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❖ SPORT AND PERFORMANCE

EFFECTS OF TRAINING DISTRIBUTION ON RECEIVE SKILL LEARNING IN 6 YEARS OLD BOYS AND GIRLS

AZALI ALAMDARI KARIM[1], KASHEF MIRMOHAMMAD[2], DADASHZADEH GHARGARI NOUSHI[1], AHMADI AZHDAR[3]

Abstract

Introduction. the advantage of distributed practice upon massed one is well documented in the context of motor learning; however there is lack of understanding regarded to the preschool children. The rate of learning increase via distributed practice varies with the complexity of the practiced task. Additionally, no study has investigated the effects of training distribution upon children's' skill (receive) learning in real conditions and we have implemented measuring skill transfer rate in playing situation.

Methodology. 24 volunteer healthy nonathletic girls (age: 6.38±0.35 yrs, height: 105.21±7.19 cm, weight: 21.31±2.33 kg) and also 24 boys (age: 6.32±0.41 yrs, height: 110.37±4.56 cm, weight: 21.96±2.48 kg) participated in distributed or massed training protocols within four separated groups(girls or boys with massed or distributed practice) in 12 training sessions after receive scores (based on Olerichk's test subscale) and also skill transfer rate scores(in a local handball like game) was measured at pre test. The massed training was included on 36 repetitions in each session (12 sessions; 3 per week) which was divided into 2 parts each session (18 reps every part) by 2 hours rest in between the parts. The distributed training was similar to the massed one, however; each training part was divided to three 6 repetition subparts by 2 min rest in between them. The acquire test was performed 48 hours after the end of final session and remember test was repeated on one week later. There were also post test for the skill transfer rate at one week after than the final training session. Multivariate ANOVA, Univariate ANCOVA, ANOVA for repeated measurements and paired sample t tests was used to compare the data at statistical significance level equal to 0.05.

Results. There were significant within group differences in all the groups with regard to receive score between learning phases (pre test, acquire, remember phases respectively), however; no advantage was observed for any training distribution order ($P<0.05$). The skill transfer rate (local game score) also had significantly changed in all groups between pre to post test ($P<0.05$). A significant effect was only seen for the sex with regard to the between groups rate of improvements (in between pre to post test) in skill transfer rate ($P<0.05$).

Discussion and Conclusion. The use of both training distribution order has no advantage against together during receive learning for the children in acquire or remember phases. Therefore, the massed protocol could be preferable because of less time requirement. It is proposed to use massed practice for boys and on the other hand distributed practice for the girls, in order to more skill transfer rate to be accomplished to the game/match/play situations. However, more well controlled studies remained to be done because of less evidences is available in this area and the novelty of this context for children researches.

Key words: Receive skill Learning, Children, Training Distribution, Learning Transfer

Introduction

Researchers have published a number of studies that investigate how motor skill learning and memory are affected by the structure of practice. Much of this work was designed to test the schema theory of motor learning; schema theory addresses how motor skills are represented in memory and how the degree of variation in practice influences cognitive and behavioral components of learning.

It has been demonstrated repeatedly that learners whose practice trials are distributed across multiple sessions over the course of two or more days perform better than do learners who practice the same number of trials in one session (massed practice) (T.K. Dail, R.W. Christina, 2004; J.J. Donovan, D.J. Radosevich, 1999; T.D. Lee, E.D. Genovese, 1988; T.D. Lee, L.R. Wishart, 2005; C. H. Shea, Q. Lai, C. Black, J.H. Park, 2000). The benefits of distributed practice over massed practice with continuous motor tasks (i.e., balancing tasks and ski-simulator tasks) have been consistently observed (for meta-analyses, see J.J. Donovan & D.J. Radosevich, 1999; T.D. Lee & E.D. Genovese, 1988). The superiority of distributed practice over massed practice (i.e., tasks that have a clear beginning and end, as with sequences of key presses and golf putting) has been less consistently observed in learning discrete motor tasks.

No well-defined theory exists in the motor learning literature that explains why distributed practice enhances learning more than massed practice, although several researchers have suggested that learning is enhanced by biological processes that occur during rest intervals between practice sessions (T.K. Dail, R.W

[1] Slamic Azad university, Hadishahr Branch, Hadishahr, IRAN.
[2] Faculty of physical education and sport sciences, University of Urmia, Urmia, IRAN.
[3] Slamic Azad university, Urmia Branch, Urmia, IRAN
Email: azalof@yahoo.com
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Christina, 2004; C.H. Shea et al., 2000; P.A. Shewokis, 2003). These biological processes, termed *memory consolidation*, are neurophysical changes that occur in the brain during rest intervals between practice sessions. These changes lead to enhancements in skill performance.

J.J. Donovan, D.J. Radosevich (1999) suggest that the benefits of distributed practice may be mediated by the learners' initial levels of skill on the task to be practiced and also the extent to which distributed practice enhances learning is mediated by task complexity.

In a meta-analysis of 63 experiments that studied the effects of distributed practice on learning, they found that distributed practice enhances learning in tasks of lower complexity to a greater extent than that observed with tasks of higher complexity.

The majority of extant studies have examined distributed practice effects using tasks identified as having low/average mental requirements and low overall complexity (according to Donovan and Radosovich's classification scheme). J.J. Donovan and D.J. Radosevich (1999) also found that optimal rest interval durations exist for tasks of different complexities. Simpler tasks benefit from shorter rest intervals between practice sessions, whereas more complex tasks benefit from longer rest intervals.

Unfortunately, there is lake of information about the effects of training distribution on fundamental skills development in the pre school ages for the boys and girls.

Based on the continuous physical, cognitive or emotional development during this period, different expected motor performance masterkiness level between to sexes and also with regard to the different development pattern in between them, therefore; we speculated whether the results of the existing literature in the adult populations with regard to the effect of training distribution on fundamental skills learning could be generalized to the preschool ages or not.

Moreover, we assessed the effects of training distribution upon the amount of receive skill learning transfer to the real conditions (a local classic game) which can be account as a pioneering work for the future studies.

Methodology

24 healthy sedentary volunteer girls (age: 6.38±0.36 yrs, height: 105.21±7.19cm and weight: 21.31±2.33kg) and 24 boys (age: 6.32±0.41yrs, height: 110.37±4.56cm and weight: 21.96±2.48kg) participated in massed or distributed training sessions after a pre test data collection for both receive skill (based on Olerikh's test subscale for receive in under waist, abdomen and chest levels) and skill transfer to real condition (a local classic game).

The massed training was included on 36 repetitions in each session for 12 sessions (3/week) which was executed in the two parts (18 reps every part) each session by 2 hours rest interval in between. The distributed training was similar to the massed one, however; every training part was divided to three 6 repetition subparts by 2 min rest intervals in between. The subjects were trained separately to avoid observational learning.

The transfer rate measurement (local game) was included on three 2 min game (a handball like game which emphasizes on the count of ball passes between team members within a certain time duration) periods (two people in each team) by 15 min rest in between.

The ratio of the successful receives divided to the total ball passes send from the teammate was recorded as the transfer rate score. The receive skill measurement was repeated at the 48 hours after the last training session (for acquire phases assessment) and one week later (remember test). Post test for the transfer rate was only repeated 48 hours after the last training session.

It should be noted that the tests sessions and the transfer rate game was recorded by high speed camera from thee corners(backward left, forward right and side from 2.5 meters altitude) and the scores were marked later by three different experts(mean score was set as the final score).

It is also of note that at first a consensus letter was signed by the parents and 4 subjects left the study during 2^{th}, 5^{th} and 10^{th} weeks of the study.
Statistical analyze: after assuring normal data distribution order in all the cases, between groups differences in receive scores and transfer rate in pre test was assessed by 2×2 Multivariate ANOVA (2 blocks for the both sex and training distribution) at first. Thereafter, ANOVA for the repeated measurements was used to compare receive scores in three phases (pre test, acquire and remember phases).

The transfer rate scores in pre and post test was also compared using paired sample t test. Finally, the differences observed in receive skill score in between the three phases (between pre test to acquire, pre test to remember, and acquire to remember phases respectively) were compared using 2×2 Multivariate ANOVA.

Additionally, the differences observed in between pre to post test for the skill transfer rate (local game's score) were compared using 2×2 Univariate ANCOVA (performing covariate analyze about the interaction effect). All of the tests were performed with statistical significance level equal to 0.05.

Results:

The subjects' physical characteristic is shown in Table 1.

Table 1: subjects physical characteristics

Group	Weight	Height	Age
Girl Distributed training	21.76±3.01	110.58±6.24	6.36±0.25
Girl Massed training	21.69±3.03	109.3±7.68	6.45±0.26
Boy Distributed training	21.54±3.23	106.27±6.52	6.49±0.31
Boy Massed training	20.86±2.37	106.18±5.75	6.47±0.28

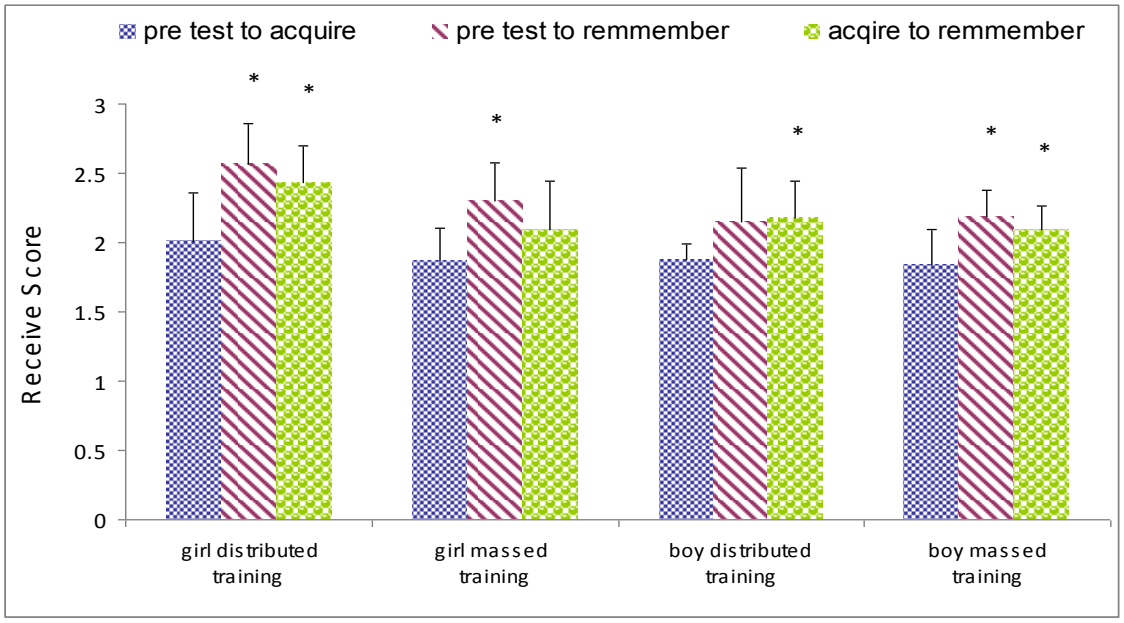
There were no between group differences in receive score or skill transfer rate score in pre test based on 2×2 Multivariate ANOVA (Table2).

Table 2: The results of 2×2 Multivariate ANOVA to compare between groups differences in receive scores and transfer rate in pre test

factor	Score of	df	Mean square	F	sig
sex	Receive (Olerikh test)	1	0.070	1.074	0.306
	Skill transfer	1	0.000	0.166	0.686
Training distribution	Receive (Olerikh test)	1	0.089	1.360	0.250
	Skill transfer	1	0.001	1.053	0.311
Interaction of the sex With training distribution	Receive (Olerikh test)	1	0.027	0.420	0.521
	Skill transfer	1	0.006	7.281	0.010 *

*: significant difference ($p<0.05$).

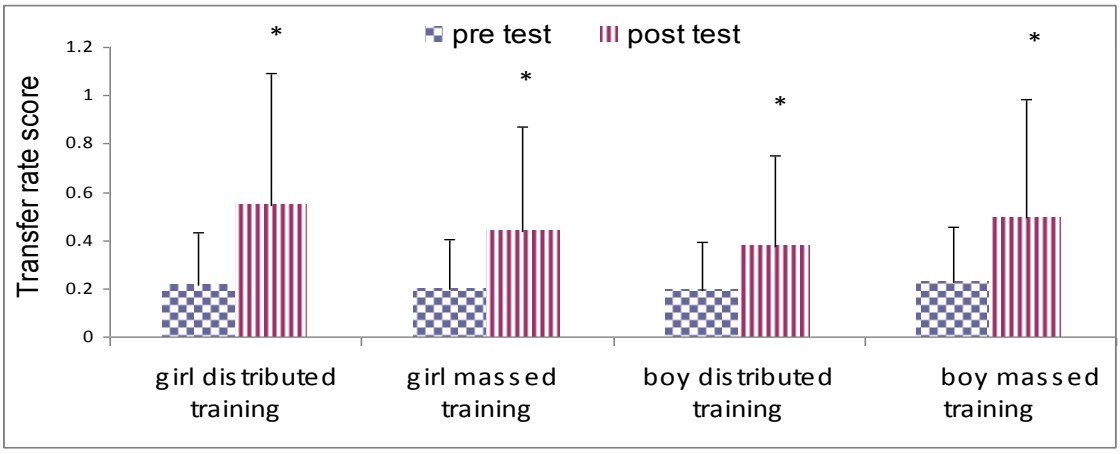
However, significant interaction between sex and training distribution with regard to the skill transfer rate forced us to use it's values in pre test as a covariate factor for the comparison(Table3) of between groups' differences observed in between three phases of the training(between pre test to acquire, pre test to remember, and acquire to remember phases respectively) Significant within group differences was observed in receive score in between three phases of the training based on ANOVA for repeated measurements (Fig 1).



*: Significant difference with regard to pre test in the same group according to ANOVA for repeated measurements ($P<0.05$).

Figure 1: the receive score in each group during three phases.

