparativ cu conținutul cerințelor programei de clasificare la nivelul categoriilor a III-a și a II-a, privind cerințele de dificultate la fiecare aparat, penalizări și greșeli de execuție. Rezultatele studiului evidențiază relația parametrilor efortului administrați în perioada pregătitoare, specificitatea acestora în etapa precompetițională și valorificarea pregătirii tehnice în concordanță cu parametrii efortului competițional, care a condus la îmbunătățirea pregătirii și obținerea de performanțe mai bune în concurs.

Relation des paramètres d'entraînement dans un macro-cycle préparatoire des gymnastes juniors

Mots-clés: entraînement, effort, forme sportive, gymnastique artistique, planification, performance.

Résumé: Le but de l'étude est celui de présenter la relation des paramètres de l'effort d'entraînement dans des étapes différentes de préparation des gymnastes juniors III. Pour mettre en évidence la relation des paramètres de l'effort d'entraînement en divers stages de préparation des gymnastes juniors III, on a organisé une étude à Onești, dans l'équipe nationale. L'étude a été menée au cours de la période (24.03.2008 – 10.06.2008), formée de 11 micro-cycles d'entraînement, appliqués à 8 gymnastes juniors (3 gymnastes de catégorie III, niveau 3 et 5 gymnastes de catégorie II, niveau 4), âgées de 12 à 13 ans. L'étude a analysé les plans d'entraînement dans le cadre d'un macro-cycle de préparation, en observant statistiquement le contenu des moyens de préparation et les paramètres de l'effort d'entraînement en divers stages de préparation. Les traitements statistiques ont

été faits dans les programmes Word et „KyPlot”. Une analyse comparative des étapes et des périodes de préparation met en évidence l'augmentation du nombre de moyens par entraînement et une diminution du nombre de répétitions totales depuis l'étape de base jusqu'à l'étape pré-compétitionnelle et la période compétitionnelle.

L'évaluation de la préparation technique des gymnastes a été fondée sur les résultats obtenus dans la compétition en comparaison avec le contenu des exigences du programme de classification au niveau des catégories III et II, portant sur les exigences de difficulté à chaque appareil, pénalités et erreurs d'exécution. Les résultats de l'étude prouvent la relation des paramètres de l'effort administrés au cours de la phase préparatoire, leur spécificité dans l'étape pré-compétitionnelle et la mise en valeur de la préparation technique en concordance avec les paramètres de l'effort compétitif, qui ont conduit à l'amélioration de l'entraînement et à la réalisation de meilleures performances dans la compétition.

PEDAGOGICAL AND PSYCHOLOGICAL ARGUMENTS IN FAVOUR OF THE EARLY TRAINING OF CHILDREN THROUGH JUDO

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Summary: A pre-schooler crosses the stage of knowledge, by enlarging contact with the social and cultural environment providing life models that lead to an ever more active integration into the human condition. Through its content, and the means that are used in training under an appealing form, judo may lead to forming and improving children's psycho motility, thus influencing their growth and development.

Key words: psycho motility, training, preschool pupils, judo.

Introduction

Motility constitutes the main source and manifestation form, an expression of the child's psychological acquisitions during the first years of life. The study of movement showed the close connection between the motor and the nervous development.

Judo is the sporting discipline with important educational and formative valences (the greeting ritual, the norms of corporal and collective hygiene, the right attitude towards work, the ability to think and anticipate, the will to win, courage, self-confidence, the ability to efficiently solve the situations encountered, the sense of moral conduct, fair play);

Specialised literature brings forth no new research, able to elucidate the role of the

components of psycho motility on learning the basic technique in judo at preschool level;

In our country, neither the specialised federation, nor the clubs have a curriculum containing operational structured aimed at developing the psychomotor skills (general and segmental coordination, static and dynamic balance, corporal scheme, laterality, ambidextrousness, spatial-temporal orientation, ideomotility, kinaesthesia, speed of reaction, repetition, anticipation, etc) at the preschool level;

The lack of specialised personnel familiar with the methodology of approaching training from a technical, physical, mental and psychomotor point of view in preschool kids.

Hypothesis

In the educational approach at the preschool level, play represents the activity, the fundamental learning form, the means of achieving and stimulating the child's ability and creativity, a his right and the opening towards the freedom of choice according to his own needs.

Purpose: Elaborating and experimenting content by means specific to judo for the initial formative stage, aimed at optimising the harmonious physical development, knowing the body's and its segments' movement potential, the spatial and temporal orientation and balance, acquiring conduct norms encouraging a positive social attitude, stimulating imagination and creativity, developing the ability to communicate and the moral character.

The methods which made it possible to draw up the project and laid the foundations of the present research were as follows: the study of specialised literature, the method of scientific investigation, the pedagogical experiment, the statistical-mathematic method, the graphic and table method.

The crucial arguments in favour of choosing the research on the methodology of teaching judo to preschoolers are as follows:

a. from a pedagogical point of view

The corporal activities are complex social activities, whose functions should be regarded in connection to the essential directions of their effects on the development, improvement and use of the physical and mental skills.

Upgrading the formative process of the young generation aims at increasing effectiveness in order to obtain the maximum output, and thus adequately respond to the society which constitutes the development framework. The child's formative-educational activity should take place so that he will be prepared, able to adapt and actively integrate into a fast-changing society.

The content of the formative-educational process takes shape according to the requirements of permanent education. Permanent education is brought about by a series of factors justifying this perspective, viz. permanent change, demographic boom, the progress of science and technology, the increase of spare time, the rational life models, job diversification, social life democratisation, etc. Nowadays, the focus of attention lies on the relation between formation and education.

At the preschool level, the formative process has certain peculiarities, both in point of the totality, and its components. These components are as follows:

Objectives, determined by the general goals of education, as well as the peculiarities of school training;

Material resources, proper both to the specific objectives and the children's age requirements;

Human resources – preschoolers and educators, with their own distinct peculiarities;

Contents and didactic strategy, adequate for the systematic, gradual shaping of the child's personality, with its own individual requirements;

The organisation form of the predominant activity - play – learning being mainly achieved through this activity;

The educator-child relation - specific, facilitating the evolution from the parent-child relation to the teacher-pupil relation;

Assessment - flexible, consisting of the initial, in-process and final assessment, performed mainly verbally, through descriptive appreciations, and incentives (colourful stars, stickers, etc.).

b. Psychological aspects

As a result of literature review, the following characteristics specific to the preschool level were identified:

The preschool period, between 3 and 6 years of age, constitutes the second childhood, also called the "gold age" of childhood.

It is also one of the periods of intense mental development taking place under the pressure of social, cultural influences, the mass-media influences and the attendance of preschool institutions where the child gets into contact with multiple requirements regarding autonomy and adaptation to the life environment.

The preschool period [U. Şchiopu, E.Verza, 1997 p. 127 and Golu, Verza, Zlate 1993 p. 77] may be divided into 3 sub periods : **young preschooler** (3-4 year-old), **middle preschooler** (4-5 year-old) and **old preschooler** (5-6 year-old).

Play remains the dominant activity during this period, but it starts correlating to educational tasks.

The following features may thus be found for the 3 preschooling sub periods:

Table no. 1 – Characteristics of age peculiarities during the 3 periods of the preschooling age

Young preschooler (3 - 4 year-old)	Middle preschooler (4 - 5 year-old)	Old preschooler (5 – 6 year-old)
<p>Strong expansion ; The child lives the frenzy of exploring his environment; Passage from the body centered on fulfilling the instant needs to activities whose methods of fulfilment are more complex and especially of the psychological type; Insufficient development of mutual communication among children during play or other activities; The activities become richer in content and more organised; The mental processes have not yet been separated from action; Difficulty in adapting to new conditions and situations; Motor instability; Thinking is subordinated to concrete actions; Passage from objects and their handling to their integration into larger use strategies, bestowing symbolical functions on them.</p>	<p>Easy adaptation to kindergarten environment, the play is richer in actions, and the compulsory activities are more demanding; the activity become more varied and complex; knowledge on the environment increases; manifests maximum openness to the environment, which develops perception, that becomes an oriented process, with tasks and their own achieving methods ; emotional responses are more controlled and in agreement with the requirements of parents or educators; accelerated pace of socialisation; more evident character features delineating the future personality; perception starts as an independent process, with its own tasks and achievement methods ; memorisation and voluntary reproduction start getting shape; progress in motility and cognitive functions; the ability to acquire and obey rules in games, hygiene, socialisation, politeness.</p>	<p>Activities are more systematic, even if the basic activity remains play; School preparation begins; Perception converted into observation turns into a skill; Language becomes more systematised and connected, obeying grammar rules; The initial forms of logical thinking, oriented towards systematisation in fact observation, start to appear; Voluntary attention span increases, Memorising processes are used; Passage to systematic learning; Increased activity of acknowledging reality; Development of mental processes: attention, will, memorisation, sense of observation; Motor strength and agility are tried through imitation; Keen interest in artistic sense manifestation.</p>

Conclusions

The preschooler crosses the stage of knowledge, through broadening his contact with the social and cultural environment, wherefrom he assimilates life models determining an ever more active integration in the human condition.

The preschool period brings important changes in the child's life, on the somatic and mental development level, as well as on the relationships level.

Through its contents and appealing training methods, judo may lead to forming or improving children's psycho motility in their growth and development.

Judo is a sporting branch that meets the following needs:

- Forming respect for, and pleasure in, movement;
- Acknowledging that sport is a source of health;
- Acquiring new practical knowledge;
- Opening vistas to socialisation and cooperation.

Bibliography

1. Balint N. T., Proiectarea activităților de predare, învățare, evaluare a capacității motrice la vârsta preșcolară , Ph.D thesis, 2008.
2. Golu P., Verza E., Zlate M., Psihologia copilului. EDP, Bucharest, 1993.
3. Manolachi V., Chirazi M., Roșu D. Ion Ene M., Judo – metoda alternativa de educație contemporană, The Annals of "Dunarea de Jos" University of Galati, Fascicle XV ISSN – 1454 – 9832 – 2010, p. 20; 2010
4. Niculescu R., Lupu D. Pedagogia preșcolară și a școlarității mici), <http://www.scribd.com/doc/19347533/Pedagogia-Preșcolara-Si-a-Scolaritatii-Mici>, retrieved 23 February 2011.
5. Șchiopu U., Verza E., Psihologia vârstelor, ciclurile vietii, 3rd edition, EDP, Bucharest; 1997.

Argumente Pedagogice și Psihologice în

Favoarea Pregătirii Timpurii a Copiilor prin Judo
Cuvinte cheie: psihomotricitate, pregătire, preșcolari, judo.

Rezumat: Copilul preșcolar traversează etapa cunoașterii, prin lărgirea contactului cu mediul social și cultural, din care asimilează modele de viață ce determină o integrare tot mai activă la condiția umană. Prin conținutul său, prin mijloacele folosite în pregătire într-o formă atractivă, judo-ul

poate conduce la formarea sau îmbunătățirea psihomotricității copiilor cu influențe în creșterea și dezvoltarea acestora.