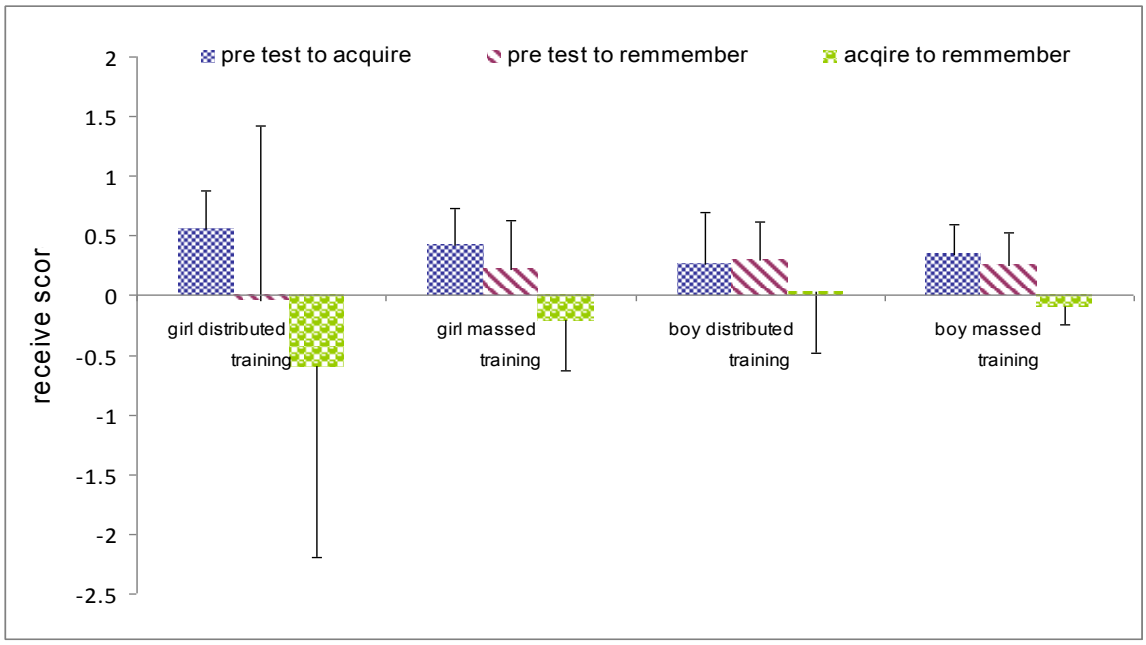
There were also significant within group differences in the skill transfer rate score in between pre test to post test (Fig 2).



*: Significant difference with regard to pre test according to paired sample t test (P<0.05).

Figure 2: The transfer rate scores of each group in pre and post test

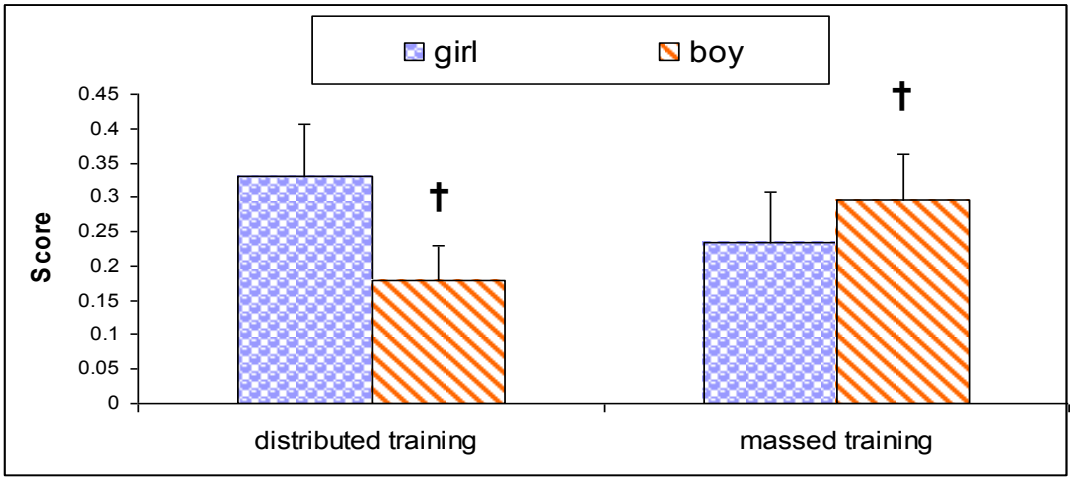
No significant between group differences was observed for the amounts of differences observed in receive score in between three phases of the training (Fig 3).



No significant difference observed based on 2×2 Multivariate ANOVA.

Figure 3.Each group's receive scores differences in between the phases

Finally, the differences observed in between pre to post test for the skill transfer rate were compared using 2×2 Univariate ANCOVA considering skill transfer rate score at pre test as a covariate factor(Table 3). Figure 4 shows that in the massed practice the rate of transfer was higher in boys and in the distributed one, the girls have had more improvements



†: Significant differences with regard to the girls according to Multivariate ANOVA ($p<0.05$).

Figure 4: The differences of each group's transfer rate scores between pre to post test

Table 3: The results of 2×2 Univariate ANCOVA to between group compare the differences observed in between pre to post test for the skill transfer rate

factor	df	Mean square	F	sig	Post hoc in between	Mean difference	sig
sex	1	0.040	8.041	0.007 *	Boy-girl	0.054±0.022	0.007 *
Training distribution	1	0.001	0.028	0.867	-	-	-
Interaction of the sex with training distribution	3	0.004	0.832	0.485	-	-	-
Sex × skill transfer rate in pre test	1	0.004	0.882	0.354	-	-	-
training distribution × pre test Skill transfer rate	1	0.002	0.309	0.582	-	-	-
Sex × training distribution × pre test Skill transfer rate	1	0.00	0.026	0.873	-	-	-

*: significant difference ($p<0.05$).

Discussion

The amount of the differences in receive skill transfer rate (score) between pre test to post test was not differed between distributed by massed training which was in contrary by the previous literature. Most of the human motor learning studies have shown that the training distribution can provide more improvements in motor performance specially 24 hours after the end of the training in comparison with massed training (T.K. Dail, R.W. Christina, 2004; J.J. Donovan, D.J. Radosevich, 1999; T.D. Lee, E.D. Genovese, 1988; T.D. Lee, L.R. Wishart, 2005; C. H. Shea, et al., 2000). It seems that these non significant differences between distributed and massed training groups can be explained by the learners (6 years old boys and girls) similar masterkiness in receive performance and development rate. It should be noted that there were no differences in receive scores based on Olerikh's criteria in pre test. Therefore, this finding is in line with the results of J.J. Donovan & D.J. Radosevich (1999) which have reported benefits of distributed practice may be mediated by the learners' initial levels of skill on the task to be practiced. Moreover, according to the other results of J.J. Donovan, D.J. Radosevich (1999) which have showed the extent to which distributed practice enhances learning is mediated by task complexity, it seems that because of the difficulty of the receive skill for 6 years old children, the rest intervals between distributed practice in this study probably would not sufficient to provide significant differences between massed by distributed practices. Therefore, identification of the most appropriate rest periods in between distributed practice protocols to provide the best improvements in performance remains to be done in the future studies.

On the other hand, there were no significant differences between groups regarded to receive score observed in between acquire to remember phases. In an effort to explain *why* distributing practice across time enhances performance skill and memory more than massed practice, researchers in human movement have drawn upon explanations first proposed by psychologists (for reviews, see H.A. Lechner, et al., 1999; J.L. McGaugh, 2000), which suggest that enhancements in performance are behavioral manifestations of neurophysical changes in the brain

during rest intervals between practice sessions. These biological processes, identified as *memory consolidation*, have yet to be clearly defined; however, it is now widely accepted that acquiring new motor skills and forming memories for those skills elicit structural and functional reorganization in the brain (M.P. Walker, R. Stickgold, 2006). A time course for skill acquisition and memory consolidation has been consistently demonstrated in neuroscience literature that examines simple motor skill acquisition and performance in a population of learners who have no prior experience with the task they are asked to learn.

Observed patterns of neural activity change over time as learners engage in skill acquisition. Learners experience a rapid improvement in skill execution when they first engage in practice of a new motor skill (S. Fischer, et al., 2002; A. Karni et al., 1998; M. Korman, et al., 2003; M.P. Walker, et al., 2003). As these rapid improvements occur, neural activity that guides motor activity is modified (A. Floyer-Lea, P.M. Matthews, 2005). Neurons that fire together during repeated practice of a new motor skill begin to fire together more easily so that existing pathways become readily activated as practice continues (A. Karni et al., 1998; J.A. Kleim et al., 2004; M.P. Walker, 2005). Rapid improvements level off during acquisition practice, and performance gains are incremental by the end of the session. The refined pattern of neural activation that emerges at this point comprises a neural representation of the newly acquired motor skill. Changes in memories for newly acquired skills occur when learners are not actively engaged in practice. Practice triggers the onset of memory consolidation, but the process continues after practice has ended (A.R. Luft, M.M. Buitrago, 2005). Memory consolidation is thought to occur in two stages (M.P. Walker, 2005): the first stage, *consolidation-based stabilization*, modifies neural representations of motor skills in ways that make memories resistant to interference and forgetting; the second stage, *consolidation-based enhancement*, yields enhancements in motor performance and memory.

Consolidation-based stabilization typically occurs in the wakeful hours immediately following practice. Wake-based consolidation makes memories resistant to interference from competing tasks (e.g., engaging in motor activity nearly identical to practiced tasks) and maintains performance gains achieved during acquisition (S. Fischer et al., 2002; C. Hotermans, et al., 2006; E.M. Robertson, et al., 2004). The process of wake-based consolidation typically lasts up to four to six hours after active practice has ended. If this process is interrupted, performance of newly acquired skills can be impaired and their memories compromised. Current theory suggests that consolidation-based stabilization is characterized by intermittent occurrences of task-related neural activity and by early protein synthesis in the brain (P. Peigneux et al., 2006). Imaging studies have demonstrated that brain activity during skill acquisition is different from patterns of brain activity elicited when skills are recalled after consolidation-based stabilization has occurred, which suggests that the memories for new skills are modified subsequent to active practice. Consolidation-based enhancement depends on the chemical processes of sleep.

Sleep-based consolidation enhances memories for newly acquired skills so that performance is significantly improved when skills are recalled. In other words, sleep enhances simple motor skill performance in the absence of additional practice (T. Brashers- Krug, et al., 1996; R.A. Duke C.M. Davis, 2006; S. Fischer et al., 2002; S. Fischer, et al., 2005; C. Hotermans et al., 2006; A. Karni et al., 1998; M. Korman et al., 2003; K. Kuriyama, et al., 2004; P. Maquet et al., 2003; S.C. Mednick, et al., 2003; E.M. Robertson, et al., 2005; A.L. Simmons, R.A. Duke, 2006). The chemical processes of sleep are thought to "clean up" neural activity that occurs during acquisition; in other words, processes that occur during sleep disengage neural networks that were active during acquisition but are not essential for optimal task performance (J.H. Benington, M.G. Frank, 2003). Once again, it is clear that memories continue to be encoded and modified after practice has ended in ways that enhance performance when skills are recalled. However, our result showing no significant differences between groups in between massed and distributed practice training regarded to receive skill performance challenges the aforementioned explanations. It seems that the data processing pattern in between the rest and sleep periods in children are different by those in the adults. It was reported there is disengagement in neural networks that were active during acquisition but are not essential for optimal task performance during sleep periods in the adults which leads to improve task performance. However, no straight measurements was done about the children and it certainly warranted to be determined in the future studies whether the sleep data processing pattern in the children is similar to adults or not.

Additionally, it is reported that the performance - enhancing contribution of the different sleep stages seems to depend on the degree of novelty of the motor task, and on a person's learning history and level of expertise. When a task appears to be completely new and unfamiliar, until the basic task requirements are met by the learner predominantly processes associated to REM sleep are required. Further optimization (i. e. "fine - tuning") of the respective task, or acquisition of a skill similar to a previously learned one, do not require REM sleep any more, since the basic movement pattern in question already has been established. Any further improvements instead are linked to stage 2 sleep now, where they are specifically associated with the occurrence of high frequency "sleep spindles" (K.R. Peters, et al., 2007; C.T. Smith, et al., 2004).

Therefore, it seems that probably one reason for non significant differences observed between

distributed and massed training upon receive skill learning in 6 years old children, could be explained by executing both type of the training within a day (without night sleep). So, it is speculated that we could be expect different results by distributing training blocks within multiple days (instead of short resting periods). Accordingly, T. Dail (2002), have reported distribution of Golf practice in 4 consecutive days provide better results than massed training in a single day. However, according to less evidences available with regard to the distribution of practice for children (not adults) in multiple days, more conclusive works certainly remained to be done in this area.

Our most interesting finding was that sex had significant effect on the amount of improvements in skill transfer rate (Local classic game score) in between pre to post test. Another interesting finding was that in spite of this fact that training distribution and it's interaction by the sex had not significant effect on skill transfer rate, in the girls the amount of improvements in distributed training was more. However, in the massed training, the boys had showed more improvements. It should be noted that unfortunately no standard test in available to measure the rate of receive skill transfer within real conditions. In this study, we used a local classic game (a modified handball) based on the experts advice. I this game because of real competitive condition, the count of total balls passed to each individual and the situation of receive (dependent on the counterpart's pressure) would not necessarily be the same for every subject which could affect the final results. Therefore, it seems that well controlled studies (by applying the standard or valid tests) should be done in this context. Consequently, this finding suggests that the amount of transfer rate improvement in during distributed or massed training is inclusive for each sex group. However, because we didn't measure the skill transfer rate in acquire phase, it seems that such a data in the future studies could be more beneficial.

In conclusion, based on our results administration of distributed training for receive skill learning in children has no advantage on massed training during acquire or remember phase. Therefore, the massed training likely be preferential according to its less time requirements. Additionally, massed training protocol recommended for the boy against distributed training for the girls to more skill transfer rate to the real game conditions to be accomplished. However, because of less straight evidences available in this area more conclusive studies remained to be done.

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THE EFFECT OF ACUTE MAXIMAL AEROBIC EXERCISE ON BLOOD LIPID PARAMETERS ON HEALTHY MALES AND FEMALES

BAYDIL BİLGEHAN[1], MELEKOGLU TUBA[1], OCAL DEFNE[1]

Abstract

Purpose : The aim of the present study was to examine the effect of acute maximal aerobic exercise on blood lipid parameters on healthy males and females.

Methods : The heights, weights, resting hearth rates and blood samples of subjects were taken before the exercise. The subjects warmed up for ten minutes before they had 20 m shuttle run test protocole until exhaustion. The blood samples were taken before and immediately after the exercise for analizing triglyceride, high density lipoprotein (HDL), low density lipoprotein (LDL), total cholesterol. Statistical evaluation was conducted using SPSS 13 software program. The Wilcoxon Signed Rank Test was used for determine the differences within groups and Mann-Whitney U Test was used for beetwen groups results at a significance levels of $p<0.05$ and $p<0.01$.

Results : In conclusion, our study demonstrates that acute aerobic exercise has benefical effects on the blood lipid profile.

Keywords : Total Cholesterol, Triglyceride, HDL, LDL, Acute Aerobic Exercise

Introduction

The role of lifestyle change with regard to diet, weight control, and physical exercise is becoming more important in today's health care of chronic disease. These can be vastly important in management of abnormal blood lipids and lipoproteins. Indeed, with appropriate dietary discretion, weight control, and physical activity/exercise, standard drug therapies may be used at lesser dose levels and, in some instances, totally discontinued.

Major risk factors for cardiovascular diseases include hypertension, smoking and elevated levels of serum total or LDL-cholesterol, as well as low levels of HDL-cholesterol. Moreover, there is consistent, substantial and strong evidence that physical inactivity is a major health determinant for developing cardiovascular disease (C. Pitsavos, 2009).

Cardiovascular disease (CVD) is the leading cause of death worldwide. Low blood levels of high

[1] Department of Physical Education and Sport, Kastamonu University, TURKEY
Email: bilgehanbaydil@hotmail.com
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density lipoprotein cholesterol (HDL-C) are an independent risk factor for CVD. Cross-sectional data provide strong evidence that people who are more physically active have higher HDL-C levels. Thus, the value of regular aerobic exercise in increasing serum HDL-C level and in reducing the risk of CVD have received widespread acceptance (S. Kodama, 2007).

Comparisons between intensities of aerobic exercise programs resulted in favorable effects only for high intensity. The most frequently observed alteration was an increase in the high-density lipoprotein cholesterol, whereas reductions in triglycerides, total cholesterol, and low density lipoprotein cholesterol appeared less often (K. Tambalis, 2009).

To increase our understanding of the chronic effects of physical training on serum or plasma lipids, lipoproteins and apolipoproteins, it is important to study the acute effects of a single bout of exercise on these parameters.

The aim of the present study was to examine the effect of acute maximal aerobic exercise on blood lipid parameters on healthy males and females.

Materıal and method

Selection of Participants

The study included 8 male (mean age, 22.25 ± 1.49 years) and 7 female (mean age, 19.87 ± 1.45 years) subjects who did not actively exercise. It's determined that male's and female's with the mean age of 22.25 ± 1.49 years and 19.87 ± 1.45 years, average antropometric measurements are as follows (Table1) height of 177.62 ± 1.87 cm, 161.87 ± 3.18 cm, weight of 74.97 ± 3.32 kg, 57.91 ± 7.33 kg, respectively. All subjects were informed about the purpose and procedures of the study. For the standardize dietary, subjects were asked to obey dietitians advisement before exercise 3 days ago.

Study Design

The heights, weights, resting hearth rates and 5 cc. venous blood samples of subjects were taken before the exercise.

The subjects warmed up for ten minutes before they had 20 m shuttle run. The purpose of this test was to tire the subjects to the exhaustion. The heart beat rates were measured at the end of the test in order to determine the exhaustion levels of the participants.

The 5 cc. venous blood samples were taken again just after the exhaustion exercise.

Physical and Physiological Measurements

Measurement of height and weight

The height and weight variables were measured 1 hour before the exercise. The weight of subjects were meausered by an electronic scale in minimal clothing. The height measurements were determined with metric scale.

Measurement of resting hearth rate

The resting hearth rate of subjects were taken on sitting position with stethoscope and chronometer after 20 min. resting period before 1 hour exercise.

Collection of the blood samples

The blood samples of the subjects were taken preexercise and post exercise. The first blood sampless were drawn on resting and sitting position before 15 min. the start of exercise. The second blood sampless were drawn immediately after the fatiguing exercise on sitting position. 5 cc. Blood sampless were obtained from forearm antecubital vein into heparinazed tubes.

Statistics

Statistical evaluation was conducted using SPSS 13 software program. The Wilcoxon Signed Rank Test was used for determine the differences within groups and Mann-Whitney U Test was used for beetwen groups results at a significance level of $p<0.05$ and $p<0.01$.

Results

Table 1. Some of physical and physiological parameters of the participants

	Male		Female	
Parameters	**N**	**M±SD**	**N**	**M±SD**
Age (year)	8	22.25±1.49	7	19.87±1.45
Height (cm)	8	177.62 ±1.87	7	161.87±3.18
Body Weight (kg)	8	74.97 ±3.32	7	57.91±7.33
Resting Hearth Rate(beat/min.)	8	79.00±3.68	7	78.25±7.36
Max VO_2 (mL.kg/min)	8	48.24±1.52	7	33.67±4.26

M, average; SD, standard deviation, N, number of subjects

Table 2. The comparisons of the male participants average blood lipid parameters in pre and post exercise

Parameters	**N**	**Pre exercise**	**Post exercise**	**%**	**Z**
		M±SD	**M±SD**		
Total Cholesterol (mg/dl)	8	163.62 ± 21.30	141.12 ± 19.54	-13.75	**-2.521***
HDL (mg/dl)	8	56.87 ± 6.10	56.37 ± 5.55	-0.87	-0.423
LDL (mg/dl)	8	55.25 ± 36.40	45.37 ± 23.83	-17.88	-0.840
Triglyceride (mg/dl)	8	258.12 ± 119.37	197.00 ± 74.66	-23.67	**-2.521***

$P<0.05^{*}$ $P<0.01^{**}$

Table 3. The comparisons of the female participants average blood lipid parameters in pre and post exercise

Parameters	N	Pre exercise	Post exercise	%	Z
		M±SD	M±SD		
Total Cholesterol (mg/dl)	7	152.28 ± 26.29	143.14 ± 30.70	-6.00	-1.693
HDL (mg/dl)	7	72.00 ± 6.42	72.14 ± 6.96	+0.19	-0.316
LDL (mg/dl)	7	53.42 ± 14.60	49.28 ± 23.09	-7.74	-0.845
Triglyceride (mg/dl)	7	134.14 ± 82.29	108.28 ± 59.63	-19.27	-1.778

$P<0.05^{*}$ $P<0.01^{**}$

Table 4. The comparisons of the female and male participants average blood lipid parameters in pre exercise

Parameters	N	Males	Females	Z
		M±SD	M±SD	
Total Cholesterol (mg/dl)	15	163.62 ± 21.30	152.28 ± 26.29	-1.504
HDL (mg/dl)	15	56.87 ± 6.10	72.00 ± 6.42	**-3.014****
LDL (mg/dl)	15	55.25 ± 36.40	53.42 ± 14.60	0.000
Triglyceride (mg/dl)	15	258.12 ± 119.37	134.14 ± 82.29	**-1.967***

$P<0.05^{*}$ $P<0.01^{**}$

Table 5. The comparisons of the female and male participants average blood lipid parameters in post exercise

Parameters	N	Males	Females	Z
		M±SD	M±SD	
Total Cholesterol (mg/dl)	15	141.12 ± 19.54	143.14 ± 30.70	-0.812
HDL (mg/dl)	15	56.37 ± 5.55	72.14 ± 6.96	**-3.249****
LDL (mg/dl)	15	45.37 ± 23.83	49.28 ± 23.09	0.347
Triglyceride (mg/dl)	15	197.00 ± 74.66	108.28 ± 59.63	**-2.083***

$P<0.05^{*}$ $P<0.01^{**}$

Discussion and conclusions

We examined the effect of acute maximal aerobic exercise on blood lipid parameters on healthy males and females.

We found reductions on total cholesterol (%13.75, P<0.05) and triglycerides (%23.67, P<0.05) values pre and post acute aerobic exercise on boy subjects. No significant reductions were noted for blood concentrations of HDL-C (%0.87) and LDL-C (%17.88) pre and post exercise.

When comparing the pre and post measurements of males and females, significant differences were observed in high-density lipoprotein cholesterol (P<0.01) and triglyceride (P<0.05) levels.

Endurance exercise may influence blood lipid profiles by altering intravascular enzyme activities. Increased lipoprotein lipase activity (LPLA) and decreased hepatic triglyceride (TG) lipase activity (HLA) have been noted after exercise training. In addition, increased lecithin-cholesterol acyltransferase (LCAT) activity (LCATA) and reductions in cholesterol ester transfer protein (CETP) concentrations have been reported. Elevations in LPLA or LCATA with endurance training may reduce TG and reciprocally increase HDL-C. Additionally, reduced HLA or CETP, allowing slowed catabolism of HDL particles with endurance training, may enhance the overall accumulation of cholesterol in HDL subfractions. These favorable effects of exercise may contribute to an improvement of the lipid profile (F.S. Lira, 2009).

Y.E. Tsekouras et al. examined the effect of high intensity intervals of aerobic training on very low density lipoprotein (VLDL) - TG secretion in sedentary young men (n : 7) and a nonexercising control group (n : 8). They observed that subjects who had trained by running on the treadmill for 8 weeks at 90% VO^2peak had a reduced rate of VLDL-TG secretion (by ~35%, $P \leq 0.05$), suggesting that a short period of high-intensity interval aerobic training lowers the rate of VLDL-TG secretion by the liver in previously sedentary men (Y.E. Tsekouras, 2008).

S.L. Fava et al. measured acute changes in lipid, lipoprotein, apolipoprotein and low-density lipoprotein particle size 6 to 12 hours before and immediately after an endurance triathlon in 34 male and 6 female. They reported that plasma triglyceride (TG) decreased significantly (%70 decrease) in both men and women. A significant increase in HDL cholestrol was observed in both men (%18 increase, P < .0001) and women (%5 increase, P < .01). LDL particle size increased in seven males, whereas in the remaining males and all females no change in LDL size was obserwed (S.L. Fava, 1989).

Lira et al. examined the effects of acute, high-intensity exercise and varying carbohydrate levels

(control, low and high) on the blood lipid profile. Six male subjects were distributed randomly into exercise groups, based on the carbohydrate diets (control, low and high) to which the subjects were restricted before each exercise session. Total cholesterol and LDL cholesterol were reduced after the exhaustion and 1 h recovery periods when compared with rest periods only in the control carbohydrate intake group ($P<0.05$). They did not observe changes in TG and HDL-C concentrations (F.S. Lira, 2009).

S.F. Crouse et al. investigated that short term changes in blood lipid concentrations after high intensity and moderate intensity exercise in men with high cholesterol. Significant changes ($P < 0.001$) were as follows : total and low-density lipoprotein cholesterol fell by 4% immediately after exercise and then rose by 5-8% by 48 h. Triglycerides were 18% and 15% lower 24 and 48 h. respectively. HDL cholesterol rose 8-9% by 24 h and remained elevated (S.F. Crouse, 1995).

In the study conducted by M.A. Ferguson and his friends, it was found that 11 active male subjects, LDL cholesterol and total cholesterol concentrations decreased immediately after treadmil exercise at %70 of maximal fitness. There were also exercise induced increases in HDL cholesterol concentrations immediately after exercise (M.A. Ferguson, 2003).

D. H. Park and J.W. Ransone investigated acute high-density lipoprotein-cholesterol (HDL) changes in 18 healthy college aged-men completing two-counterbalanced running trials at different exercise intensities: trial 1 at 70 % lactate threshold (LT) (372.5 ± 28.9 kcal); trial 2 at LT intensity (365.9 ± 75.9 kcal). For each trial, blood samples were collected at pre-exercise (baseline), 15 min post-exercise (15 m PE) and 24 hours post-exercise (24 h). In assessing the lipid variables, the significant increase in HDL ($p < 0.05$) at the 24 h was due to the increase in both HDL_2 and HDL_3. The increase in 15 m PE TC at the LT intensity occurred while the decreases in 24 h TG and VLDL concentrations at the LT intensity occurred at different time periods, respectively. These decreases in the concentrations of TG and VLDL were significantly different, contributing to change in 24 h HDL concentration. Consequently, the LT intensity might appear to be the threshold intensity of acute aerobic exercise (expending 350 kcal) necessary to promote a significant increase in HDL (D.H. Park, 2003).

Ferguson et al. determined the threshold of exercise energy expenditure necessary blood lipid and lipoprotein concentrations and lipoprotein lipase activity in healty trained 11 men. They reported a reduction in triglycerides (TG) and LDL-C concentrations and an increase in HDL-C concentrations 24 h after exercise sessions at 70% VO2max and with energy expenditures higher than 1.100 kcal (M.A. Ferguson, 1998).

Lennon et al. studied 28 subjects (14 males and 14 females) during bicycle exercise for 14 min at a work intensity of 55% of their maximal oxygen consumption. Total and HDL-cholesterol levels were measured (and LDL-cholesterol calculated) at rest, 10, 20, 30, and 40 min of exercise, and 15 min postexercise. There was a significant ($p < 0.001$) increase in HDL-cholesterol levels at 10 min of exercise (58.8 ± 13.9 mg/dl, mean ± SD) above rest (53.1 ± 13.4 mg/dl) for all subjects. This increase persisted ($p < 0.001$) at all time points throughout the exercise session, but declined by 15 min postexercise. There was a small, insignificant decline in LDL-cholesterol (D.L.F. Lennon, 1983).

Ozhan et al. investigated levels of HDL-C, LDL-C, VLDL-C, total cholesterol and triglyceride following an exercise in 20 volunteer males participated in their study, age ranged from 19 to 20 years. For blood analyses, 3ml blood sample was obtained from antecubital vena before the test and the test was begun with a 600 kpm overload. The exercise was loaded at 300 kpm in every 3 minutes, and bicycle pedal freguency was 60 rpm. The test was ended when the subjects came to the point of exhaustion; blood samples were obtained and heart impulses were recorded. Following 5 minutes rest, the same measurements were repeated. According to the data obtained from the analysis of blood samples soon after the exercise, the level of serum HDL-C was significantly increased ($p<0.05$). A decrease in the level of LDL-C was observed but it was not statistically significant ($p>0.05$). There was no significant difference in serum: cholesterol and triglicerid levels ($p>0.05$) (E. Ozhan, 2000).

P.D. Thompson et al. examined acute effect of a single prolonged exercise on serum lipids in 12 trained male runners. Serum TG levels unchanged up to 4 h after the race, but 18, 42 and 66 hr mean reductions of 65%, 39% 32% were observed. Total cholesterol concentration didn't change immediately after exercise, but unexpected significant reductions of 6%-10% were found at 4-66 hr. Only small and transient increases in HDL cholesterol levels were noted after exercise. As a result they suggest that prolonged exercise acutely lowers TG and total cholestrol, but has little effect on HDL mass (P.D. Thompson, 1980).