Arguments Pedagogiques et Psychologiques pour la Formation des Enfants par le Judo

Mots clés: psychomotricité, préparation, préscolaire, judo.

Résumé: L'enfant préscolaire évolue par l'élargissement du contact social et culturel, d'où assimile des modèles de vie, ce qui détermine une intégration plus active à la condition humaine. Par son contenu, par les moyens attirants utilisés dans la formation, le judo peut mener à la formation, à l'enrichissement de la psychomotricité des enfants ayant des influences dans leur développement.

IMPLEMENTATION OF THE "ALTATHLON" SYSTEM IN THE TRAINING SESSIONS FOCUSING ON LEARNING THE TWO-HANDED PASS FROM BELOW

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Summary: The proposed system used in training athletes learning the two-handed pass from below has the following functions:

- acquisition of data on the equality of forces with which the athlete hits the ball using both hands, limb positions at the moment of passing, the spot where the ball touches the forearms and the presence of hold in each pass performed by the player during training;

- Real-time assessment of the pass effected by the player;

- Sending back to the player of a vocal message aimed at correcting in training the performance of the accurate moves. It is to be remarked that generally athletes react very effectively to stimuli received through vocal messages;

- the post-analysis of the training efficiency and the player's evolution in time.

Due to its facilities, the "Altathlon" system provides objective evaluation and real-time feed-back, which prompts us to believe that this system may be included among the modern means of training and assessing beginner female volleyball players.

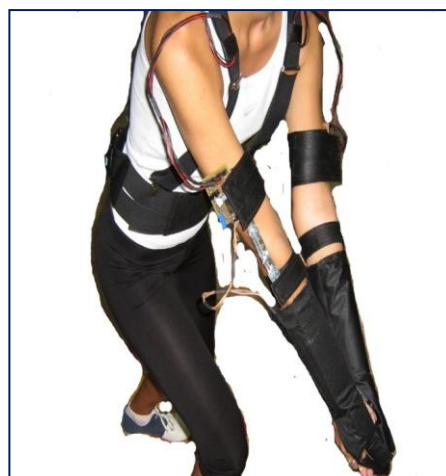
Key words: volleyball, evaluation, sensors, system "Altathlon".

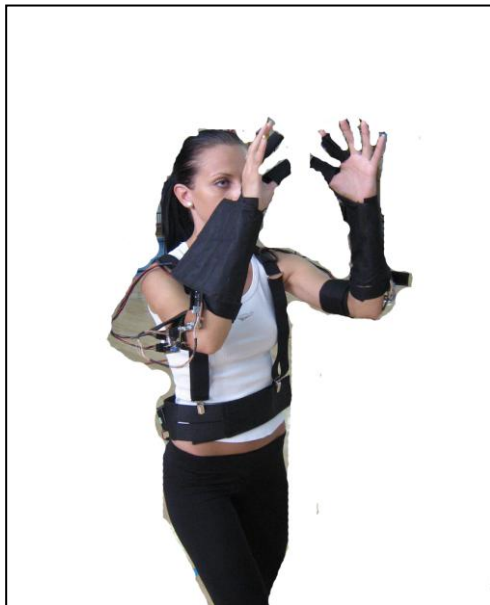
Introduction

Optimising technique in volleyball constitutes a decisive step in achieving performance, therefore the instructional means and methods should be re-oriented, so that to lead to precision and consistency in execution as early as the primary stage of learning the technical element.

Contents

Searching for solutions of optimising technique acquisition in the shortest time and with the maximum yield, the present paper aims at contributing to the training process by using a programme based on the video analysis of the structure of the component moves, able to positively influence the level of the training in beginners through improving the qualitative and quantitative indices starting as early as the learning stage.





“ALTATHLON” is the system we proposed to be implemented as a means of computer-assisted training for athletes.

The name of the “ALTATHLON” system derives from the Latin words *Altus*

Athleticus suggesting its primary purpose: obtaining in the highest performance in the shortest possible time, viz. high sports performance. Essentially, the system allows the computer-assisted correction of the specific

It was deemed that approaching the issue of assessing the play actions efficiency through the clarifications brought to life through the analysis, investigations and conclusions in the present paper would be extremely useful in the present and future activity specific to volleyball.

The present paper, besides the contributions it attempts to bring to the training process in beginner female volleyball players, wishes to provide support to promoting information technology in the field of “Sports and Physical Education”, thus facilitating the processes of learning and evaluation for the take-over and double-handed pass from below.

moves of the events, procedures or sporting techniques, which may be implemented in various stages of the athletes’ training.

Even if this system may be applied in any event, procedure or technique of sports training, this paper will present an implementation of the system in the training specific to the acquisition of the two-handed pass from below in volleyball.

The system’s architecture also allows the implementation in medical applications specific to motor recovery or the manufacture of intelligent.

The proposed system used in training athletes learning the two-handed pass from below has the following functions:

- acquisition of data on the equality of forces with which the athlete hits the ball using both hands, limb positions at the moment of passing, the spot where the ball touches the forearms and the presence of hold in each pass performed by the player during training;
- Real-time assessment of the pass effected by the player;
- Sending back to the player of a vocal message aimed at correcting in training the performance of the accurate moves. It is to be remarked that generally athletes react very effectively to stimuli received through vocal messages;

- the post-analysis of the training efficiency and the player's evolution in time.

The data obtained in this manner are transmitted to a distance through a wireless medium (wireless radio) to a computer. The computer performs the real-time data analysis and send back to the player an answer of a vocal message type (the system's feedback-as an audio stimulus). To analyse the arm movements, it is necessary to fix several sensors on the player's arms. The application of these sensors on the arms requires the use of especially designed cuffs, taking into account the rules

imposed by the methodology for learning the two-handed pass from below.

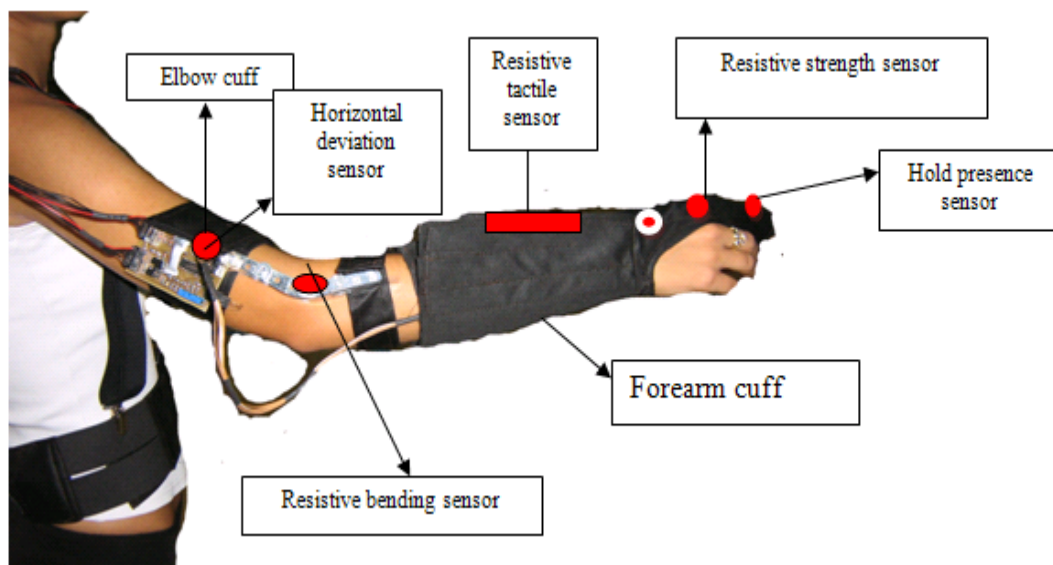


Fig. 1- Arm sensors application

Keeping into account the technical characteristics of the sensors and the functions they should perform, in manufacturing the cuffs the following measures should be taken:

- To provide comfort during the training sessions, the cuff should be made of permeable and slightly elastic textile material. The cuff will consist of three layers of this textile material. The middle layer will contain the sensors;
- The sensors are fixed on a rigid prop (copper-plated glass textolyte) to provide the accurate measurement of the physical date of interest, and to protect the sensors which are extremely sensitive from a mechanic point of view, as they may break during the training efforts in case they are subject to strains on other directions than the ones they are designed for. The rigid props also provide a robust connection between the sensors' terminals and the cable connected to the circuit of

measurement signal formation fixed on the elbow cuff;

- The terminals of the sensors that cannot fit on the rigid props are protected by inserting them between plastic sheets which provide an easy slide between the layers without creating dangerous mechanical strains in these terminals;
- The sensor props are fixed on the textile materials by rivets or press buttons to make sure that the sensors are stable in their correct position.

Conclusions

Including helping devices in the athletes' technical training favours the comprehension of simple or complex movements within sequences, revealing the main link, as well as the execution errors intervening in the execution of the technical procedure, maximising the densities in the lesson.

Including helping devices in the driving systems may constitute a support for both the educator and the educated, if it is part of a precise methodological path, for each learning stage, completed by exercises with or without the ball, individual or in pairs, adapted to peculiarities and possibilities.

Optimising technique in volleyball is a decisive step in performance, therefore the instructional means and methods should be reoriented so that to lead to execution precision and consistency, as early as the primary stage of learning the technical elements.

Implementing a new working methodology based on a modern orientation in training beginner volleyball players by using helping devices results in improving performance.

Using helping devices represents an effective means of training and assessing players, which may complete the existing methodology in high performance volleyball.

Bibliography

1. Preda, C., Niculescu M., (2009)- Study in programming the technical training for beginning female volleyballers by introducing supporting devices. (Annual international Conference" Physical Education, Sport and Health" , Pitești Scientific report series physical education and sport nr. 13
2. Preda Carmen, Niculescu Mugurel, (2009)-The Optimization of the Training Process by Introducing the Use of New Helping Apparatus Specific to Learning Volleyball.- (Innovation and creation in the field of physical activity, sources of human performance Galați.)
3. <http://www.interlinkelectronics.com/catalog/Force-Sensors>
4. <http://sports-motion.com/products-ark-volleyball.htm>

Implementarea sistemului "ALTATHLON" în antrenamentele pentru învățarea pasei de jos cu două mâini la volei

Rezumat: Sistemul propus spre implementare în pregătirea și antrenarea sportivilor care învață pasa de jos cu două mâini la volei are următoarele funcții: achiziția datelor privind egalitatea forțelor cu care sportivul lovește mingea cu ambele mâini, poziții ale membrelor în momentul pasei, locul unde mingea lovește antebrațele și prezența prizei fiecărei pase efectuate de jucător în timpul antrenamentului;

- achiziția datelor privind egalitatea forțelor cu care sportivul lovește mingea cu ambele mâini, poziții ale membrelor în momentul

pasei, locul unde mingea lovește antebrațele și prezența prizei fiecărei pase efectuate de jucător în timpul antrenamentului;

- evaluarea în timp real a pasei efectuate de către jucător;
- emiterea înapoi înspre jucător a unui mesaj vocal menit să corecteze pe durata antrenamentului efectuarea strictă a mișcărilor corecte;
- analiza ulterioară a eficienței antrenamentului și evoluția în timp a jucătorului.