Datas of males were consistent with most of study results.

Results of exercise training studies in women are inconsistent, with some of these reporting beneficial effects on lipids and with others reporting the opposite or simply no change at all.

The female subjects average total cholesterol (%6), triglycerides (%19.27) and low density cholesterol (%7.74) concentrations decreased immediately after the exercise, insignificantly. There was a small, insignificant increase in high-density lipoprotein cholesterol (%0.19).

Grandjean et al. investigated the influence of a worksite aerobic training program on serum lipid and lipoproteins and cardiovascular fltness in female

employees. Thirty-seven healthy but previously untrained, female employees volunteered for the study. Subjects were randomly assigned to either an exercise group (Ex) (n = 20) or control group (C) (n = 17). Following PRE testing, the Ex group aerobically trained by walking, jogging and/or cycling, at least 3 days per wk for 24 wks. Their study's results demonstrate that aerobic training by females in a worksite fitness program significantly improves cardiovascular fitness without altering lipids or lipoproteins (P.W. Grandjean, 1996).

In the study conducted by Ready et al. examined the effect of walking volume on aerobic fitness, serum lipids, and body composition in women post-menopause, a population at risk for coronary artery disease. 56 women participants walked at an intensity of 60% peak oxygen uptake ($\dot{V}O_{2peak}$) for 60 min, 3 $d \cdot wk^{-1}$ (N = 19) or 5 $d \cdot wk^{-1}$ (N = 17), or remained sedentary(N = 20). They obserwed no changes in serum lipids in response to either program (A.E. Ready 1996).

Pronk et al. evaluated the acute effects of walking performed of fairly light (50% VO_{2max}) and moderate (70% Vo_{2max}) intensities on serum lipids and lipoproteins in a group of premenopausal (n=11) and a group of postmenopausal (n=10) women. All subjects walked on a motor-driven treadmill at each respective intensity of exercise for a total duration sufficient to expend 350 kcal of energy. Blood samples were obtained at baseline (pre-exercise), immediately post-exercise (IPE), and at 24 hours and 48 hours post-exercise. They found that a single bout of walking has the potential to acutely affect the blood lipid profile of premenopausal as well as postmenopausal women. Immediately following a walk performed at 70% VO_{2max}, reduction in TC and LDL-C was noted for both groups of women. Furthermore, an IPE increase in TG ($p<0.05$) was observed (N.P. Pronk, 1995).

Goodyear et al. examined the immediate and delayed effects of prolonged strenuous exercise on plasma lipid and lipoprotein concentrations in female runners. Venous blood samples were collected from 12 female runners 24 h before, 10 min after, and 1, 3, and 5 d after running a 42 km marathon. Total cholesterol concentrations were significantly reduced 1 d following the exercise and were still lower 3 and 5 d post-marathon. LDL-C was lower immediately and 1 d after the marathon. HDL-C concentrations, corrected for changes in plasma volume, were elevated 24 h post-exercise. Triglyceride concentrations were elevated immediately following the marathon but returned to baseline levels by 24 h post-exercise (L.J. Goodyear, 1990).

Ginsburg et al. determined the effects of a single bout of ultraendurance exercise on blood lipids in highly trained athletes. Thirty-nine volunteer subjects (26 men, 13 women; mean age, 38±10 years) who competed in and completed competiton triathlon. Subjects had blood samples obtained 2 days prior to and within 15 minutes of completion of the triathlon. With exercise, plasma volume corrected levels of triglycerides decreased 39% from 1.58±0.83 to 0.97±0.68 mmol/L (139.6±73.6 to 85.8±60.5 mg/dL) (P<.001). Levels of total cholesterol decreased 9% from 4.94±0.88 to 4.50±0.79 mmol/L (190.8±33.8 to 173.8±30.6 mg/dL) (P<.001), low-density lipoprotein cholesterol decreased 11% from 2.59±0.77 to 2.30±0.86 mmol/L (100.1±29.9 to 88.7±33.3 mg/dL) (P=.02). High-density lipoprotein cholesterol increased with exercise but not significantly (G.S. Ginsburg, 1996).

Subası et al. examined influences of acute resistance and aerobic exercises on plasma homocysteine level and lipid profiles. Fifty one healthy subjects, aged 21.76 ± 2.73 years old, were included the study. The subjects were divided into three groups as aerobic exercise(AE) group (10 female, 8 male), resistance exercise (RE) group (11 female, 9 male) and control (CT) group (8 female, 5 male). They found that TG level decreased after acute aerobic exercise. They also found that levels of Total-c and LDLc, HDL-c did not change immediately after both acute resistance and acute aerobic exercise (S.S. Subası, 2009). These values are similar to our study results.

Weise et al. investigated effects of cholesterol status on blood lipid, lipoprotein lipid, and lipid regulatory enzyme responses to a single session of aerobic exercise in physically active, postmenopausal women. In this study, blood samples were obtained from 12 women with high cholesterol (HC; _200 mg/dl) and 13 women with normal cholesterol (NC; _200 mg/dl), 24 h before (Pre), immediately after (IPE), and 24 and 48 h after an exercise session (treadmill walking at 70% peak oxygen consumption, 400 kcal). They found that blood lipid and lipoprotein lipid concentrations at the IPE, 24 HR, and 48 HR time points did not depend on preexercise cholesterol status of the women. For both groups, triglyceride was significantly reduced (-8.5%) after exercise. The average HDL-C concentration was lower at the IPE time point, but it rose 5% by 24 HR to return to the preexercise value. No significant changes over time from preexercise values were noted for blood concentrations of TC, LDL-C (S.D. Weise, 2005).

In the study conducted by H. Imamura and his friends, examined the effects of moderate exercise on serum lipids, lipoproteins and apolipoproteins in seven sedentary young women under controlled conditions. The subjects exercised on separate days for 30 or 60 min at an intensity of 60% of maximal oxygen uptake on a cycle ergometer. Total cholesterol, triglycerides, high-density lipoprotein–cholesterol (HDL-C), HDL_2-C, HDL_3-C, low-density lipoprotein–cholesterol, apolipoproteins A-I, A-II and B were measured in the serum at the end of the 60 min rest period before each exercise, immediately after the performance of each exercise and at 30 min and 1, 2 and 24 h after each exercise. The results showed that there were no significant differences between the pre- and

postexercise samples for any of the parameters tested (H. Imamura, 2000).

In conclusion, these results indicate that acute aerobic exercise can induce acute beneficial modifications on blood lipid profiles in males. But when investigated the females results insignificant values were observed. There were a lot of inconsistent study results in women. According to our data, gender may influence the acute lipid response to exercise.

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IMPROVE SPECIFIC EFFORT AMONG YOUNG HANDBALL PLAYERS - JUNIOR III

CAZAN FLORIN[1], NEGREA VALENTIN[1]

Abstract
Purpose: This paper tries to make a material contribution to the enrichment method that we have available to those who have chosen the beautiful mission to initiate in the mysteries of handball, youth school - junior level III (12-14 years), the learn the specific movements of the game as close to game conditions and the burden to the specific requirements of the game of handball.
The main purpose of the paper is to demonstrate the usefulness of a model of physical training in the training specific to the junior echelon III mass base handball performance.
Methods: We will submit to the research hypothesis by experiment to achieve superior results, so an effective preparation using drive systems.The idea behind the model to find the right way claiming the smallest amount of time, energy and investment, but also have the highest efficiency.
Calibration of the inventory of assets and proceeds from their ranking according to the result of co-participation sport.

Results: Correct interpretation of the results of screened subjects is the most important step in assessing efficiency, learning efficiency in the 2 groups. We used data obtained Statistical-mathematical calculating statistical indicators. I mention that the material presented, representing performance figures were determined by the particular nature of the club and the specific groups that the experiment was conducted. Social environment, the physical and situation may affect the value of performance achieved during the experiment.
Conclusions: Easy to get, flexibility, coordination and relaxation of movement, will introduce specific exercises to develop skill in terms of physical demands and mental strain. Choosing and using largely exercises are recommended for general physical training and exercises some cyclical high demand, raising the potential for functional (respiratory and cardiovascular) of players.
Keywords: capacity for effort, improvement, young handball players

Introduction

We chose this subject because the value of a player for handball sport lies largely, of the qualities that you instruct it being included in their scope and potential of the Junior Driving on the basis of which the shape and refine the principles and skills required content development and technical-tactical, team-specific position [T. Bompa, 2001].

Without diminishing the importance of technical and tactical training in handball required noted that what determines the level at which the processes and actions are executed by players is the composition of specific physical.

Reasearch objective

We will submit to the research hypothesis by experiment to achieve superior results, so an effective preparation using drive systems.
The idea behind the model to find the right way claiming the smallest amount of time, energy and investment, but also have the highest efficiency. Calibration is based on the inventory of assets (exercises) and their ranking according to the result of co-participation sport.

The main purpose of the paper is to demonstrate the usefulness of a model of physical training in the training specific to the junior echelon III mass base handball performance.

From the beginning it is stressed that this is just a guide as specific local conditions, the level of training and development of children requires a different orientation from one team to another.
A model of physical training specific aims complex recovery system operated by strengthening institutions and systems, increasing their functional possibilities, motor skill development in relation to requirements at the junior handball practice level III.

The quality of suites of models is reflected in each coach, and continuous records underlying substantiation of methodical indications for specific physical training development process.
The specific aims of physical training and streamlining content optimization methods.

Reasearch methods and procedures

Establishing subjects and content of work
In this work effort was dealt with effectively during the hours of training for handball players at junior level III of the CSS Medgidia and media influence specific physical training to increase efficiency during matches.

Experimental subjects.
-the experimental group - (10 athletes) on the dependent variable occurring;

-the control group - (10 sports) the independent variable is zero.
Athletes have been aware of the importance of specific physical preparation and training periods have worked seriously and in games and formal verification have failed to have an important contribution to achieving performance.

[1]Faculty of Physical Education and Sport, University Ovidius Constanta, ROMANIA
Email: cazan10florin@yahoo.com
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Particularities of the studied group

By consulting the medical records of athletes have found that not disturbing the status health.From terms of physical development, performing anthropometric measurements in terms of height, weight, open palm, scale, and biocromial diameter bitrahanterian, we found that athletes subject experiment falls within their optimum.

The analysis of specific physical preparation emerged following, based on results from initial testing:
-speed and responsiveness is generally good, with opportunities for improvement;
-skill level is quite good in all subjects at their level of training;
-detention have improved opportunities to all players;
-in terms of execution speed and better coordination during completion, must show a concern of coach for this;
-determine consistency specific resistance at high resolution specific job tasks;
-in terms of speed of decision will be considered that during matches or official verification that both combinations or on their honor to complete the courage and will.

Physical training model tested by us

Specific driving skills and tactical and technical content requirements of handball and effort as falling within the scope of influence of specific physical preparation, in order of importance and their contribution are:
-speed, response, repetition, completion;
-specific skills;
-detention muscle;
-specific force
-specific resistivity.

Analytical and coordination exercises with emphasis on speed:
-the counter running and catching the ball near the gate effects
-multi dribbling at high speed, range of 15-25 m
-running full speed along the ground by catching and passing the ball with players placed near the side lines.

In carrying out the technical elements (trapping, bird, throwing the gate, dribbling, dodge) present their forms of speed. But speed is evident especially in the processes of motion in specific field handball game. In the training aims to educate:
-speed home (response):
-speed travel
-speed execution
-repetition rate and related to these rule, ball handling and disposal. [V. Tudor, 1999].

Speed - is mainly done by using the means of athletics, from running the school for learning the art of running, and for increasing running speed. Thus, can be used effectively, Running exercise as a gallop side to play the ankle, with step Salta, with knees to chest, with legs throwing back, legs outstretched, running back and released.
In the category of special exercises: running winding among benchmarks, running with the return of 180 °, 360 ° followed by the sound acceleration, running with sudden stops in different positions.
To start we have made rapid jumps standing, crouched, in sitting, in lying forward or backward, jumps performed in different movements.

Speed of response - can be achieved by using different stimuli (visual, auditory) in all media and especially the transitions from one to another. [http://martinbhuchheit.net].
It will use:
-relay simple, mirror movements in pairs;
-at first signal, the player will make running speed, at two signals will do, stop and reverse squat, at three signals will make three jumps.

Speed of execution - the techniques is the custom in practice through swift implementation techniques of poultry, throwing (correlated with speed of response) and defensive techniques (related to speed).

You can use this:
-dribbling including milestones;
-throw the gate between 2 players (race) - 10 throws of jump (12 m balls arranged on the gate);
-passing the next 2 positions with exchange seats (40 m distance)
Exercises for speed of decision:
-games training and checking the various opponents of value;
-game of handball by eliminating multiple's dribbling and then the simple;
-2 treat game after throwing up 3.4 passes;
-low field game 7:7

Speed exercises extension work.

a. Ability to repeat exercises of speed is related to theoretical training, psychological and tactical:

-motion exercises consisting of processes in the field: left-right movements, 3 m + 3 m, displacement of the fundamental positions semicircle, 10-15 m running speed, stopping, running back 5-7 m, turn 180 °, 5-10 m run, stop, run easy. Switching from one process to another is by marking on the field. Repeat 8 times;
-players willing to attack the pivotal positions: running at high speed movements in short 8 and in halves;
-counter
-move player on 6 meters, the 9 m lower diagonal sprint, running back on the sidelines of the land, sea sprint diagonally;
-passing the positional attack, at the whistle, quickly pulled back at the semicircle 6-8x30 m

b. Specific Skill - close to the specific motive is quality technical and tactical content of the post and include what elements: a sense of balls, the gate.