Datorită facilităților sale sistemul „Altathlon” oferă o evaluare obiectivă și un feed-back în timp real ceea ce ne face să credem că acest sistem poate fi acceptat în rândul mijloacelor moderne de pregătire și evaluare a voleibalistelor începătoare.

Cuvinte cheie: volei, evaluare, senzori, sistem „Altathlon”.

L'implémentation du système "altathlon" en ce qui concerne les entraînements pour l'apprentissage de passer le ballon de bas à deux mains dans le volleyball

Résumé: Le système proposé pour être implémenté en ce qui concerne la préparation et l'entraînement des sportifs qui apprennent à passer le ballon de bas à deux mains a les fonctions suivantes :

L'acquisition des données en ce qui concerne l'égalité des forces avec lesquelles le sportif touche le ballon avec les deux mains, les positions des membres dans le moment de la laissez-passer, le lieu où le ballon touche les antebres et la présence des prises de chaque laissez-passer effectuée par le joueur pendant l'entraînement, l'émission en arrière vers le joueur d'un message vocal ayant pour but de corriger sur la durée de l'entraînement la réalisation stricte des mouvements corrects. Il est à remarquer le fait que, généralement, les sportifs réagissent très efficacement aux stimulus recus par le biais des messages vocaux. L'analyse ultérieure de l'efficacité de l'entraînement et l'évolution en temps du joueur. Grâce à ses facilités, le système Altathlon offre une évaluation objective et un feed-back dans un temps réel, ce qui nous fait croire que ce système peut être accepté dans la ligne des moyens modernes de préparation et d'évaluation des femmes qui jouent du volleyball au niveau débutant.

Mots-clés: volley-ball, évaluation, sensor, système "ALTATHLON".

MODERN METHODS OF TRAINING IN FEMALE FOOTBALL - SOCCER AEROBIC

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Abstract: *The general physical training is a component of athletic training and has a special role in the entire preparation process, ultimately leading athlete performance in training and competitions. Aerobic soccer workout follow building skill by repeating the rudimentary movements that are based in football. This method creates uniformity between the two legs by the same number of exercises. The rhythmic learning is easier for players to take certain motions as would be natural.*

We believe that aerobic exercise - aerobic soccer will help improve coordinator capacity of the legs in playing with or without ball, causing increased exercise capacity, leading to the athletes performance during competitions.

Ability motor coordination with or without ball game, as assessed by the initial and final testing, has shown visible progress, resulting in increased overall quality of the players motricity. We believe that the methodology and applied exercises and the results have enabled us to achieve our objectives forward, confirming our hypothesis that the means of soccer aerobics (aerobics) improve exercise capacity of the athletes in football. In this respect, we consider it necessary for all professionals involved in the industry to carefully choose the exercises and methods used in women's football because an adaptation to men exercise would surely fail.

Keywords: *motor skills, aerobic soccer, women's football.*

Introduction

Now the female soccer knows the fastest growing in the entire world from all the sports industry.

It is present in all major world competitions and collects increasingly more fans.

The law must be admitted that the program's rise is due to launched by FIFA not allow any country to participate in men's football competition if that country has not a women's football team. Consider that for a women's football in the most effective means of increasing the motor capacity is one that lends specific means and methods of aerobic exercise - aerobic soccer. By using this method, in addition to improving exercise capacity develops motor skills that are consistent with anatomical and functional specificity of girls such as flexibility, mobility and balance. Aerobic-soccer workout includes moves that improve the technique on a cardio exercise.

Aerobic soccer workout aims to build rudimentary skill through repetition of movement which is based in football. This

method creates uniformity between the two legs by the same number of exercises.

Every movement used serves to coordination the ball game. Also, this type of training helps the player to better understand the posture, the weight to be exerted on the ball as well as its strengths and weaknesses. The technique is based on pliometrie thus creating a good game of feet, eradicating the concept of slow-moving legs.

Concentration during training is vital because if not consciously participate in the exercise will be focused spend more time to recover the ball than to enjoy the program. In addition to other methods here can talk about personal happiness but also about the movements that the players adopt a more comfortable style.

Benefits of aerobic soccer training

1. Sense coordinative training is simply a way to make connections in the nervous system in terms of pace. Depending on the quality of this connection, future performance will be easier and safer;

2. To learn slowly and recreation, so that actions are very economical and efficient in terms of energy consumption;
3. Foot work becomes easier and more relaxed; the legs are kept at a comfortable distance enabling the player to go in any direction.

The aerobic training improves soccer foot work by:

- Sense and control the body as a whole;
- Ability to attack and defend at any time;
- Comfort and ease in changing the direction of play;
- Speed, mobility and speed of execution.

The objectives of the study

I. Analysis plans aerobics workout with exercises used in women's football teams;

II. Develop and implement a training system by means of aerobic exercise combined with specific elements of the game;

III. Arguments both theoretical and experimental application of this system of training that would improve exercise capacity of athletes;

Research hypothesis

We believe that aerobic exercise - aerobic soccer will help improve coordinator capacity of the legs in relation *with* or *without* ball and these increase exercise capacity, leading to the athletes performance during competitions.

Research methods and techniques used

- literature analysis method
- Teacher observation
- type a questionnaire survey method
- testing method
- Pedagogical Experiment

The experimental study was conducted with a group of athletes CSS Targoviste Female Football League I. He worked at The Sports Club in the city Nucet Hall CSS Targoviste and Petrolul Stadium. Research began on Ioctombrie 2009 and closed it on June 1, 2010. Study subjects were the 20 components of CSS Târgoviște team, of which 8 are also part of the national teams,

Stages of research

The research was conducted in three stages as follows:

- First, between October 2009 and January 2010, analyzing specific documents on women's football and the means used in training, we set the direction of research.
- The second stage, from January to May 2010, addresses the actual experiment aimed at implementing the system of exercises with means borrowed from

gymnastics, the initial and final testing and the questionnaire use of this method.

- The third stage, during May-June 2010, was the processing and interpretation of data obtained from conducting research, formulating final conclusions on improving exercise capacity of the players in football.

The composition of specific exercises structures and their use in aerobic gymnastics training (program soccer - aerobic)

For 5 months the team which held the experiment was performed in a total of three sessions per week, schedule specifically designed soccer aerobic. The program lasted 15 to 20 minutes per workout depending on the training objectives of the day. This program can be used both at the beginning and end of training.

Originally used, the program gives a very good tone, dealing with the preparation of the training body for effort, develops foot-ball skills, preparing master structures that can be used in the game.

Originally used, the program gives a very good tone, dealing with preparation for the effort of training the body develops foot-ball skills, preparing master structures that can be used in the game. On the other hand, use the end of the lesson program has a role in development of resistance, and also having control of the ball.

The structure is a building program that combines dance aerobics steps in specific techniques with the main game. Like any program of aerobics, step took place this structure, the rhythm of music on a 138-154 BPM.

In aerobics using seven basic steps: jumping jacks, knee, kick, run, and three steps Steep touch link: march, jog and skip. In football knows a large variety of processes and technical elements which we use several such as hitting the ball across, you risk and vole.

Dance block structure:

1. Steep touch right(left) to lift the ball overhead and bring it back to chest;
2. Lifting his right (left) leg with knee bent and placing the ball over his knees, back with the ball at chest;
3. 3 - Lift right (left) leg stretched out and placing the ball in the leg (at added risk);
4. 4 - Side step with cross foot forward - scoring the ball;
5. Side step with the foot cross back - scoring the ball back;

6. Raising a knee to chest - lowering the leg on the ball scoring;
7. 7 - Big step side (right) - 3 scoring the ball, alternating with each leg;
8. 8 - V-step: step forward right foot, step forward with left foot, right foot back, left foot back, or with two jumps comeback (on the ground ball between the legs);
9. 9 - 3 steps with the ball across the side with management, 4 jumping jack jumping;
10. tow lateral jump on one foot - two scoring on the ball - back with legs close, 2 back lunge;
11. Tow pointing the ball with the right foot beat while clapping, two jumping, two pointing the ball left foot, two jumps away;
12. Right step by step to the cross, pointing to left and right;
13. Pointing the ball to the right, striking the ball with simulation across the right, and repeat with left foot;
14. Skip forward - scoring the ball;
15. Skip side and scoring on the ball;
16. Jog;
17. Lunch on the right foot - left foot pointing, lunch on your left foot - right foot scoring.

Final assessment

Applying a questionnaire after using the structure of specific steps in aerobic soccer The questionnaire aimed to achieve several points relevant to our work as:

- effects of psycho-social perspective;
- effects of musical accompaniment;
- awareness of each step;
- the effect it produces on the body structure of Fine motor skills.

Test motor skills - coordination segment, with and without the ball.

Was performed using the steps of the Fine motor skills structure and specific steps aerobic soccer game. Were awarded three points for each step and the average score was obtained for the presentation of each step.

Blood flow changes in effort

In the specific training female football blood undergoes changes late.

Late changes is highlighted as a result of systematic practice, long uration exercises. Changes occur slowly and are due to ever increasing requirements imposed by physical effort. Bradicardia is more pronounced as the athletes are training longer.

The women followed with a reat of approx. 43-45 contraction / minute.

Late changes in the breathing exercises

Late changes were observe:

- Lower respiration sport to young groups at rest;
- The athletes there is a slow breathing (10-12 baths per minute) due to respiratory muscle development and thoracic-pulmonary elasticity of structures;
- The training effort in the apnea athletes can work regular full and O2 debt is satisfied by the small number of large amplitude breaths;
- Amplitude of respiratory muscles due inspirational development that increase the chest cavity permits a current volume between 800-900 ml.

Conclusions

One of the latest methods used in the field is borrowing funds from gymnastics and aerobics. This method has proven his efficiency because of its practical applicability, as agreed by the player.

1. First music presence in the football practice women was a stimulating factor, engaging, enjoyable, who relax the applicant and sober atmosphere, enhancing motor and mental skills of the athletes.

2. It was noted that the structure produces an aerobics body heat better, enhancing fine motor skills and mental capacity of athletes through entertaining rhythm that it requires.

3. After use choreographic structures specific for soccer aerobics for 4 months of preparation, final evaluation was applied with notes. It was observed that the specific actions of the game, is done *with* or *without* ball more effectively, easily, better guidance to the opponent and the ball extensively giving athletes, top marks.

4. By evaluating the sports game of football, we got positive feedback on all structures present in the match: footwork *with* or *without* ball to the opponent or guidance to team members becomes superscript.

5. The women appreciate that training is much better after using choreographic structures - soccer aerobics.

6. The results of the poll conducted among the players from CSS Targoviste, have shown that using of such means in - aerobic soccer led to produce positive changes both in terms of motric and mentally .

7. We can also see how the coordination segment motor capacity, *with* or *without* ball, measured by initial and final test, was in visible progress.

We believe that the methodology and the means used and the results obtained have enabled us to achieve our objectives forward, confirming our hypothesis about the means of aerobic exercise that improves exercise capacity of the players in football.

In this respect, we consider it necessary for all professionals involved in the industry to carefully choose the exercises and methods used in women's football because an adaptation to men exercise would surely fail.

Bibliografie selectivă

1. CROITORU, N., (2007), Licence Cours, Târgoviște
2. EPURAN, M., (2005), Body Activities Research Methodology, Edited FEST, Bucharest
3. DRAGNEA, A., BOTA, A. (1999) Theory of teaching educational activities and motricitate, Edited Didactică și Pedagogică, Bucharest
4. CHERA-FERARIO, B., (2010), Optimization of specifically condition means aerobic gymnastics, Edited Valahia Press, Târgoviște
5. Fifa activity report, (2007)
6. Fifa report and Statistic, (2006)
7. Fifa Statues, (2008)
8. Fifa Laws of the Game, (2008-2009)
9. KULCSAR, S., (2000), Aerobic Gymnastics , Edited Clusium, Cluj Napoca
10. NEȚA, G. (2005), Fundamental of the football game, Edited Risoprint
11. STĂNCULESCU, V., (1999) Guidelines for professional football coach 364 days a year of competitive Edited Transilvania Expres, Brașov.
12. STOICA, A., (2004), Aerobic gymnastics, theoretical and practical, Edited Bren, Bucharest
13. ȘICLOVAN, R. (2005), Coach, Edited by Școala Federala de Antrenori, Bucharest
14. www.121.ro/articole/art5865m_pt_sport_html
15. www.alfaimpact.org.com
16. www.chinadaily.com.cn/sports/2007-12/24/data/attachment/jpg

Metode moderne de pregătire în fotbalul feminin – soccer aerobic

Rezumat: Pregătirea fizică generală este o componentă a antrenamentului sportiv și are un rol deosebit în întregul proces de pregătire, determinând în final randamentul sportivului în antrenamente și concursuri. Antrenamentul de soccer aerobic vizează construcția îndemânării prin repetarea unor mișcări rudimentare care reprezintă baza în fotbal. Această metodă creează o uniformitate între cele două picioare prin același număr de repetări. În plus prin învățarea ritmică este mai ușor pentru jucătoare să adopte anumite mișcări ca și cum ar fi naturale. Considerăm că gimnastica aerobică – soccer aerobic va contribui la îmbunătățirea capacității coordonative a picioarelor în jocul cu sau fără minge și implicit la mărirea capacității de efort, favorizând astfel randamentul jucătoarelor în timpul competițiilor. Capacitatea motrică de coordonare în jocul cu sau fără minge, evaluată prin testare inițială

și finală, a manifestat un progres vizibil, rezultând creșterea calitativă a motricității generale a jucătoarelor.

Considerăm că metodologia și mijloacele aplicate și rezultatele obținute ne-au permis să realizăm obiectivele înaintate, confirmând ipoteza noastră că prin exerciții de soccer aerobic se îmbunătățește capacitatea de efort a jucătoarelor de fotbal. În acest sens considerăm că este necesar ca toți specialiștii implicați în domeniu să aleagă cu mare grijă mijloacele și metodele utilizate în fotbalul feminin pentru că simpla adaptare la antrenamentele de băieți ar duce sigur către eșec.

Cuvinte cheie: capacități motrice, soccer aerobic, fotbal feminin

Méthodes modernes de préparation dans le foot- ball féminin soccer aérobique

Resumé: La préparation physique générale est une composante de l'entraînement sportif et elle a un rôle particulier dans tout le processus de préparation, en déterminant finalement le rendement du sportif dans des entraînements et compétitions.

L'entraînement de soccer aérobique vise la construction des compétences par la répétition des mouvements rudimentaires qui représentent la base dans le foot-ball. Cette méthode crée une uniformité entre les deux pieds par le même nombre de mouvements. En plus par l'apprentissage rythmique c'est plus facile pour le joueur d'adopter certains mouvements comme s'ils seraient naturels. On considère que la gymnastique aérobique, soccer aérobique, contribuera à l'amélioration de la capacité coordinative des pieds en rapport de avec ou sans ballon et par défaut à l'augmentation de la capacité d'effort, favorisant ainsi le rendement des joueurs pendant les compétitions. La capacité motrice de la coordination du jeu avec ou sans ballon, évaluée par tests initiaux ou finals, a manifesté un progrès visible, en résultant la croissance calitative de la motricité générale des joueurs. On considère que la méthodologie et les moyens appliqués et les résultats obtenus nous ont permis de réaliser les objectifs avancés, en confirmant notre hypothèse que les moyens dans le soccer aérobique (la gymnastique aérobique) améliorent la capacité d'effort des joueurs de foot-ball. Dans ce sens on considère qu'il est nécessaire que tous les spécialistes impliqués dans le domaine choisissent avec beaucoup d'attention les moyens et les méthodes utilisés dans le foot-ball féminin parce que une simple adaptation aux entraînements des garçons menerait certainement vers l'échec.

Mots clé: capacités motrices, soccer aérobique, foot-ball féminin.

WORKOUTS PERIODIZATION AND CYCLICITY TO GET IN ATHLETIC SHAPE FOR PERFORMANCE WEIGHTLIFTING

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Abstract: *The target of this paper is represented by the periodization and the cyclicality of workouts intended to get in athletic shape in performance weightlifting. To do this, we believe that an optimum relationship between periodization and cyclicality of training micro-cycles in performance weightlifting will lead to peaking and to improving the performances in competition.*

The study was centered round the training plans and monitored both cyclicality of micro-cycles and training periodization throughout a training macro-cycle for participation in the European Championships for Seniors, 3-11.04.2010, Minsk-Belarus. The statistical processing was done in Word and „KyPlot” programs, calculating the usual statistical indices and the linear correlation test. To highlight the relation of training periods and training cyclicality in performance weightlifters’ workouts, a study was conducted within the Weightlifting Olympic Team. The study was carried out throughout the period (04.01.2010 – 11.04.2010), consisting of 14 micro-cycles, applied on a group of 4 athletes (1 junior and 3 seniors), 18 to 24 years of age, junior and senior categories.

The results of the study show the effectiveness of workouts periodization and cyclicality in the case of monitored weightlifters and the performances achieved in competition. In conclusion, we are able to confirm that the optimal relationships between periodization and cyclicality of training micro-cycles in performance weightlifting contributed to reaching the athletic shape and to improving performances in competitions.

Key words: *cyclicality, athletic shape, weightlifting, periodization, planning, performance.*

Introduction

The fundamental structure of training sessions is based on certain physiological, psychological and pedagogical principles. The sessions’ duration is outlined by the improvement of training factors and depends on the specific of the sports branch and on athlete’s individual capacities. Three structural levels can be distinguished within the training process: microstructure – structure of separate workouts and micro-cycles; mezzo-structure-structure of intermediate cycles and training stages, including a series of different types of micro-cycles; macrostructure – structure of large cycles (macro-cycle) (L.S. Dvorkin, 2005).

Weightlifters’ training is built under the form of training cycles, whose purpose is to achieve high sports results at a given point in time. Each training cycle is formed of periods for athletic shape development, for its stabilization and for its temporary loss. These three periods make up together the training cycle, or, as it is also called, the large cycle (macro-cycle) (R. A. Roman, 1986).

Sport training has a cyclic and concentric character, given by its temporal structure, elements of content and correlations of effort parameters. Training cyclicality is determined by the phasic nature of athletic shape, by the laws of obtaining, turning into good account and losing the athletic shape: the phasic character of this one is, at the same time, the natural basis of training periodization (A. Dragnea; S. Mate-Teodorescu, 2002).

A key objective of the training is that the athlete reaches the performance peak at a given time, usually during the most important competition of the year. To help the athlete to reach this high level of performance, the whole program of training must be properly periodized and planned, so that the development of motor skills and capacities takes place logically and methodically all over the year (T.O. Bompa; M.C. Carrera, 2006).

Getting in athletic shape is the ultimate goal of the workouts modeled and scheduled within a yearly cycle; the modern methodology conducts these workouts rigorously, without improvisations, preserving them against the influence of random and disruptive factors. At

high performance level, the algorithmization issue becomes more complicated, since it involves also the order, sequence and relative stability of the programming indices values. Thus, in weightlifting, analyzing the distribution of reps number in weekly cycles of the competitive year, we find out that the totals are not the same in the first weekly cycles preceding the first peaking as in the cycles that prepare the second peaking (A. Nicu, 1993).

The stability of athletic shape depends on how training is conducted throughout the preparatory period and how the different types of mezzo-cycles and micro-cycles are linked with one another. (S. Teodorescu, 2009).

Achieving high sports performance is the direct result of athlete's adaptation to different types and methods of training organized and planned per various stages that are sequentially implemented. During these training stages and especially during competitive period, the athlete reaches a certain training level. (T.O. Bompá, 2002).

In sports activity, the performance can be seen as a result that exceeds the common level and that can be represented by an individual or collective record, achieved in a sports competition, expressed in absolute numbers, in conformity with the official places system or with the ranking (S. Teodorescu, 2009).

Purpose of the paper: to highlight the periodization of training in order to get in the athletic shape specific to performance weightlifting.

Hypothesis

We consider that an optimum relationship between periodization and cyclicity of training micro-cycles in performance

weightlifting will lead to peaking and to improving the performances in competition.

Methods of research and procedures

- 1) Method of bibliographic study and planning documents;
- 2) Method of observation;
- 3) Method of experiment;
- 4) statistical-mathematical method and plotting method.

The study was centered round the training plans and it monitored both cyclicity of micro-cycles and training periodization throughout a training macro-cycle for participation in the European Championships for Seniors, 3-11.04.2010, Minsk- Belarus. The statistical processing was done in Word and „KyPlot” programs, calculating the usual statistical indices and the linear correlation test.

Subjects, protocol of conduct.

To highlight the relationship of preparatory periods and the cyclicity of workouts during the training of performance weightlifters, we organized a study within the Weightlifting Olympic team. The study was conducted over a period (04.01.2010 – 11.04.2010), formed of 14 micro-cycles, applied on a group of 4 athletes, 18 to 24 years old, juniors and seniors categories.

Structure of training plan:

1. Preparatory period:

- 4-31.01.2010 - 28 days of training, place: Izvorani;
- 1-28.02.2010 - 28 days of training, place: Săftica-Forban;

2. Competitive period:

- 1-21.03.2010 – 21 days of training, place: Poiana Braşov;
- 22.03- 2.04.2010 – 11 days of training, place: Bucureşti;
- 3-11.04.2010 – 9 days in European Championships for Seniors, Minsk- Belarus.