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The journal is indexed in: Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST, DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengace Learning

School ball includes all means used for training skills and mastery of ball handling. In it we have more games and relay:
-relay with multiple dribbling
-dribbling with awkwardly arm among landmarks

Skill in the regime of force. The force of throwing (arm whippings and imprisonment for beating leg) and executed with skill necessary strength of the movement of attack and defense are about skill. Skill, speed regime - is manifested by moving the ground and use timely and rapid technical and tactical procedures of the game throwing passes in 2 and the gate arm awkwardly jump shot or throwing the leg opposite the throwing arm.
Resistance skill system. Typically skills are measured under aerobic conditions and with increasing skill, this capacity requires repetition in terms of complexity of exercises.

c. Alternate muscle - is practically custom actions of the legs to body movement made by pulse located in the lower limb muscles. It can develop by using the following means: jumping on the crate on the floor, jumping height, length, triplusalt games, basketball, volleyball, shooting bears from jumping over obstacles [D. Colibaba-Evuleț, 2007]. For detention under the strength we have skipped steps medicinal balls held under his arm, step one leg and throwing rejoiced at the gate.
d. Specific strength - is the quality motive implemented by:
-throw force (the force of arms and torso);
-thrust (power leg) related to processes of passing balls and throwing the ball,

Force development are mainly used in gymnastic exercises:
-push ups in arms, genuflexion, abdominal exercises performed from a lying;
-tractor in arms at a fixed bar,

-exercises with medicinal balls : - passing the ball with two hands, using procedures throwing the chest above the body, of a soldier, one foot over the head with the trunk extension;
-passing the ball with a spout hand launched and pushing;
-throw away from the place (10-15 m), movements in basic positions.

Exercises to develop muscular arms and shoulders:
-exercises extensorilor push for development;
-exercises using elastic bands for imitating the motion of throwing;

Exercises to develop muscular legs:
-genuflexion with and without weights;
-jumping exercises with weights.

1. As a first example of a circuit - a series of exercises to 6 devices - 3 athletes of 3 minutes per year:
-genuflexion with weightlifting
-abdomen exercises performed in a lying dorsal
-Jumping to the ball with knees to chest tractor in his arms wide flat
-passing the ball three drug
-push-ups in arms
During the whole circuit is approximately 20 minutes. Repeat this circuit 2 times.

2. A second example of circuit techniques: high-passing between I-E-P - 20 passing each
-dribbling between milestones (distance between landmarks 2 m) - in groups of 3 players - performed by 3 times.
Three-spool the land width. In the middle distance, a beacon, leaving the ball, grip, dodge the pole, penetration in dribbling, pass and move forward - running times each.
-dribbling with changes in direction - run 10 times each,
-spool in three steps from the jump.

e. resistivity-is quality consistency motive may lead to a high level, compliance with specific job tasks are determined by experience engine of the athletes. While the game is running distances of 30 to 0 m or driving action is executed in 3-6 seconds. The proportion of effort in game is considered to be the maximum ~ 34% (16% with intensity 1 / 1 and 18% in tempo 9 / 10, the submaximale of ~ 28%, large ~ 28%, moderate ~ 15%) [L. Boroga , 1983].

Participating players in phases of attack and defense during a match is ~ 40 → 70 running distances ranging from 3500 to 4500 m.[D. Colibaba-Evulet, I. Bota, 1998].

Exercises for improving the technical elements of resistance under:
-supported counter completed the gate throwing 2-3x10 break
-dribbling at speed, 20-25 m, with throwing the gate - 2 minutes between sets - 6.8 - length x 2 'rest
-passing the length of the land passed to put the touches land
-dribbling the bottom line to the center line and ground, launching the ball on the ground, running back to the starting line, stop, sprint power, lifting the ball, dribbling to the semicircle opposite, throwing the gate, gathering ball and move the sprint to the place of departure - 3 repetitions / pause return until it is among.
-passing the position further from 3 players to change seats and throwing, then replierea the semicircle
Resistivity can be educated and uniform running 1 / 4, 2 / 4 and 3 / 4 for distances up to 300 m, 100 m for each iteration distance of 20-0 m due to variable effort provided in the game.
The cycles of training with every element of progression can be - number of rounds or number of repetitions in a round or altering simultaneously the number of rounds and number of repetitions in a round [A.Dragnea, S.Mate-Teodorescu, 2002].

In achieving its goals in the paper, the experimental group training program we introduced several additional drive systems.

1. Exercises for developing explosive muscle strength train lower (L, 1-5)
S1 - jumping knee to chest
3 x 10-15, 30 break "between series
S2 - jumping on a bench fixed (h = 50 cm)
3 x 10-15, 1 `break between series
S3 - jumping in depth on the bench on the ground
3 x 10-15, 1 `break between series

S4 - successive jumps of gymnastics boxes at the different heights (1,2,3), followed by 3 jumps in depth in descending order
5.7 series, break 1 `
S5 - successive jumps squat in squat
5x 10, pause 30 "between series

2. Exercises to develop general and specific resistance (R,1-2)
R1 - running in the rate varied: 100 m - tempou 2 / 4 100 m - tempou 3 / 4
2 x 400 m - 1 `break between series
R2 - marathons - Running between the various lines of land (criss - cross-links)
3. Exercises to improve change of direction (S1, 1-4)
S1 - running speed on land length with changes in direction in different signals
5-7 - length, break 30 '
S2 - running among the milestones for conducting the feint and change of direction -5-6 x 30m, break 30 '
S3 - running on a route previously established that change in the steering-3-5 x 30m, break 30 '
S4 - catching the ball, feint to pass the ball, dribbling, change of direction and shooting bears in the form of double spool, after that pulled back 3 x 14, break 1 `.

4. Exercises to improve movement and speed of execution (VDE, 1-4)
Vde1 - passing in three foot on land with complete foot length. Players run in the same plane-3 x 10,
Vde2 - passing the three foot, the length of the land, with completion of the jump. Players run in scale with passing from man to man, obliquely forward and obliquely back: 3 x 10, rest 1 `
Vde3 -passing the three foot, the length of the land, throw the gate in addition to hip. Players run in a "crane" more advanced than those middle-3 x 10,

Vde4 - passing in three. The middle player is withdrawn, while those in more advanced side.

5. Exercises for developing detente arm throw
Db1 - imitation throw the gate of the place of opposition resistance by an elastic band
3-5 - x 10-15, 1 minutes break between repetitions
Db2 - 10 throws the ball away with handball and then 10 throws with tennis ball
3-5 - series with 1 minutes rest between sets
Db3 - push-ups with palms detachment of soil (usually 5 - 3 to beat, break 30 "between the series 3-5 - x 5)
Db4 - 10 passes in two drug Ball 1 kg, followed by 10 passes in two handball ball (different methods) -3-5 x with 1 minutes rest between sets
Db5 - 5 throws to bear on medicine ball instead of 1 kg, followed by 5 throws the ball handball-3-5 - x with 1 minutes rest between sets.

Organization of experiment

To observe and analyze the results we have established a series of driving tests and functional with performances at games gave us a mirror of the evolution of subjects during the experiment.

Determinations were made driving in two steps:
a. the early preparatory period II;
b. at the end of the preparatory period III;

Physiological data were collected and processed in 2 stages:
a. the early preparatory period II;
b. at the end of the preparatory period III

From the physiological truth that a good physiological potential is generated by a full line between somatic balance, ie in terms of harmonious development and morphological characters morfofuncționale is necessary collection of anthropometric data and physiological functional capacity related to cardiovascular and respiratory.
These data were recorded to see how much system resources used affect the ability.

Physiological samples used in research
The interpretation of physiological data we used the following indicators:

1.The index of vital capacity (VC), determined by spirometry, used for qualitative and quantitative assessment of respiratory function and to detect any deficiencies of the respiratory system.
We appreciated the good and very good values of vital capacity as:
-very good, over 3,500 ml
-good, between 3000 to 3500 ml
-poor, under 3000 ml
Qualitative assessment is made by repeating the test 3-4 times consecutively.

If after the first test, functional capacity decreases, it means that your breathing muscles have a subnormal functioning capacity, and central nervous system have a low resistance to the accumulation of CO2, which increases the effort breath.

2.Lorentz index is equal to b. ratio of vital capacity and height. We provide data on the adaptability of the body on respiration during maximum efforts and submaximale.
We considered the following values:
-very good, over 20
-good, from 17 to 20
-poor under 17

3.Demeny respiratory index - is the coefficient index, lung or resistance training and body.
Is defined by the ratio of vital capacity, measured in cc and body weight measured in kilograms. This parameter indicates lung is essential in establishing a

general biological potential.
We gave an interpretation of the results was as follows:
-very good – 75
-good - 60-75
-low - below 60

4.Ruffier resistance index is itself a test on which this index is calculated using the formula:

$$\frac{(P1 + P2 + P3) - 200}{10}$$

The test consists of 30 genuflexion execution time of 45 'and follow the curve of resistance and heart rate recovery during the total duration of 1 minutes. Measure the pulse at rest (supine) - P1.
Perform genuflexion in 45 "in the next 15" is measured again heart - P2, and in the last 15 'minutes of recovery - P3 .
Interpretation of data obtained was as follows:
-very good, less than 1
-good, between 1.1 to 5
-mediocre, between 5,1-10
This test also provides an objective criterion on the effectiveness of means used in preparation.

Driving samples used in research
In addition to physiological evidence used as the theme of our work concerns the effectiveness of a specific model of physical training handball battery of tests we used specific driving handball undergoing review of their effectiveness:
-5x30 m race with a break between repetitions 30. Running is the average of 5;
-specific evidence is through the hall as described and attached sketch :
a.Travel in triangle (1) with output peak (2), with oblique lateral movement - back (3), high output (2), oblique lateral back (4), lateral (1). Repeat 2 times.
b.Running speed to the center of circumventing the benchmark:
1.5 running
5.2 running back
c.It collects the ball at its 1 side of 1 m section 2 and 6 go on dribbling stakes placed among the first milestone on the center of the field at 5 m from the triangle's peak and the other 5 at 3 m distance from each other.
d.After overcoming the last milestone to throw at the gate trying to achieve one of the 2 balls hung at the gate in top corners.
After throwing the ball (1) is running at speed towards the middle obliquely passed the finish line. For each ball touched the ball 1-2-3-4 - are granted a bonus of 5 points.
-3x200 m - advocated in the room (5x40 m) with the break between repetitions of 1 'and will be the average of 3 running;
-shuttle;
-long jump in place;
-pentasalt;
-ball throwing distance - with the impetus of 3 steps;
-skill specific test.

x starts the running of pulled back (sprint) of paragraph 1 of the line center to center, the moving side 6 m to pass through points ABC, running before the AC and AB then moving back in before the BE and back through it, running side by 3 m AB, collecting the ball from point A and passes with no partner. 1, still running in a straight line and passes the ball back with no partner. 2, continue running in a straight line and the ball back, still dribbling with changing distance movement, including 4 stakes placed from 2 to 2 feet, throw the gate of running or jumping from the semicircle of 6 m.

The experiment took place from 15 October 2008 to 15 May 2009.

In this period, athletes were initially tested, then the applied model of training and then the final test.At the start of training athletes were informed about the scheduling control samples in accordance with the timetable established.Recording of the control samples both for initial verification and final verification was made under similar conditions, at the beginning and end of their training.

Results and discussions

Driving test: speed 5x30 m

GRUPE	EXPERIMENT		CONTROL	
TEST	IT	FT	IT	FT
X	4,67	4,4	4,72	4,6
DS	0,19	0,15	0,19	0,11
CV	4,23%	3,47%	4,11%	2,51%
$t_{corelate\ dep}$	7,54		3,57	
P	< 0,0005		< 0,005	

GRUPE	EXP.	CTR.
TEST	FT	FT
X	4,4	4,7
t_{indep}	2,5	
p	< 0,01	

Arithmetic mean of the experimental group decreased after attending the preparatory period for the quality-speed driving, the average values from Tf is lower than values from Ti (Tf - the final test, Ti - initial testing). TF1 values in the experimental group are lower than the control group TF2, so in using specific means ss obtained a growth rate indicates the level of development in the experimental group compared to the control group.
Derivation from baseline final standard is lower in both groups, so there is a better ownership of the tasks of training.

The coefficient of variability in Tf (= 3.47% TF1, TF2 = 3.51%) has lower values than the Ti (Ti1 = 4.25%, Ti2 = 4.17%).

In this sample group of athletes have a low scattering (between 0-15) and collectives are relatively homogeneous.
Comparing the average of the 2 groups in final testing of the experimental group TF1 = 4.4 is better than the average of the final testing of the control group Tf = 4.6.

The difference is significant static at p <0.01, for the experimental group which means that program development rates of movement had the desired effect. One can notice a significant increase in speed athletes from 30 m to the experimental group, the difference being significant static at p <0.0005.

Technique test

GRUPES	EXPERIMENT		CONTROL	
TEST	IT	FT	IT	FT
X	41,7	40,37	42,01	41,7
DS	0,80	0,98	0,84	0,81
CV	1,93%	2,45%	2,00%	1,94%
$t_{dep\ colab}$	7,51		2,91	
P	< 0,0005		< 0,025	

Arithmetic mean of the experimental group decreased after the training allocated to this evidence, the average values at the end TF1, being smaller than the values recorded in Ti1.

Also media TF1 <TF2 which shows that the additional resources used in the experimental group had the desired effect.

TF1 final standard deviation = 0.98 is higher than the initial standard deviation in the experimental group Ti1 = 0.80, while the control group standard deviation initial Ti2 = 0.84 is higher than the final TF2 = 0.81 .

Analyzing the results of the experimental group 2 and control for the final assessment we CVf1 = CVf2 = 2.45 and 1.94 we find great uniformity of objectives.

The explanation for this phenomenon is relatively simple because the performance of random, which were selected after some initial performance. Consider also a better homogeneity of the 2 groups on technical evidence to the running speed 5x30 m. Comparing the experimental group with the control group, we calculated the significance of the difference between final averages of the 2 groups by the test that has a value of 2.82. 40.37 average from the experimental group is better than the 41.7 average from the control group at final testing.

Driving test: Endurance 3x200 m

GRUPE	EXPERIMENT		CONTROL	
TEST	IT	FT	TI	FT
X	45,34	44,01	45,8	45,44
DS	1,12	1,00	1,12	0,91
CV	2,48%	2,49%	2,44%	2,01%
$t_{dep\ colab}$	9,91		3,21	
P	< 0,0005		< 0,01	

GRUPE	EXP.	CTR.
TEST	FT	FT
X	44,01	45,44
t_{indep}	2,86	
p	< 0,01	

On this evidence it concerned checking the level of development of specific resistance handball - is below average: Final TF1 = 44.01 is less than the mean baseline Ti1 = 45.34 to the experimental group and the control group is observed maintaining the same values an average 45.8 to 45.44 to Ti2 and RF2. So, after browsing the preparations, the experimental group improved joint effort capacity (aerobic - anaerobic).

GRUPE	EXP.	CTR.
TEST	FT	FT
X	40,37	41,7
t_{indep}	2,82	
P	< 0,01	

The calculation of dispersion is observed a decrease in the final assessment in both groups.
The results obtained by calculating the final standard deviation is close to both groups ranging between 0.91 and 1 in the experimental group.