Table no. 1. Cyclicity of training micro-cycles

No. Mc	Date	Compet Calen.	Reps no.	Techn. / strength %	Snatch / cl&jerk %	Sq. / Back Ex.%	Front sq. / Back sq. %	Pulls / bend. %
1	04-10.01		500	20 / 80	50 / 50	60 / 40	30 / 70	40 / 60
2	11-17.01		600	20 / 80	50 / 50	60 / 40	30 / 70	40 / 60
3	18-24.01		600	30 / 70	45 / 55	60 / 40	40 / 60	50 / 50
4	25-31.01		500	30 / 70	45 / 55	55 / 45	40 / 60	50 / 50
5	01-07.02		500	30 / 70	45 / 55	50 / 50	35 / 65	40 / 60
6	08-14.02		500	35 / 65	35 / 65	45 / 55	45 / 55	50 / 50
7	15-21.02		400	35 / 65	40 / 60	45 / 55	50 / 50	60 / 40
8	22-28.02		400	35 / 65	40 / 60	50 / 50	50 / 50	60 / 40
9	01-07.03		400	40 / 60	40 / 60	55 / 45	45 / 55	55 / 45
10	08-14.03		350	40 / 60	40 / 60	55 / 45	45 / 55	55 / 45
11	12-21.03		300	40 / 60	40 / 60	55 / 45	45 / 55	55 / 45
12	22-28.03		250	40 / 60	40 / 60	55 / 45	50 / 50	60 / 40
13	29.03-04.04		150	50 / 50	50 / 50	65 / 35	- / 100	60 / 40

14	05-11.04	EC Sen.	100	50 / 50	50 / 50	100 / -	- / 100	- / -
	Total of reps		5550					

Legend:

Mc- micro-cycle, Compet. calen.- competitive calendar, Reps no.- number of reps, Sq.- squats, Back Ex. – back exercises, bend.-bending, EC Sen.- European Championships for Seniors

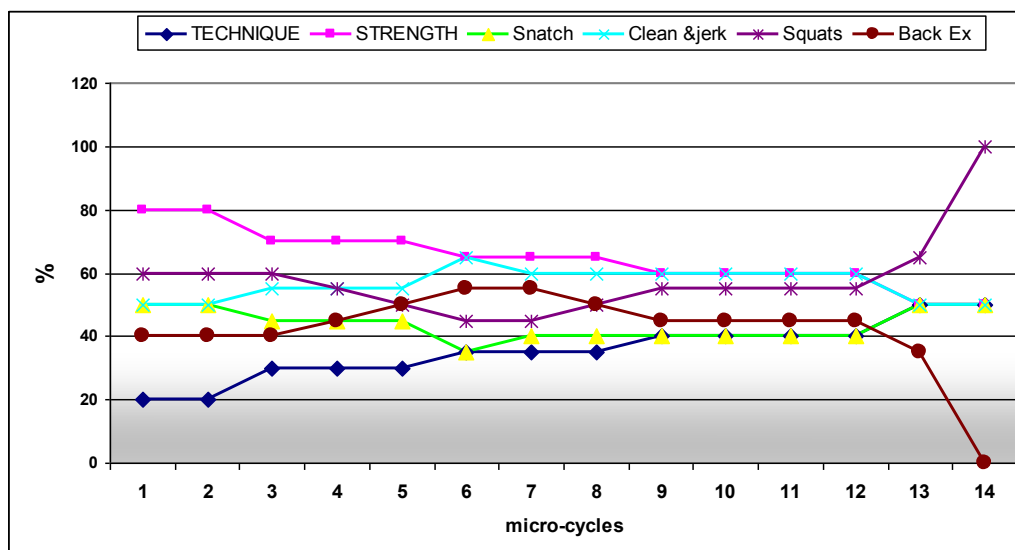
Results

Table no. 2. Results of training means share

	Reps no.	Technique / strength %	Snatch / clean & jerk %	Squats / Back Ex %	Front squats / Back squats %	Pulls / bending %
x- arithmetical mean	396.42	35.35/ 64.65	43.57/ 56.43	57.86/42.14	36.07/ 63.93	51.9/48.1
Em – average mean	41.09	2.4/ 2.4	1.32/ 1.32	3.58/3.58	4.45/ 4.45	2.15/2.15
s- standard deviation	153.7	9.08/ 9.08	4.97/ 4.97	13.4/13.4	16.6/ 16.6	7.78/7.78
Cv%- coeff. Var.	38.7	25.6 / 14.05	11.41/ 8.81	23.1/31.8	46.1/ 26.06	14.9/16.1

In table no. 1 and graph no. 1 are summarized the number and period of training micro-cycles, the number of reps, the share of

technique and strength training means and the share of technical procedures and strength exercises.



Graph no. 1. Cyclicity of training micro-cycles

Table no. 2 shows the results of statistical-mathematical calculations in terms of technical and

strength training means and the share of technical procedures and strength exercises.

Table no. 3. Content of training means in micro-cycle no. 9

Period: 01-07.03.2010 No. of reps:400; TECHNIQUE:40% (160 reps); STRENGTH60% (240 reps)

DAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
PERCENTAGE	25%	12.5%	20.5%	10%	17.5%	12.5%
NO. OF REPS	100	50	82	40	78	50
M	Back sq.	Front sq.	Back sq.	Front sq.	Back sq.	Front sq.
O	80%-3,3,3	80%-3,3	80%-3,3,3	80%-3,3,3	80%-3,3,3	80%-3,3
R	85%-3,3,3	85%-2,2,2	85%-3,3,3	85%-2,2	85%-3,3,3	85%-2,2,2
N	90%-2,2	90%-2,2	90%-2,2	90%-2,2	90%-2,2	90%-2,2
I	Bend.	Dip w/o sp	Sn.pulls	Cl&Jr push	Bend.	Dip w/o sp
N	90%-4,4	+Sn w/o	90%-4,4,4	+Sq	90%-3,3,3	+Sn w/o sp
G	100%-	sp.	100%-3,3,3	80%-(3+2)x3	100%-	80%-(2+2)x3

	3,3,3 +10kg- 2,2,2	80%-(2+2)x3 85%-(1+2)x3 90%-(1+1)x2 Sn pulls 90%-3,3 100%-2,2 +10kg-2	+10kg-2,2	85%-(2+2)x2 90%-(1+2)x3	3,3,3 +10kg-2,2	85%-(1+2)x3 Sn. pulls 90%-3,3,3 100%-2,2
A F T E R N O O N	Tch. sn. 80%-3,3 85%- 2,2,2 90%- 1,1 Tch.dip+ Tch.cl & jr 80%-(2+2)x2 85%-(1+2)x3 90%-(1+1)x2		Tch. snatch 80%-3,3 85%- 2,2 90%- 1,1 95%-1 Tch.dip+ Tch.cl & jr 80%-(1+2)x3 85%-(2+1)x2 90%-(1+1)x2 95%- (1+1)x1		Tch. sn. 80%-2,2,2 85%- 2,2,2 90%- 1,1 Tch.dip+ Tch.cl & jr 80%-(2+2)x2 85%-(1+2)x2 90%-(1+1)x2	

Legend: Back sq.- back squats, bend.-bending, Tch. sn.- technical snatch, Dip w/o sp +Sn w/o sp – Dip without splitting + snatch without splitting, Sn pulls- Snatch pulls, Sn. pulls- snatch pulls, Cl&Jr push.- push clean and jerk.

Table no. 3 summarizes the content of training means within micro-cycle no.9 of the competitive period, in terms of percentage and number of reps, share of strength and technical training, number of reps and intensity of means

Table no. 4. Results of competitive performances - E. C. for Seniors

Full name	Class (kg)	Weight in competition	Sn.	Cl.& J	Total	Ranking		
						Sn.	Cl.& J	T.
O.G.	56	55,72	100	-	-	14	-	-
B.A.	62	61,76	135	165	300	4	1	2
V.I.F.	62	61,48	125	151	276	5	6	6
M.N.	69	68,56	153	180	333	1	1	1

Legend: - failure, Sn.- snatch, Cl.& J – clean and jerk, T.-total.

In table no. 4 are listed the results of the performances achieved in the European Championships for Seniors regarding the weight class, performances achieved in snatch, clean and jerk, total and the ranking also.

Discussions

In terms of planning of training means, there were analyzed 14 micro-cycles of workouts, covering the preparatory and competitive period.

Regarding the results of mathematical-statistical calculations, we notice an average of 396.42 reps; the share of technical means is 35.35% (snatch 43.57% , clean and jerk 56.43%) and strength 64.65% (squats 57.86% and back exercises 42.14%).

In the analysis of training means content, within the study was exemplified the

micro-cycle no. 9 of competitive training, highlighting the percentage of reps number in each training day of the micro-cycle. The training was conducted in two sessions daily on Mondays, Wednesdays and Fridays and only one session on Tuesdays, Thursdays and Saturdays.

Reviewing the performances achieved in competition by the study subjects in the European Championships for Seniors, Minsk-Belarus, we noticed that the athlete O.G. failed to lift the weight entered in the contest at snatch style while the athlete M.N., with a performance of 153kg at snatch lift and 180kg at clean and jerk lift and a total of 333kg, was awarded the first place at 69kg class.

Conclusions

The results of the study show the effectiveness of training periodization and the cyclicity of training sessions in order to reach the athletic shape in performance weightlifting.

The presentation of specific means planning, depending on the objectives had in view throughout the training, emphasize the share and the contents of the training means used in each micro-cycle.

The analysis of training plans showed that the cyclicity of workouts during the performance weightlifters' training micro-cycles highlights the total number of reps per micro-cycle and the share of training means.

Ensuring an optimal relationship between periodization and cyclicity of the training micro-cycles in performance weightlifting contributes to the athletic shape and improves performances in competitions.

References

1. Bompa, T.O., *Theory and Methodology of Training: Periodization*. Ex Ponto, Publishing House, Bucharest, 2002, (250).
2. Bompa, T.O.; Carrera, M.C., *Periodization of Sports Training*. „Tana” Publishing House, Muşăteşti, 2006, (109).
3. Dragnea, A.; Mate-Teodorescu, S., *Theory of Sports*. Fest Publishing House, Bucharest, 2002, (208-209)
4. Dvorkin, L.S., 2005, *Manual of Heavy Athletics*. „Sovetskij sport” Publishing House, Moscow, 2005, (74)
5. Nicu, A., *Modern Sports Training*. „Editis” Publishing House, Bucharest, 1993, (470).
6. Roman, R.A., *Weightlifter's Training*. „ Fizkul'tura i sport” Publishing House, Moscow, 1986, (96).
7. Teodorescu, S., *Training and Competition*. Alpha MDN Publishing House, Buzău, 2009, (164).
8. Teodorescu, S., *Periodization and Planning in Performance Sports*. Alpha MDN Publishing House. Buzău, 2009, (17-21).

Periodizarea și ciclicitatea antrenamentului în vederea obținerii formei sportive în haltere de performanță

Cuvinte cheie: ciclicitate, forma sportivă, haltere, periodizare, planificare, performanță

Rezumat: Scopul lucrării îl constituie periodizarea și ciclicitatea antrenamentului în vederea obținerii formei sportive în haltere de performanță. Pentru aceasta, am considerat că asigurarea unei relații optime între periodizarea și ciclicitatea microciclurilor de pregătire în haltere de performanță va contribui la obținerea formei sportive și la îmbunătățirea performanțelor în concurs.

În studiu au fost luate planurile de pregătire, urmărindu-se ciclicitatea microciclurilor și periodizarea antrenamentului în cadrul unui macrociclu de pregătire pentru participarea la Campionatul European de Seniori, 3-11.04.2010, Minsk- Belarus. Prelucrările statistice au fost făcute în programele Word și „KyPlot”, calculând indicii statistici uzuali și testul de corelare liniară. Pentru a evidenția relația perioadelor de pregătire și

ciclicitatea antrenamentului în cadrul pregătirii halterofililor de performanță, s-a organizat un studiu în cadrul Lotului Olimpic de haltere. Studiul s-a desfășurat în perioada (04.01.2010 – 11.04.2010), alcătuită din 14 microcicluri, aplicate pe un grup de 4 sportivi (1 junior și 3 seniori), cu vârste cuprinse între 18-24 ani, la categoriile juniori și seniori.

Rezultatele studiului evidențiază eficiența periodizării pregătirii și ciclicitatea antrenamentului la halterofili aflați în studiu și performanțele obținute în concurs.

În concluzie, putem confirma că asigurarea unei relații optime între periodizarea și ciclicitatea microciclurilor de pregătire în haltere de performanță a contribuit la obținerea formei sportive și la îmbunătățirea performanțelor în concurs.

Périodisation et cyclicité de l'entraînement pour obtenir la forme sportive en haltérophilie de performance

Mots-clés: cyclicité, forme sportive, haltérophilie, périodisation, planification, performance

Résumé: L'objectif de cette étude est la périodisation et la cyclicité de l'entraînement pour obtenir la forme sportive dans l'haltérophilie de performance. Pour ce faire, nous considérons que fournir une relation optimale entre la périodisation et la cyclicité des micro - cycles d'entraînement dans l'haltérophilie de performance aidera à réaliser la forme sportive et à améliorer les performances dans la compétition.

L'étude a pris en considération les plans d'entraînement, en observant la cyclicité des micro – cycles et la périodisation de l'entraînement au long d'un macro - cycle de préparation pour la participation au Championnats d' Europe pour Seniors, 3-11.04.2010, Minsk- Belarus. Les traitements statistiques ont été faits dans les programmes Word et „KyPlot”, en calculant les indices statistiques usuels et le test de corrélation linéaire. Pour mettre en évidence le rapport entre les périodes de préparation et la cyclicité de l'entraînement dans la formation des haltérophiles de performance, on a organisé une étude dans l'équipe olympique d'haltérophilie. L'étude a été menée au cours d'une période (04.01.2010 – 11.04.2010), formée de 14 micro - cycles, appliqués à un groupe de 4 athlètes (1 junior et 3 seniors), âgés de 18 à 24 ans, les catégories de juniors et seniors.

Les résultats de l'étude montrent l'efficacité de la périodisation de l'entraînement et la cyclicité de l'entraînement des haltérophiles faisant l'objet de l'étude, ainsi que les performances dans la compétition.

En conclusions, nous pouvons confirmer qu'une relation optimale assurée entre la périodisation et la cyclicité des micro – cycles d'entraînement en haltérophilie de performance a contribué à la forme sportive et à l'amélioration des performances en concours.

THE INFLUENCE OF SOMATIC PARAMETERS ON THE ENERGETIC PARAMETERS PROVIDED BY THE MGM TEST

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Abstract: The paper presents the influence of the somatic parameters (height and weight) of a group of 18 athletes on the energetic parameters, provided by the MGM test. The method used to estimate that influence is regression that takes into account two independent parameters of influence (the height and the weight). The paper reveals that, considered together, both somatic parameters have a certain influence on the energetic parameters, while individually, their influence is not significant for all three energetic parameters, for vertical jumps on both legs, on left and right leg.

Keywords: somatic parameters, MGM test, energetic parameters.

Introduction

The methods used to reveal the motrical qualities of athletes are useful for the trainers, when they have to establish the objective, the performance and, mainly, the program oriented to such goals.

There are various methods that investigate the athletes' motrical qualities, most of them based on athletics.

Such tests provide information on the basic characteristics (force, velocity and endurance) and on the control parameters.

Description of Miron Georgescu's test

In order to get the energetic parameters, 18 athletes were tested using the MGM test, which consist of a series of 15 vertical jumps on a special carpet, performed on both legs, on left leg and on right leg. The carpet is connected to a computer which provides the energetic parameters:

- the average unit power (PU);
- the average jump height (H);
- the repetition velocity (VREP).

The average unit power (PU) or the jumps on both legs, on right and left leg, offers information about the conditional training, about the force - velocity as motrical qualities, measuring the power ratio to body mass.

The average jump height (H) provides information on the force, while the repetition velocity (VREP) provides information on the velocity, mainly the force-velocity ratio.

Regression method

The regression method is a method of research of the link between variables using a regression function. Regression function expresses the quantitative change of the characteristic output (y) as a result of the influence of factorial parameters (x), the other factors being considered non-essential. For the multiple linear regression, the regression equation is therefore of the form:

$$Y = f(X_i) = \alpha_0 \cdot X_0 + \alpha_1 \cdot X_1 + \alpha_2 \cdot X_2 + \alpha_3 \cdot X_3 + \dots + \alpha_{p-1} \cdot X_{p-1} + \varepsilon \quad (1)$$

Once calculated the estimated regression coefficients \square several statistical tests should be performed. They must be capable of providing information about the statistical significance and on the ability to provide forecasts. The most important statistical calculations and tests are:

- Calculation of standard deviation;
- Calculation of the ratio between dispersions F;
- Calculation of the determination coefficient R^2 ;
- T test.

Experimental results

Performing the MGM test on the selected group of athletes, we get the energetic parameters (table 1). Taking into account the somatic parameters we can now emphasis the influence of each parameter on the performances of our subject, together with their global influence.

Table 1 Somatic and energetic parameters

Height	Mass	PU			H			VREP		
		Both legs	Right leg	Left leg	Both legs	Right leg	Left leg	Both legs	Right leg	Left leg
183	74	3.68	2.08	2.31	0.33	0.18	0.19	0.22	0.33	0.29
183	71	4.8	2.89	2.85	0.38	0.23	0.23	0.19	0.27	0.3
176	67	5.44	3.34	3.68	0.52	0.3	0.31	0.23	0.27	0.29
181	64	4.85	2.53	2.25	0.44	0.28	0.2	0.2	0.32	0.33
191	89	3.71	2.33	2.68	0.41	0.21	0.24	0.25	0.34	0.35
174	71	4.96	2.48	2.94	0.44	0.22	0.25	0.22	0.37	0.3
178	65	4.94	2.45	2.7	0.46	0.23	0.21	0.27	0.37	0.31
181	84	4.18	2.4	2.08	0.35	0.19	0.22	0.22	0.31	0.32
184	76	5.43	2.44	2.85	0.43	0.21	0.22	0.16	0.23	0.27
174	61	3.74	1.56	2.52	0.33	0.17	0.19	0.23	0.15	0.27
178	69	3.63	2.33	2.03	0.29	0.19	0.16	0.22	0.33	0.31
170	64	4.44	2.24	2.59	0.37	0.19	0.2	0.21	0.3	0.29
180	75	4.89	2.13	2.12	0.43	0.23	0.26	0.21	0.42	0.41
172	78	4.41	2.28	2.49	0.39	0.17	0.19	0.22	0.17	0.28
175	84	3.38	2.24	1.6	0.27	0.18	0.18	0.24	0.32	0.34
180	67	4.02	2.71	2.49	0.36	0.21	0.21	0.26	0.26	0.29
180	70	4.77	2.55	2.97	0.4	0.21	0.28	0.21	0.32	0.35
179	75	3.71	2.01	1.99	0.3	0.15	0.16	0.16	0.28	0.32

The regression statistics for the energetic parameters for vertical jump on both legs are shown in table 2. They reveal the fact

that the influence of both somatic parameters on the energetic parameters is 11.85% for PU, 10.5% for H and only 0.7% for VREP.

Table 2 Regression statistics

Regression Statistics			
	PU	H	VREP
Multiple R	0.3442	0.3240	0.0855
R Square	0.1185	0.1050	0.0073
Adjusted R Square	0.0009	-0.0144	-0.1250
Standard Error	0.6513	0.0657	0.0308
Observations	18	18	18

The results of the computed ratio between dispersions F, perform with the ANOVA test, are shown in table 3.

Table 3 – Anova test for energetic parameters

PU	df	SS	MS	F	Significance F
Regression	2	0.8553	0.4276	1.0081	0.3884
Residual	15	6.3632	0.4242		
Total	17	7.2185			
H	df	SS	MS	F	Significance F
Regression	2	0.0076	0.0038	0.8797	0.4352

Residual	15	0.0647	0.0043		
Total	17	0.0724			
VREP	df	SS	MS	F	Significance F
Regression	2	0.0001	5.24E-05	0.0552	0.9464
Residual	15	0.0142	0.0009		
Total	17	0.0143			

As none of the significance statistics F is greater than the critical value F, we conclude that there is no influence of the athletes' height and weight on the energetic parameters.

The intercepts and the regression coefficients are computed and revealed in table 4. They allow us to express the estimated regression function for each energetic parameter (2).

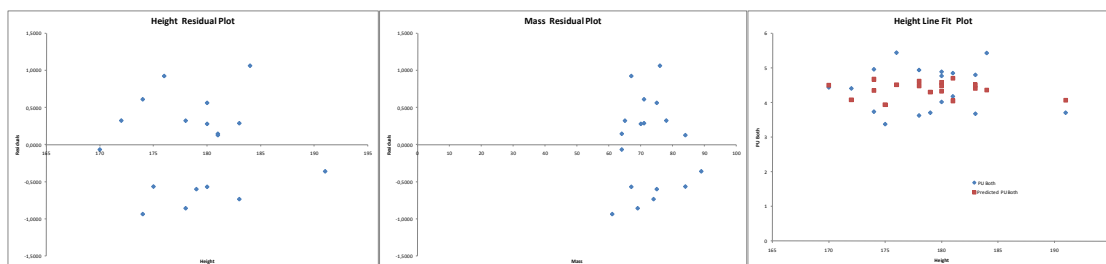
Table 4 – Estimated values of the coefficients for energetic parameters

PU	Coefficients	St.Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	3.5274	5.8403	0.6040	0.5549	-8.9209	15.9757
Height	0.0180	0.0359	0.5016	0.6232	-0.0585	0.0945
Weight	-0.0326	0.0231	-1.4099	0.1790	-0.0818	0.0167
H	Coefficients	St.Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-0.0082	0.5894	-0.0139	0.9891	-1.2644	1.2480
Height	0.0034	0.0036	0.9346	0.3648	-0.0043	0.0111
Weight	-0.0030	0.0023	-1.2665	0.2246	-0.0079	0.0020
VREP	Coefficients	St.Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.3093	0.2760	1.1210	0.2799	-0.2789	0.8975
Height	-0.0005	0.0017	-0.3157	0.7566	-0.0042	0.0031
Weight	0.0001	0.0011	0.0531	0.9583	-0.0023	0.0024

$$\begin{aligned}
 PU_{both\ legs} &= 3.5274 + 0.018 \cdot Height - 0.0326 \cdot Weight \\
 H_{both\ legs} &= -0.0082 + 0.034 \cdot Height - 0.003 \cdot Weight \\
 VREP_{both\ legs} &= 0.3093 - 0.0005 \cdot Height + 0.0001 \cdot Weight
 \end{aligned}
 \tag{2}$$

The plots for the residuals of height, mass, predicted PU for height, predicted PU for mass and normal probability (fig. 1), reveal the fact that the variable doesn't respect the normal

distribution and that there is no connection between the energetic parameter PU and the somatic parameters.