The coefficient of variance in final testing CVf1 = CVf2 = 2.29 and 2.01 are lower than those found in the initial verification CVi1 = CVi2 = 2.48 and 2.44. In this trial, both groups have a small scattering so homogeneous groups.
Materiality of the experimental group was p <0.0005 shows that the drive systems used further in this group were more effective than those used by traditional program.
The difference between the average final test at the 2 groups is statistically significant at p <0.01.

Throwing the handball ball away

GRUPE	EXPERIMENT		CONTROL	
TEST	IT	FT	IT	TF
X	32,87	34,78	31,12	32,21
DS	0,8	0,63	0,85	0,03
CV	2,44%	1,82%	2,75%	3,21%
$t_{dep\ colab}$	-8,41		4,93	
P	< 0,0005		< 0,005	

GRUPE	EXP.	CRT.
TEST	FT	FT
X	34,78	32,21
t_{indep}	11,01	
P	< 0,0005	

Arithmetic mean to throw the ball away from handball experimental group created by extending the cycle of training for developing detente throwing arm registering values of 34.78 to 32.87 initial verification. Comparing the 2 groups is observed that the arithmetic mean of the experimental group is much higher than the control group at final assessment with a value of 32.21.

Standard deviation decreased to final verification in both groups, but has higher values in the experimental group (0.63) compared to the control group (0.03).

The coefficient of variability final CVf1 = 1.82 is lower than the initial verification CVi1 = 2.44, so the experimental group presented a scattering medium, so a relatively homogeneous group.

As a specific test handball, is observed in both groups significantly increased indices aimed at developing detente throwing arm.

A test value being 11.01 m shows that the difference between final averages of the 2 groups is statistically significant at 0.0005.

Long jump

GRUPE	EXPERIMENT	CONTROL

GRUPE	EXP.	CTR.
TEST	FT	FT
X	11,01	10,56
t_{indep}	3,75	
p	< 0,0005	

TEST	TI	TF	IT	FT
X	1,72	2,20	1,68	1,93
DS	0,11	0,09	0,08	0,21
CV	6,43%	4,22%	5,05%	11,01%
$t_{dep\ colab}$	-32,18		-3,12	
P	< 0,0005		< 0,01	

GRUPE	EXP.	CRT.
TEST	FT	FT
X	2,20	1,93
t_{indep}	3,37	
P	< 0,005	

This evidence has been obtained higher averages, final verification in both groups compared to the initial verification (TF1 and TF2 = 2.20 = 1.93) but significantly higher in the experimental group, which demonstrates that specific exercises used for development of quality drivers, force speed under muscle legs were much better. Standard deviation decreased in the experimental group at the final assessment value reached 0.09 while the control group increased from baseline, reaching a value of 0.21.

The coefficient of variability CVf1 = 4.22 is lower than the value obtained from initial verification CVi1 = 6.43 in the experimental group while the control group at final assessment CVf2 CV = 11.01 increase from the initial verification CVi2 = 5 , 05.

In this trial the experimental group has a small scattering, which shows a greater homogeneity and control group presented a moderate scattering, so we are dealing with a homogeneous control group. There is a statistically significant difference at p <0.005 between groups, final testing environments, which leads us to conclude that specific physical training program implemented and has achieved favorable to the experimental group.

Pentasalt: Détente

GRUPE	EXPERIMENT		CTR	
TEST	IT	FT	IT	FT
X	10,57	11,01	10,36	10,56
DS	0,25	0,18	0,86	0,24
CV	2,41%	1,66%	3,33%	2,28%
$t_{dep\ colab}$	13,31		4,08	
p	< 0,0005		0,005	

Arithmetic mean in the final assessment has increased in both groups recorded the values of TF1 and TF2 = 11.01 = 10.56. It also noted a much greater increase in the experimental group compared to the control group TF1> TF2.
Standard deviation decreased in both groups at final assessment compared to initial verification, but the value in the experimental group is lower than the control group, DSf1 <DSf2.
The coefficient of variability final CVf1 = 1.66 and coefficient of variability final CVf2 = 2.28 are lower than values recorded in the initial checks (CVi1 = 2.41, CVi2 = 3.33).

On this evidence both collective presents a small scattering, so a good homogeneity, so it is noted that the threshold of significance is good in both groups, the difference between the average final tests are statically significant at p <0.005.
Greater variability in sample long jump from place to sample pentasalt shows an inconsistent performance following the teacher to make a proper stabilization through the use of additional exercises.

Specific skill test

GRUPE	EXPERIMENT		CONTROL	
TEST	IT	FT	IT	FT
X	23	22,13	23,49	23
DS	0,45	0,53	0,50	0,44
CV	1,98%	2,42%	2,14%	1,95%
$t_{dep\ colab}$	11,09		3,8	
P	< 0,0005		< 0,005	

GRUPE	EXP.	CTR.
TEST	FT	FT
X	22,13	23
t_{indep}	3,34	
P	< 0,005	

This test of skill required and a high speed contribute to the development of combined driving qualities: skill, speed regime. There is a decrease in the average final verification in both groups TF1 and TF2 = 22.13 = 23 to the initial verification TF1 = Ti2 = 23 and 23.49.

Training program has come from the experimental group by using the additional drive systems has increased the difference between the 2 groups in terms of quality motive, skill, speed regime from the initial 0.49 to 0.87 in the final.

Standard deviation in the final assessment in the experimental group increased from the control group, which highlights the fact that athletes going through the same training program as different evolved motive motive quality skill system is a quality native speed.

In the control group standard deviation at the final assessment is lower DSf2 = 0.44 compared to initial verification DSi2 = 0.5.

The coefficient of variability in the final assessment in the experimental group (CVf1 = 2.42%) is higher than that recorded in the initial verification (CVi1 = 1.98%) while the control group, the coefficient of variability in the final assessment (CVf2 = 1.95%) decreased from the initial verification (CVf1 = 2.41%).

However both are homogeneous collective with a small scattering.

By comparison between the 2 groups by calculating the difference between average final test p <0.005 is noted that there is a statistically significant difference between the 2 groups, program development speed increase skill level index had the desired effect.

Conclusions

Conclusions that we learned from the experiment, in terms of driving skill specific and covered the ability to influence specific effort are:
-to improve the driving qualities specific qualitative indices (in particular speed and force) will alternate the exercises designed to set the correct implementation details are to develop some quality drivers; will choose the rational exercise of force development indices that can be enter into the structure of the driving skills of the game;
-november to training habits will make various technical, specific action, full speed or in terms of fatigue and emotional tension;
-to develop qualities and strength + speed driving force will be used isotonic and isometric exercises, especially those that include type movements overcome failure, ensuring an active system apparatus working muscle
-easy to get, flexibility, coordination and relaxation of movement, will introduce specific exercises to develop skill in terms of physical demands and mental strain;
-choosing and using largely exercises are recommended for general physical training and exercises some cyclical high demand, raising the potential for functional (respiratory and cardiovascular) of players.

Proposals

Quality training is reflected in drawings of models of each coach, and continuous records underlying substantiation of new indications, preparation methods for the development process.

This model requires specific physical training in practical application exercises, which shapes both the content and nature of the game demands mentioned earlier.

I think it is very important as physical education teacher, that coach should strive to find a number of ways as streamlined to accelerate endowment swift

handball with driving qualities thus providing the foundation to strengthen the specific technical processes -tactical game, shorten the time for obtaining performance by optimizing the preparation and operation means more choice for their efficiency.

The fact that the baggage driving qualities of athletes are or are not well represented in the game of handball and that they are frequently requested explain why these qualities must be developed.

Specific motor skill development is provided properties conscious, and active sound tactical and technical processes but also a consequence of sports performance effectiveness.

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EXPERIMENT ON THE GROWTH RATES OF DEVELOPMENT OF SPECIFIC GAME OF HANDBALL DRIVING QUALITIES, TROUGH SPECIFIC MEANS ATHLETICS, TO JUNIORS II ECHELON

CICMA IOAN TEODOR[1], MEREUȚĂ CLAUDIU[1]

Abstract

Purpose. The purpose of this paper is to present and demonstrate one of the effects of increasing development indices , specific driving qualities of handball game, namely athletics, as well as to contribute to the enrichment of research in this area.

Methods. In order to achieve the experimental study, as follows from the paper's title , there was used athletic specific means which we have classified them according to the driving quality of which development was followed such runs were used in all forms and tempi, variable distances sprints, passing at speed, jumping, throwing, starts from different positions, combinations.

Results. The driving and technical samples set were: 1.-Standing long jump (S.L.J.)/ P=0,05; 2.-Speed running at the 30m distance/ P=0,11; 3.-Dribbling through cones/ P=0,21; 4.-Handball ball throwing at distance/ P=0,79; 5.- Ten steps jump (min. 20 m)/ P=0,92; 6.-Resistance running at the 1000 m distance/ P=0,05.

Conclusions. The purpose and tasks research have been completed because, after initial and final tests, there is progress, so it appears that the documentary was made good, and the selected samples were representative for their purpose.

Key words: indices, driving qualities, growth, development.

Introduction

Handball game theory and methodology, studying a large sphere of problems relating to the school handball game, at the mass, at the base mass of performance sport level, at the performance and high performance.

The handball game represent a harmonious combination, between natural movements (running, jumping, throwing), on the one hand, and the motor dexterity and ability, simples, attractive and accessible, on the other hand.

At the same time, the handball game be deployed, to the fund of intense psychical solicitations, which have a strong educative and formative character.

The handball game, scientific practiced, are beneficial and important tends to health strengthen, to multilateral develop of physical and mental capacities, to the acquisition of motor dexterity and specific game knowledge, by technical and tactical.

Was developed and a training concept, which suffers changes and improvements continuous, made from studies and theoretical researches, practical and applied.

In conclusion, we can say that the main trend of the handball game, is to be practiced totally of a scientifically bases, and create and implement as a richer technical-tactical baggage, and adapting of the

[1] Faculty of Physical Education and Sport, Galați University, ROMÂNIA
Email: cicmadoru@yahoo.com
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purpose of each competition, namely to score many points in the enemy gate.

As a handball player develop the moral and volitive qualities, discipline, sens of duty, spirit of cooperation with their team-mates, with the referees, coaches and even the public.

As a performance sport, the handball game asks of the participants to make a intensive work, to cope with the tasks of training, very hard, whose solution the maximum strain of all physical, moral and intellectual abilities.

We can say that the handball game learn to the individual to be disciplined, orderly, industriously, self-consciously about collective success, ambitious and eager for self.

The selecting and training work, a handball team, remains and must be one of the basic problems, of the teachers activities from each school, with sport profile or school club, which problem, like importance, will be located at the same level with teaching action performed in the normal lessons and sports training.

Content

It is known that the assumptions are temporary solutions of the scientific research problems.

Generally hypothesis represent own uncertainties explanation, in scientific research her taking place a provisional solution of an provisional response to the question of the problem under research.

The hypotheses of this paper were:

-- If the means proposed, selected and implemented, can lead to very significant increase of a motor qualities indices development, specific handball game, verified and certified by the control samples, report to their values, proposed by Romanian Federation of Handball (R.F.H.).

-- If scientifically effected, the child-juniors training can lead to assumptions development, to a fair and harmonious development, and to increase of a motor qualities indices development.

Proficiency knowledge a morpho-functional and psychical particularities, of the each child with which working, is the only way what allow avoid of the two most common mistakes in sport activity, namely over-exaggerated efforts of the body and excessive caution, because that the preparation is maintained on a level bellow by the child's possibilities.

In terms of developing motor qualities, can be said that the main motor solicitations forms, are represent by the motor qualities, that can be divided in conditional and coordinative or coordination qualities.

In this complex gear, an extremely important role it have the central nervous system and particularly cortical floor, that performs the analysis and synthesis of information from the periphery, on which elaborate on the appropriate commands and kinaesthetic analysers, tactile, audible and optical, which receiving

It can be said that the main features of the handball game are freedom, the limits of space and time, the effort and pleasure.

environmental changes and transmit them to the cortex nerve, in form of nervous inflows, of them adding the numerous mechanisms of feed-back, in which an important role they have some central nervous and vegetative formations, example being the Reinshaw neurons by the spinal marrow, endocrine glands and the concentration levels of a series of substances, which provides a whole body homeostasis.

Dividing the training period, is determined by a series requirements, by method nature, which define the respective phases.

As a result, the entire process of children and juniors preparation, was divided into the fallowing stages:

-- first stage – beginners;
-- second stage – advanced;
-- third stage – perfected.

In the first stage the children discover first notions of technique and tactics learn the first rules of the game so basically start play of the handball game.

So, from the above, show that preparatory stages to the this echelon, beginners, is learning and reinforcement.

In the second stage, children will run a more comprehensive training program, tactical and technical content what be learned, is much wider, and physical preparation level being much improved.

This stage corresponds and with official competition apparition, so the fight sports with a real and the unknown enemy.

For this stage is defining the consolidation and learning.

In the third stage, appear two lines defining, namely game model and training model of the juniors.

Beginning with the performance echelon of advanced juniors, game models provide progressively increasing of the technical and tactical baggage, and a growth indices of development og game specific motor qualities.

Principle is defined as a basic idea of a doctrine or thesis, which structure and guiding one knowledge activity or by practical nature, from which drift a series consequences in the action plan or behaviour. (A. Nicu, 1993)

As a general definition, sports training is defined as "pedagogical process, systematic developed and continuous gradually by adapting to the physical efforts of the human body, technical, tactical and psychical intense, to obtain the best results, one of the forms of practice in the competitive regime, of physical exercises." (I. Kunst Ghermănescu, 1983)

The sports training concept, have subordinates the training basis, (all laws and principle underlying and conditioning sports training), established by the sports training theory (system of principles and methods which structured and compose sports

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training), as training principles (basic ideas by the pedagogical, psychological, physiological, hygienic order, and others which structures making and driving of the training process).

Sports training involves certain components, namely:

a). educational component, by the teaching process which operating;

b). biological component, by the objectives effects in functional development plan and as adaptative level of human body;

c). psychological component, by the character features, moral features, emotional features implications, of the athlete personality;

d). sociological component, by the relationships and his integration mode and homogenization, in the social, economic and cultural environment;

e). hygienic component, by the specific nutrition conditions, rest, comfort, and by environment where the athlete is trained and recover;

f). ethical component, by the fair-play ideals, total employment in training and competition;

Going of the assumption that sports training is, above all, a teaching process with multiple implications, we believe is useful to distinguish the principles into two big category, namely: general principles and specific principles.