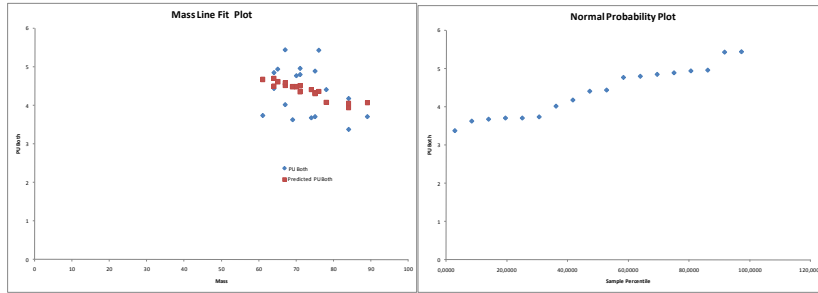


Fig.1 Residuals plots for PU

The plots for the residuals of height, mass, predicted H for height, predicted H for mass and normal probability (fig. 2), reveal the fact that the variable doesn't respect the normal

distribution and that there is no connection between the energetic parameter H and the somatic parameters.

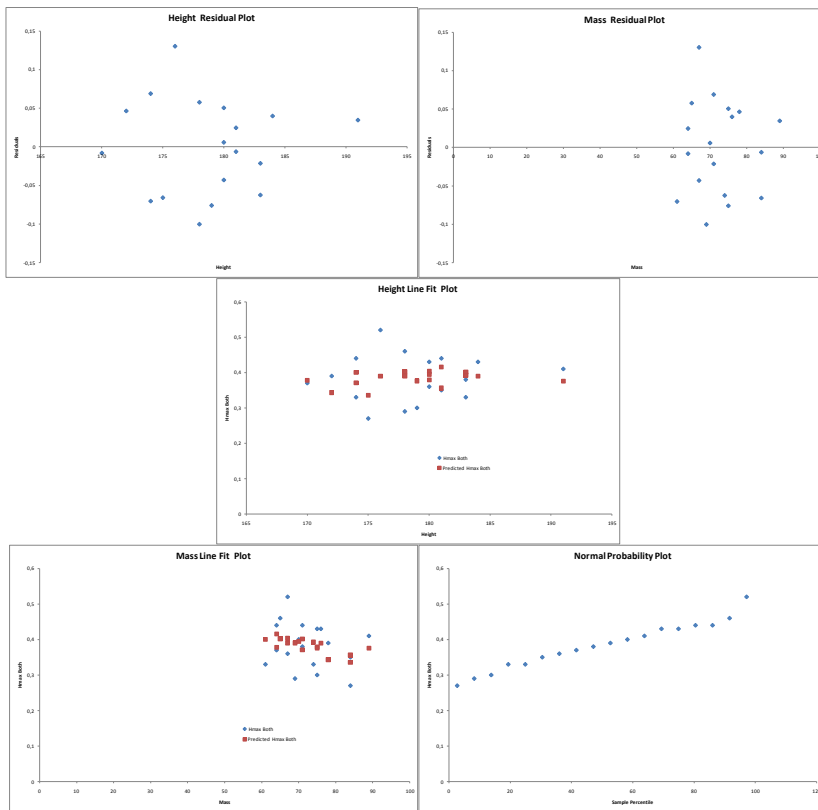
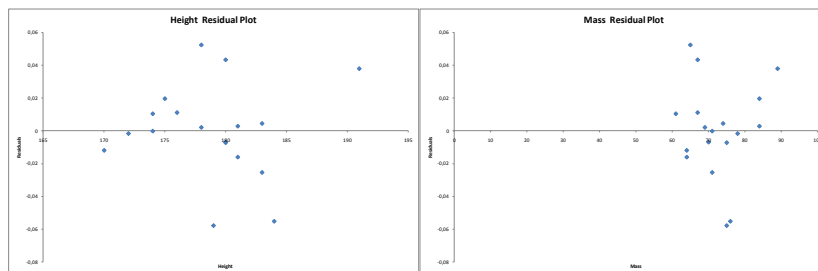


Fig.2 Residuals plots for H

The plots for the residuals of height, mass, predicted VREP for height, predicted VREP for mass and normal probability (fig. 3), reveal the fact that the variable doesn't respect

the normal distribution and that there is no connection between the energetic parameter VREP and the somatic parameters.



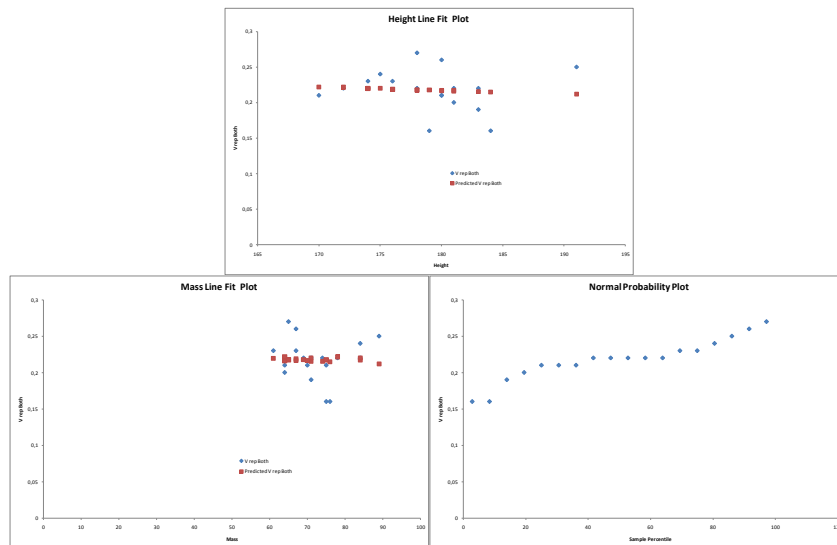


Fig.3 Residuals plots for VREP

Conclusions

The regression analysis performed on the energetic parameters revealed that the influence of both somatic parameters is different from one energetic parameter to another. Thus, for the PU at vertical jump on both legs, the influence is 11.85%, for the H energetic parameter, the influence is 10.49%, while for VREP energetic parameter is approximately zero.

Regarding the influence of the somatic parameters while performing jumps on left, right and on both legs, we conclude that for the PU parameter, the biggest influence of the somatic parameters was computed for the vertical jump on left leg (15.15%), for H parameter the biggest influence of the somatic parameters was computed for the vertical jump on right leg (21.93%). As for the VREP parameter, the biggest influence was computed for the vertical jump on left leg (16.22%).

References

1. MGM test description;
2. JURCA I., TIRON C., (1996) *Echipament electronic pentru aprecierea puterii maxime anaerobe*. In: Revista Stiinta sportului. Bucuresti, nr. 3
3. American College of Sports Medicine (2005) *ACSM's Guidelines for exercise testing and prescription*. (7th ed.) London: Lippincott, Williams and Watkins
4. Buckley, J. & Eston, R.G. (2007) In: Winter, E.M., Jones, A.M., Davison, R.R.C., Bromley, P.D. & Mercer, T.H. (eds) *British Association of Sport and Exercise Sciences (2007) Sport and Exercise Physiology Testing: Guidelines. Volume 1: Sport Testing*. The British Association of Sport and Exercise Sciences Guide. London: Routledge.
5. Dick, F.W. (2003) *Sports Training Principles*. (4th ed.) London: A & C Black
6. Mereuta, C., Mereuta, E., *Study on control parameters provided by MGM test*, THE ANNALS OF "DUNAREA DE JOS" UNIVERSITY OF GALATI, FASCICLE XV ISSN – 1454 – 9832 – 2010, pp. 30-35

7. Mereuta, C., Mereuta, E., *Study on energetical parameters provided by MGM test*, THE ANNALS OF "DUNAREA DE JOS" UNIVERSITY OF GALATI, FASCICLE XV ISSN – 1454 – 9832 – 2010, pp. 35-37

L'influence des parametres somatiques sur les parametres energetiques fournies par le test mgm

Résumé: L'article présente l'influence des paramètres somatiques (taille et poids) d'un groupe de 18 athlètes sur les paramètres énergétiques, fournies par le test MGM. La méthode utilisée pour estimer l'influence est la régression qui prend en compte deux paramètres indépendants (l' hauteur et le poids). Le papier révèle que, considérés ensemble, les deux paramètres somatiques ont une certaine influence sur les paramètres énergétiques, tandis qu'individuellement, leur influence n'est pas significative pour les trois paramètres énergétiques, pour les sauts verticaux sur les deux jambes, sur la jambe gauche et la jambe droite.

Mots-clés: paramètres somatiques, test MGM, paramètres énergétiques.

Influența parametrilor somatici asupra parametrilor energetici furnizați de testul mgm

Rezumat: Lucrarea prezintă influența parametrilor somatici (înălțime și masă) asupra parametrilor energetici furnizați de testul MGM, pentru un grup de 18 sportivi. Metoda folosită pentru a estima influența este metoda regresiei, care ia în considerare doi parametri independenți de influență (înălțimea și masa). Lucrarea arată că, analizați împreună, ambii parametri somatici au o anumită influență asupra parametrilor energetici, în timp ce în mod individual, influența lor nu este semnificativă din punct de vedere statistic pentru toți cei trei parametri energetici.

Cuvinte cheie: parametrilor somatici, testul MGM, parametrilor energetici.

THE EMOTIONAL EDUCATION OF PRESCHOOLERS THROUGH JUDO

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*"Finding the way to reconcile the positive and negative emotions represents the key to releasing the energy for change."
(Michael Fulan)*

Summary: *Young ages constitute the foundation of personality development, the purpose of education being the early intervention in the child's emotional formation and development. The training hall (Dojo) may be a suitable place to fulfill this noble goal, as it is here that the child, far from the daily pressures, enters a stimulating and friendly environment.*

Key words: *emotion, regulation, judo.*

Introduction

Emotion is an individual's state of emotional response. As a response to various modifications of the physical and social environment (sudden noises, somebody showing up), each organism reacts by a normal or increased emotional state, manifested by various signs, such as: blushing, sweat, paleness, increased rate of respiration or heartbeat, etc.

Emotion is the feeling of an individual towards an important event. They may be positive or negative.

- ✓ *Positive emotions* – appear when what a person desires corresponds to what is happening to him (joy, contentment);
- ✓ *Negative emotions* – appear when there is a contradiction between what is actually happening or what is obtained by a person and his expectancies (sadness, discontentment, disappointment, worry, fury, etc.).

Many of the behaviour issues of preschoolers derive from negative emotions and the lack of emotional tuning.

Hypothesis

An emotional strategy modifying negative emotion, not the issue contributing to its occurrence refers to involving children in

recreational activities or activities they like. It is possible that through its means, judo may contribute to the children's emotional tuning.

Aim

The present paper is aiming at finding those emotional strategies whose objectives are not only the solution to the issue triggering the negative emotion, but also the solution to this negative emotion.

Tasks

In the context of today's society where parents have to go abroad to find work, children remain in the grandparents' care from a tender age. More often than not, such children suffer from a lack of affection and are therefore aggressive, rebellious, negative, and disobedient, in a constant mental and physical discomfort with the people around, with unexpected reactions and complex emotional states.

The present paper, based on the study of specialised literature, aims at analysing the various aspects of preschoolers' emotionality, regardless of their family environment, trying to detect the extent to which practising judo may bring benefits in training emotions.

Emotional development in its entirety should be seen in relation to the identification process during the preschool activity.

Table 1 – Characteristics of emotionality during the 3 stages of preschool

Young preschooler (3-4 years old)	Middle preschooler (4-5 years old)	Old preschooler (5 – 6 years old)
<ul style="list-style-type: none"> ✓ Exhibits increases of diffuse affective states; ✓ The child bursts into tears; ✓ laughs out loud; ✓ manifests outbursts of affection, abandonment, and rage; ✓ There are signs of shame, embarrassment, pride and guilt; ✓ identifies and differentiates emotional facial expressions: fury, sadness, fear and joy; ✓ shows affection to family and friends; ✓ has a relaxed attitude and likes to conform; ✓ In all these circumstances the spontaneous expression is gradually influenced by behaviours admitted and rejected in daily life. 	<ul style="list-style-type: none"> ✓ Is characterised by the development of inner life where the complex event occurs as a resonance of real events; ✓ Identifies and differentiates the facial expressions of several emotions such as fury, sadness, fear, joy, shame, pride, guilt, even in the voice tone; ✓ often displays negative behaviour; ✓ starts developing a feeling of insecurity; ✓ needs "controlled freedom"; ✓ starts to find solutions to the problems confronting him on his own; ✓ Feels the need to play with other children, but his relations to them are frequently agitated; ✓ Relations are based less and less on aggression; ✓ learns to share and accept imposed rules; ✓ is capable of expecting a reward; ✓ understands the fact that one event may induce various emotions to different individuals (he is glad because he has won or sad because he has lost); ✓ learns to understand the others' feelings and needs; ✓ Comforts friends in distress; ✓ Shows empathy; ✓ Has clear preferences and dislikes; ✓ The child's states go through extremes, from authoritative to emotional and nervous ; ✓ Complains and whines constantly. 	<ul style="list-style-type: none"> ✓ may identify and name most emotions; ✓ understands that emotions derive from perceptions on certain events; ✓ the terms used to describe emotions increase in quantity and diversity; ✓ becomes capable of having conversations on their inner emotions; ✓ can listen to others on their emotions; ✓ May take into account the situational factors as well, not just the facial expressions (e.g. in order to decipher a "bitter smile"); ✓ Due to the intense language development, may identify and name most emotions; ✓ Empathy is developed, i.e. the ability to understand the emotions of others; ✓ Chooses friends by personality and interests; ✓ Has difficulty in accepting criticism and is emotionally sensitive; ✓ Has the tendency to brag, his being is the centre of the universe; ✓ Wants many items, is rigid and negative, adapts with difficulty and the violent behaviour (rage fits) may re-occur; ✓ Starts developing self-criticism; ✓ Is able to issue his own rules of emotional tuning; ✓ Despite all these, adults remain the main source of emotional guidance

Recent research evinced that not just the mere acquisition of information and as much knowledge as possible leads to a successful individual. A tremendous importance is placed on the emotional factor as well.

Also, the view on education has undergone various changes, even if they are mainly theoretical. Thus, mention has been made to multiple intelligences (Gardner), among which the emotional intelligence. From

this point of view, emphasis is laid on developing those abilities and the potential existing in any child.

Young ages constitute the foundation of personality development, the preoccupation of education to intervene as early as possible in the child's formation and development. The training hall (Dojo) may be a suitable environment to achieve this noble purpose, far away from the agitation and rush of daily

routine, where the child is surrounded by a friendly, stimulating atmosphere.

Judo may successfully solve these problems by means of activities such as competitions, ground confrontation, team games, thus allowing the child to interact with the team members in order to win. In the training process, judo allows the child to freely manifest himself.

The judo trainer working with such children should lay special emphasis on praising them when they manage to complete all the tasks of the training session when they make mistakes, he should not resort to down putting observations, such as "you can't do anything right" or "you are a loser", as these may increase the impression that the mistakes extend to everything they do.

Similarly, practising judo may improve the child's socialisation with other children, his integration into the team and his support by the teammates without the possibility of estranging him or making snide remarks directed at his performance.

Among the advantages of judo are boosting self esteem, lack of fear of mistakes and understanding that nobody is perfect. Judo, through its fighting moments, enables the value scale to be permanently modified, changing from winner to loser and the other way round. The preschooler's emotions and feelings accompany all his manifestations in practising judo, be it during games, competitions, completing the training tasks, occupying an important place in the child's life and exerting a strong influence on his behaviour. The various situations created by all these activities allow the child to control his behaviour, express his emotions through ever subtler ways, learning how to react by socially approved behaviours.

The emotional competence acquired by children means their ability to manage their own emotions, as well as recognising and adapting to the emotions of others.

In order to favour good social insertion and the maintenance of good mental health, the judo trainer plays a major role:

- ✓ *He is the one who has to teach the children to admit what they are feeling;*
- ✓ *He has to get them used to talking about the emotion they are experiencing (it is possible only to the extent to which they arrive at a certain degree of awareness);*
- ✓ *He has to teach them how to dissociate between the inner feelings and the outer expression;*
- ✓ *He has to teach them how to identify an individual's emotion from his outer*

expression in order to provide an adequate response.

Children's involvement in the emotional language within emotional situations has a long-term influence, favouring the development of better abilities in understanding emotions. Drawing the children's attention upon the peculiar aspects of human behaviour makes it possible to develop sensitivity to various emotional expressions, as knowledge about the causes and consequences of emotional behaviour creates a corpus of emotional skills.

Emotional skills designate:

- understanding (identifying the cause of emotions, naming the consequences of emotions)
- expressing (identifying their own emotions, the others' emotions, recognising and transmitting them verbally and non-verbally, distinguishing the emotional state from its outer expression, showing empathy)
- Regulating emotions (using regulating strategies for emotions).

Developing the preschool children's emotional skills is important as it helps in forming and maintaining the relations with others, adapting to collectivity, preventing the occurrence of emotional and behavioural issues.

The teacher/ trainer together with the parents contribute to developing the children's emotional skills through:

- responses to the children's emotions;
- discussions on emotions;
- experiencing his own emotions towards children.

The children's emotional skills may be influenced by:

- ✓ the manner in which the teacher/trainer reacts, which may determine the expression or repression of their future emotions;
- ✓ the emotional expressivity of the teacher/ trainer becomes a role model for the preschool children;
- ✓ The manner in which adults discuss the issues related to emotions may express their support and acceptance, contributing to the child's acknowledging the various emotional states he is going through.

Conclusions

No profession deals with a more precious, complex and sensitive material than the human being under development. Catching a glimpse of the future, the teacher ceaselessly forms, educates, guides, directs, improves, corrects and assesses the process of formation and education of the skills necessary in the

man of tomorrow. The teacher's competence determines the mental and emotional sanity of the future generation.

In the teacher's/trainer's work with the preschoolers in order to accurately identify the emotion in question, these mentors have to learn how to use partial information obtained via the facial expression in order to generate hypotheses about the emotion detected.

Preschoolers may understand emotions expressed by children of a similar age during socialisation, which aids them in managing conflicts. Then, preschoolers are capable of empathic involvement in the others' emotions, and may also express their own emotions in various social contexts in order to minimise the unhealthy effects of negative emotions and to share the positive emotions.

Within the framework of social interactions, the adequate expression of emotions is of utmost importance as it contributes to maintaining the relationships forged and the appurtenance to a group.

The children's inadequate expression of negative emotions through physical or verbal aggression results in their isolation.

The child needs constant monitoring, as well as a varied schedule, containing rest, reading, sports, which can satisfy his multiple requirements: movement, socialisation, recreation, at the same time allowing the adult to detect certain psycho emotional dysfunctions.

Each child is unique and can only be compared to himself. And still, a few things are common: they all need love, security, care and exercise. They all feel the need to be acknowledged and accepted. They all look for support in an adult, as

well as a certain control as they develop their self-confidence and acquire their own experience.

Bibliography

1. Miclea M. – Psihologie cognitivă, Polirom, Iași 1999.
2. Stănescu Monica – Educație fizică pentru preșcolari și școlari mici, Semne 2002.
3. <http://www.stilfeminin.ro/copilul-meu/Emotivitatea-excesiva-la-copii.html>
4. <http://www.afladespre.ro/dezvoltarea-emotionala-la-prescolari-1848.htm>
5. http://www.didactic.ro/materiale-didactice/52552_dezvoltarea-abilitatilor-emotionale-la-prescolari
6. <http://www.romedic.ro/dezvoltarea-sociala-si-emotionala-a-prescolarului-0P16757>

Educarea Emoțională a Copiilor Preșcolari prin Judo

Rezumat: Vârstele mici constituie baza dezvoltării personalității, preocuparea educației de a interveni cât mai devreme în formarea și dezvoltarea emoțională a copilului. Sala de antrenament (Dojo) poate fi un loc potrivit pentru îndeplinirea acestui scop nobil, aici, departe de forfota și apăsarea cotidianului, copilul intră într-un mediu prietenos și stimulat.

Cuvinte cheie: emoție, reglare, judo.

L'éducation Emotionnelle des Enfants Préscolaires par le Judo

Résumé: L'âge petit constitue la base du développement de la personnalité, la préoccupation d'intervenir le plus tôt possible dans la formation et le développement émotionnel de l'enfant. La salle d'entraînement, le dojo peut être un lieu approprié pour ce but noble, là-bas, loin du tumulte quotidien, l'enfant entre dans un milieu amical et stimulant.

Mots clés : émotion, règlement, judo.

EXPERIMENTAL ARGUMENTATION ON THE APPLICATION OF 9 AND 10-YEAR OLD GYMNASTS ARTISTIC TRAINING MODELS - COMPARATIVE ANALYSIS OF GYMNASTS' PHYSICAL TRAINING LEVEL WITHIN THE PEDAGOGICAL EXPERIMENT

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Abstract: The application of the artistic training model within the pedagogical experiment has led to the improvement of the gymnasts motor and artistic training level; all artistic means employed in this research have been contributed systematically to the motor qualities development.

Keywords: motility, expressiveness, amplitude, dynamics, rhythmicity.

Consequently, the test results recorded on motor training testing showed higher values on all tests for experimental group, compared with the witness group, the *t* variable indicating values over the significance threshold ($p < 0.05$).

In order to assess the level of gymnasts physical training - influenced by the artistic training - the following tests were used: standing start high jumps (expansion - explosive force), maintaining the leg above the horizontal