Such sports training theory, present the following general principles:

-- accessibility principle;
-- continuous effort principle;
-- cyclic structure of effort principle;
-- conscious participation principle;
-- systematization principle;
-- intuition principle;
-- individualization principle;
-- through knowledge principle.

The specific principles are those which act mainly in sports training, and use them in other activities whose generate a different types of performances.

We can include following specific principles, namely:

-- continuity principle;

-- optimal solicitations and increase or in steps, of the efforts principle;

This principle, expected increasing solicitation degree of the body by the effort increasing, when using the same means or by changing them, the body react strongly to excitatory to them is not normal.

-- priority effort specific competitive principle;

Sports training factors are classified thus:

a). Technical preparation factor is represented by all means with a identical structure or similar, of motor actions provided by the competition rules, by which athlete or team reflected differentiated performance as specific, or more simply, all the means, which by their specific form and content allow to practice of sport branches, according to contest rules and form sport branches technique, those.

b). Tactical training factor involves complex, adequate and effective capitalization a technical and tactical preparation, of a team, in the contest deploy in concordance with conditions of adversity and with predetermined performance objectives, namely title, record, qualification, special place, etc.

c). Theoretical training factor represent "all the information learned from athlete to knowledge and explain all the principle, rules and methods what determined increase effort and performance capacity, and contest or next game anticipating for adequate approach" (A. Nicu, 1993)

This factor is one of the elements through which realise the "invisible training" his tasks being instructive-educative.

d). Psychological training factor, "determined by the training means and with educational actions, increased mental capacity, to allow of athlete deploy of efficiently actions and obtain a superiors results in competitions".(M. Epuran, 1982)

Driving qualities are body features, materialized in the ability to making of the movement actions with some indices by speed, force, resistance and ability or skill, are one native character whose initial level of manifestation depends by the genetic hereditary fund.

Driving qualities are divided into:

-- Basic motor qualities, speed, force, resistance, ability or skill, to which is added, according with some specialists flexibility and mobility;

-- Specific motor qualities, those involved in the practice of sport branches, or the exercise some professions or trades, them resulting from combining of two or more basic motor qualities.

For each basic motor qualities, exists one specific feature, namely:

1). For speed – rapidity, swiftness;

2). For skill or ability – complexity degree or movement precision;

3). For resistance – effort duration;

4). For force – load.

Speed represents the human ability to execute one move with a greater rapidity and frequency.

Skill is the capacity to achieve and execute necessary movement correctly, quickly adapted to the situation.

Resistance can be defined as the body ability to be laid down with a relatively long duration and relatively high intensity, keeping constant indices, of optimal efficiency.

Force represent the neuromuscular apparatus capacity to defeat one resistance by movement on muscles contraction.

Tasks research were following:

-- action of documentation and information;
-- establish working hypotheses;
-- initial testing of children;
-- completion of the training program;

-- final testing of children;
-- analysis and interpretation of results;
-- establish the conclusions and recommendations.

The experiment being realise in period 20 october 2010 – 15 mars 2011, at high school sports program Brăila.

Anthropometric measurements was: height, weight, scale, length of palm.

Driving and technical samples was:

1. Standing long jump;
2. Speed running on the distance of 30m;
3. Handball ball throwing away with momentum of three steps;
4. Ten steps jump (minimum 20m);
5. Dribbling through cones;
6. Resistance running of the 1000m distance.

Statistic indicators used was:

The sum (∑):∑=X1+X2+X3+....Xn

Arithmetic media: $X=\frac{\times 1+ :2+ :3+....\times :}{n}$

Standard deviation (S): $S=\pm\sqrt{\sum \frac{\overline{i-x}}{n-}}$

The coefficient of variability (Cv): $Cv=\frac{S*\ )0}{\bar{x}}$

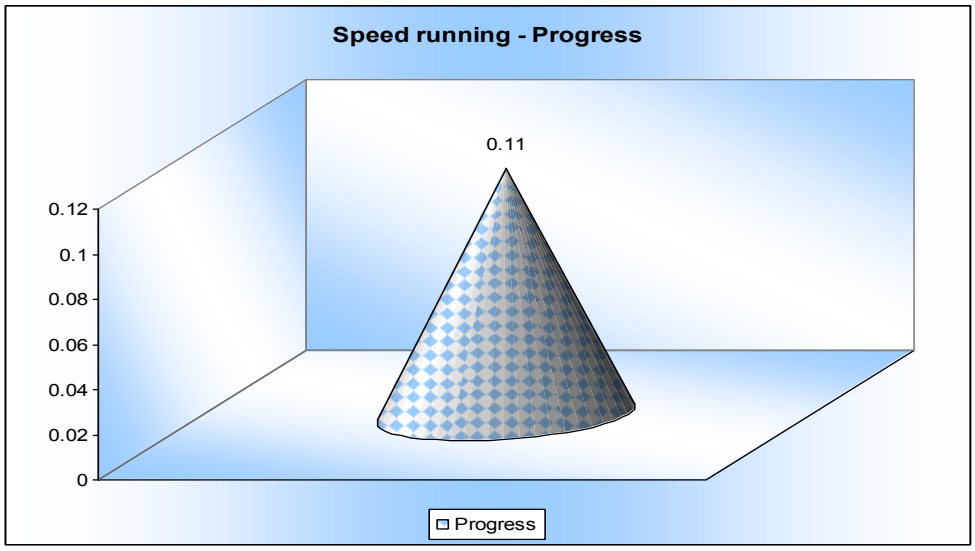
Values of the variability coefficients may be influenced by some factors such as number of cases and distribution of results.

Motrico-technical test

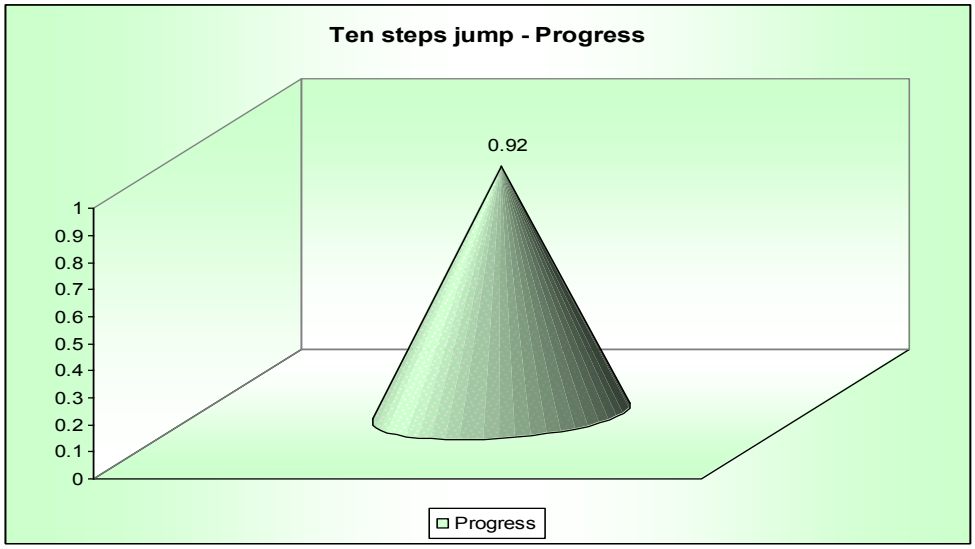
Nr. crt.	Name and prename	Speed 30m (sec)			Ten steps jump 20m (m)			Dribbling through cones 30 m (sec)			Standing long jump(m)			Throwing handball ball away (m)			Resistance 1000m (min, sec)		
		T_i	T_f	V_R	T_i	T_f	V_R	T_i	T_f	V_R	T_i	T_f	V_R	T_i	T_f	V_R	T_i	T_f	V_R
1	Manea Cristian	4,7	4,6	4,3	19	21	20	7.8	7.6	7.3	2,18	2,22	2,20	22	23	25	4'30''	4'25''	4'20''
2	Popescu Alin	4,8	4,6	4,3	20	20	20	7.5	7.5	7.3	2,22	2,20	2,20	21	22,5	25	4'50''	4'40''	4'20''
3	Sarcă Florin	4,3	4,3	4,3	18	19	20	7.6	7.4	7.3	2,10	2,15	2,20	20	21,5	25	4'40''	4'40''	4'20''
4	Strungariu Paul	5,2	4,9	4,3	22	22	20	7.9	7.5	7.3	2,05	2,15	2,20	23	23	25	4'20''	4'20''	4'20''
5	Trică Mădălin	4,7	4,5	4,3	17,5	18,5	20	8.1	7.7	7.3	1,95	2,00	2,20	22,5	23	25	4'40''	4'35''	4'20''
6	Frățilă Ionuț	4,8	4,7	4,3	18,5	19,5	20	7.7	7.4	7.3	1,90	1,95	2,20	21,5	22	25	5'	4'45''	4'20''
7	Buga Adrian	4,5	4,5	4,3	21	22	20	8.2	7.8	7.3	2,00	2,00	2,20	26	26	25	4'35''	4'30''	4'20''
8	Brânză Georgian	4,7	4,6	4,3	20	21	20	7.4	7.2	7.3	2,15	2,18	2,20	24,5	25	25	4'10''	4'10''	4'20''
9	Boboc Cristian.	5,0	4,9	4,3	18	19	20	7.6	7.4	7.3	2,00	2,08	2,20	22,5	23,5	25	4'45''	4'40''	4'20''
10	Zamfir Ionuț	4,8	4,7	4,3	17,5	18,5	20	7.9	7.7	7.3	1,90	1,94	2,20	21,5	22	25	4'25''	4'20''	4'20''
11	Balaban Ionuț	5,1	4,9	4,3	17	19	20	8.0	7.8	7.3	2,10	2,14	2,20	26	27	25	4'15''	4'10''	4'20''
12	Dogărescu Marius	4,4	4,5	4,3	18	18	20	7.5	7.5	7.3	2,25	2,30	2,20	23	24,5	25	4'45''	4'30''	4'20''
Indicatori statistici	$\overline{X}$	4.75	4,64	—	18,87	19,79	—	7,76	7,54	—	2,06	2,11	—	22,79	23,58	—	4,35	4,30	—
	S ±	0.24	0,18	—	1,55	1,38	—	0,25	0,18	—	0,12	0,11	—	1,87	1,70	—	0,15	0,12	—
	Cv	5.18	4,05	—	8,23	7,02	—	3,31	2,42	—	5,79	5,46	—	8,32	7.22	—	3,44	2,78	—
	P	0.11		—	0.92		—	0.21		—	0.05		—	0.79		—	0.05		—

Table nr. 1

Graphic nr. 1



Graphic nr.2



Graphic nr.3

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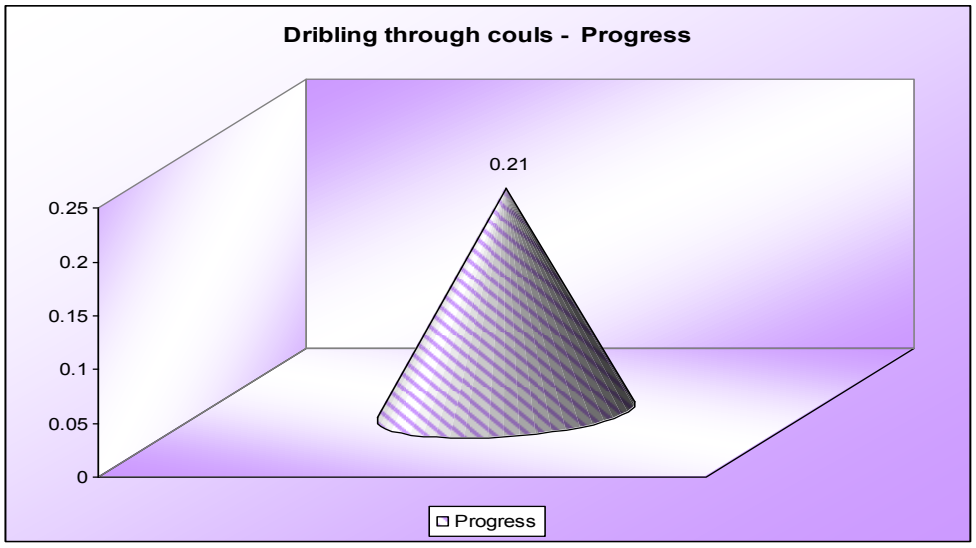

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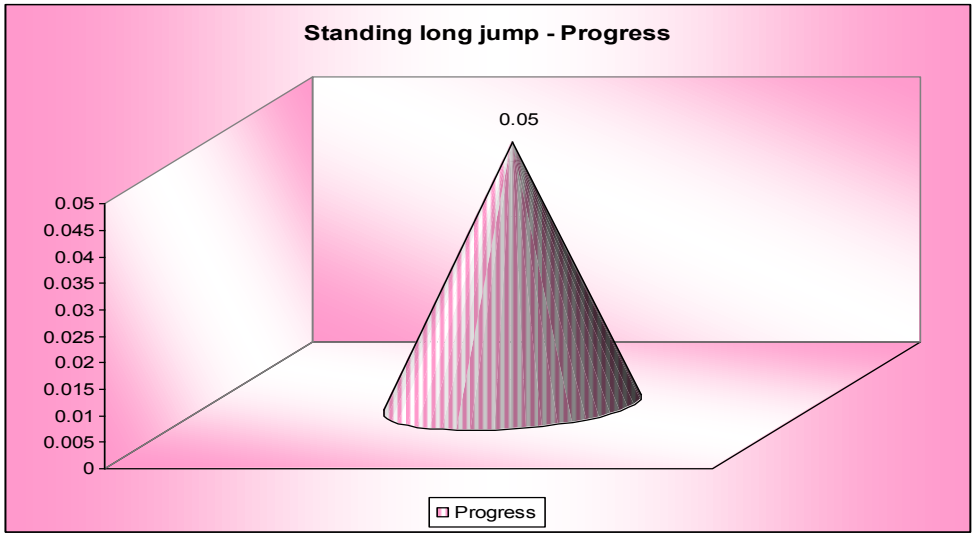

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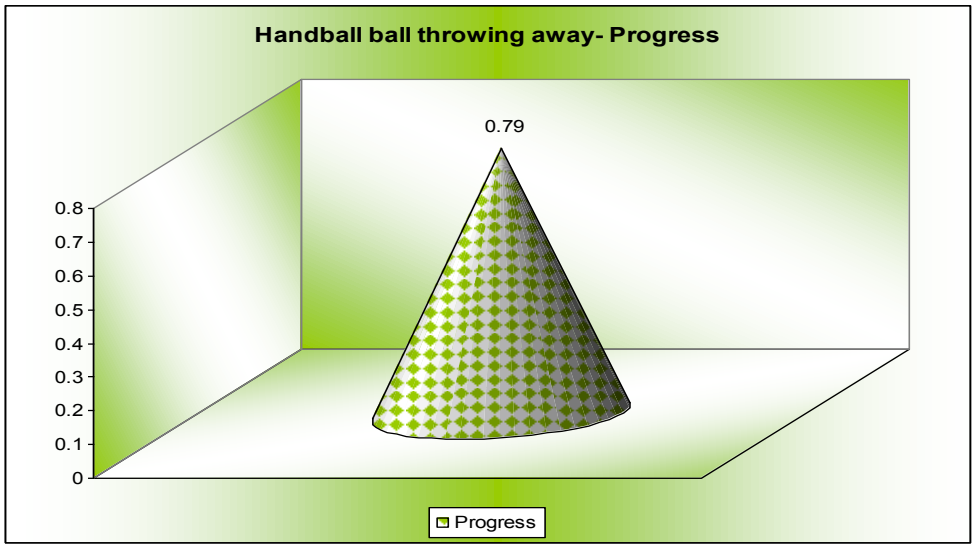

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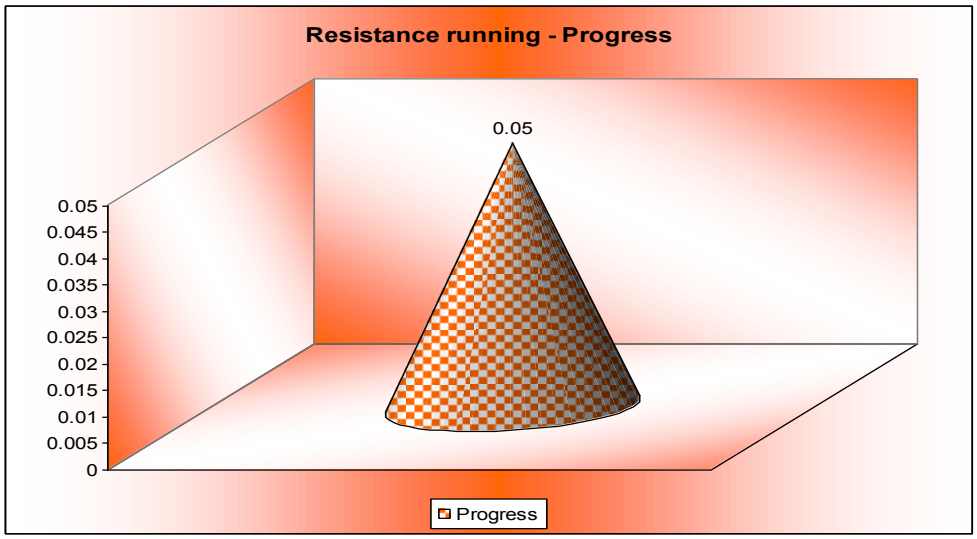

Charts above shows the progress of children juniors third, from initial testing to final testing.

Coclusions

The means used, were chosen, selected, measured and then applied to both features of the athletes at this age and on the objectives propose at this level.

Research has found analyzing and systematizing the preparation means, to indices increase development of motor qualities specific handball game, proved to be efficiency and specific means of athletics proposed.

Also research showed that approach training athletes at this echelon, programming and planing training activity, must be done, only after a through knowledge of the students collective with which work, and only after personal training, prior of theoretical and profound scientific basis.

Hypotheses proposed to be verified and demonstrated have been validated, whereas the development indices of motor qualities specific handball game, have increased, results obtained as the control samples, demonstrating that.

It is well supporting control samples, to perform after each period before competition.

It is good that at juniors third level, the teacher-coach, must possess the ability to prepare planning documents, consist of methodologically and datailed records documents.

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TECHNICAL PROPERTIES INCREASING EFFICIENCY ELEMENT "GIANT CIRCLE BACKWARD" AT JUNIOR GYMNASTS

DAMIAN MIRELA[1], DOBRESCU TATIANA[2], CRETU MARIAN[3], POPESCU RADUCU[1], OLTEAN ANTOANELA[1], DAMIAN ROXANA[1]

Abstract
The Romanian gymnastic school is impressive. Medals in major international competitions were often monopolized by Romanian gymnasts who provoked the audience enthusiasm and admiration. An analysis of past Olympic Games and World Championships shows that the event with the less expectations has been uneven bars.
This paper is generated by practical work started on two groups of IVth category gymnasts from Farul Constanta Sports Club.
Hypothesis
The uneven bars exercises performed in easier conditions with the help of an installation conceived by us will lead to a correct technique and to the improvement of the execution technique.
Purpose

[1]Faculty of Physical Education and Sport, University Ovidius Constanta, ROMANIA
[2]University „Vasile Alecsandri" of Bacău, ROMANIA
[3]University of Pitesti, Physical Education and Sport Faculty, ROMANIA
Email: damian_mirela2003@yahoo.com
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This research aims to improve the execution technique and to apply drills which can ease the learning of the technical element – Giant circle bwd.
Methods
The research has been developed as an experiment on two groups of gymnasts: the experimental group consisting of eight gymnasts with an average age of 8.6 ± 0.765 years, and the control group made up of eight gymnasts with an average age of 8.8 ± 0.954
The experiment was conducted over a period of six months (October 2010- March 2011), 25 weeks, 450 hours, from which 70 hours were allocated for the experiment.
The established drills were performed on a thinner bar covered by a tube which slides on the first bar. The applied tests were for physical training (4) and for technical training (2).
Discussions
The data analysis reveals the efficiency of the applied drills, so the experimental group recorded superior results than the control group. The difference between the means on physical training tests is not statistically significant. On technical tests, the experimental group registers significant differences at final testing ($p < 0,05$).
Conclusions
Hypothesis has been confirmed. The drills which were performed on the built equipment were efficient, so the experimental group has progressed to the control group.
Key words: gymnasts junior technical properties increasing

Introduction

To set the features of the training lesson with IVth category gymnasts, it is necessary to take into account features of 8-10 years old girls in their growing up and development. Practice and results obtained in working with small school-age gymnasts, as well as the numerous research have shown that gymnasts are as able as adults to make incredible efforts to achieve high performance, with the specification not to ignore the growth rate of the body in its various stages of development. If the volume and intensity of effort are exaggerated, the training is unilateral, and recovery after exercise is insufficient.

Training at the age of 8-10 years old should be aimed at developing neuro-muscular coordination, without pursuing by all means the increase of aerobic and anaerobic power. So it is advisable to insist on technique and precision movements (E. Avramoff, 1982).

The learning of movements by gymnasts should be done by taking into account a series of rules: in their preparation, the emphasis is on developing physical and moral qualities, adopting a correct, aesthetic and expressive posture, but also on the accuracy of technical and artistic elements. The fundamental positions for each contest apparatus must be learnt properly, starting from the most simple and accessible at this age. The learning of positions to apparatus is straightforward, difficulties can only occur in the correct assessment of body position in space, especially in inverted positions (P. Dungaciu, 1982).

In gymnastics, one cannot speak of a single motric or mental capacity necessary to obtain superior results, but of a mixture of psycho-motric qualities. At

the same time it should be noted that some qualities are prevailing. Motric qualities must be developed continuously so as to meet the requirements of the IVth category. Only on the basis of appropriate physical and motric qualities can the wide variety of technical and artistic elements be achieved in women's gymnastics (Gh. Baiesu, 1972).

The development of motric qualities at this age is very necessary mainly to strengthen health and to have a good posture especially as gymnastics cultivates the aesthetic qualities of movements to each apparatus, mainly on the ground and beam (M. Solomon, 1996).

The basic motric qualities are strength, skill, speed (especially that of reaction), joint mobility and special resistance. Of combined motric qualities, the ones which need to be developed in training the IVth category gymnasts are as follows: under the speed force (explosive force), speed under power (expansion), under the speed skill and mobility (I. Tudusciuc, 1984).

Strength is a factor which influences positively the safe performance of the drills on each device.

The training of the IVth category gymnasts falls on the scapular-humeral and arms areas (M. Frum, 1993). During training, structures of exercises close to specific movements should be used, strength increasing during motric skills, performed correctly from a technical point of view (A. Stroescu, 1968).

From the methods of force development, the most used is the method of circuit work.

The functional capacity of vegetative organs is characterized by a larger area of the lung than at adult's, an increased amount of blood passing through the lungs, an increased respiratory capacity, a higher minute-volume of the heart during exercise than at rest, a high degree of elasticity of blood vessels (I. Hidi, 1991).

Material and method

Research includes an experiment for checking and testing some operational models to improve and strengthen giant circle bwd to uneven bars.

The experiment was performed on the IVth category gymnasts from Farul Constanta Sports Club.

Groups are training in the room at „TOMIS" Sports Complex, under the coordination of the coaches Olga Didilescu for the experimental group and Nicolae Forminte for the control group.

The experimental group comprises eight gymnasts with an average age of 8.6 ± 0.765 at initial testing and practise gymnastics for 2.7 ± 0.548 years.

The control group comprises eight gymnasts with an average age of 8.8 ± 0.954 at initial testing and practise gymnastics for 2.4 ± 0.839 years.

Research protocol

The experiment was conducted over a period of 6 months (October 2010 - March 2011), with 25 working weeks, excepting days off, holidays or rest days. Out of 450 hours, the experiment was alloted 30 minutes a day in the first half and 25 minutes in the second half, thus amounting to a total of 70 hours.

The duration of the experiment comprised the stages of the preparatory (15 weeks) and pre-competitive (10 weeks) period. Firstly, we conducted a 30-minute experiment totalling 45 hours, and during the pre-competitive period we reduced it to 25 minutes totalling 25 hours from a total of 70 hours.

To improve giant circle bwd we worked throughout the experiment under the same conditions in the room, temperature and at the same hour.

Tests carried out on both the control group and the experimental group took place during the training hours.

Table 1

	Experimental Group		Control Group	
	Initial Testing	Final Testing	Initial Testing	Final Testing
Age (years)	8,6 ± 0,765	9 ± 0,765	8,8 ± 0,954	9,2 ± 0,954
Weight (kg)	28,8±3,4	28,68±3.41	27,8±2,8	29,7±2,71
Waist (cm)	129,6±4.05	134,1±3,48	128,7±2,49	132,7±2,43
Average length superior	52±1,309	54,1±1,241	51,1±1,55	53,3±9,19
Average length inferior	71,8±2,168	74,1±1,64	71,5±1,92	76,3±1,84
Mobility (xº)	96±1,85	104,12±1,24	96,37±2,27	100±2,39

After the measurements characterizing the subjects, the following assessment tests were carried out both for physical and technical training.

Tests for physical training:
Test I.

From hanging with the back at fixed scale to lift the legs straight to the point of grasping. Record the number of correct repetitions for 30 seconds.

Test II.

From lying face down with legs blocked, extend the trunk with arms stretched out above your head in trunk extension. Record the number of repetitions for 30 seconds.

Test III.

From hanging at fixed bar with the body and arms outstretched, perform body traction until the chin passes over the bar. Record the number of correct repetitions for 30 seconds.

Test IV.

From standing on his/her hands on low, mobile bar, with legs stretched, the subject exercises trunk flotation. Record the number of repetitions for 30 seconds.

Tests for technical training:

Testul V.

From standing on his/her hands on top bar, the subject performs a series of 10 consecutive giant circles. Note the correct number of executions in 10 repetitions.

Test VI.

It is performed on the top bar of the device. From standing on his/her hands on the bar, the subject performs a giant circle bwd. Note the correct execution of the drill with marks from 1 to 10.

Note: For these tests we asked two national judges for help, the marks represent the average from the two judges and include a decimal. These evaluation tests were carried out both at the beginning and at the end of the experiment, on both the experimental and control group.

Operational models

The operational models presented below were made to strengthen and improve the giant circle backward on uneven bars, with the IVth category.

The accurate and fast acquiring of the element requires the use of some special equipment for helpful and preparatory drills. Thus, we used an installation which consists in the replacement of the upper wooden bar with a metallic rod, 3,4 centimetres in diameter, having attached a plastic tube outside, 3,4 centimetres in diameter. The subjects perform a fixed inlet on plastic tube with the help of textile webbing.

Due to the sliding of the plastic tube on the metallic rod, this installation allows for the easy execution of operational models, preventing the friction between the subjects' palms and the wooden bar.

The operational models proposed for strengthening and improving the giant circle backward are:

Operational model I.

From hanging at the described equipment, the subject performs swinging back and forth. Perform 3 sets of 10 repetitions.

Operational model II.

From hanging, the subject performs swinging back and forth aiming at strengthening the action prior to the so-called fight action „a discrete square" as well as keeping posture in the second part of the giant circle bwd, i.e. the lifting by standing on their hands which is a slight square (figure no. 2). Perform 3 sets of 10 repetitions per set.

Operational model III.

From standing on his/her hands, the subject performs tied giant circles bwd without help, watching the correct passage of the trunk through all the movements which make up the giant. Perform 3 sets of 10 repetitions.

Operational model IV.

From standing on his/her hands, the subject performs tied giant circles bwd without help, aiming at the accuracy and smoothness of the element. Perform 3 sets of 10 repetitions.

Note: for the accuracy of movements, the subjects perform all operational models with thin sponges between the knees and the toes of the lower limbs.

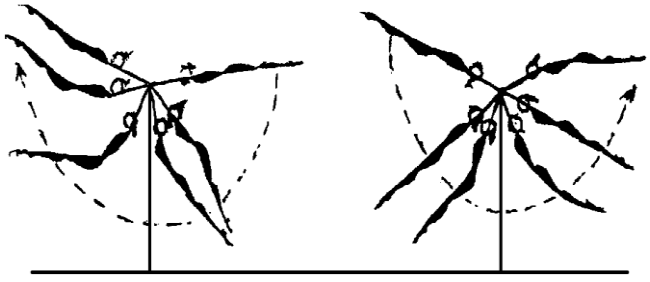

Figure no. 1

Statistical treatment

Value populations were characterized by estimating the central tendency and variability. Thus, this paper mentions the average and standard deviation in the form of the expression: $X \pm DS$.

The differences between value populations have been obtained by applying the test "t" for both

dependent samples (correlated) of low volume and independent samples (uncorrelated) of low volume.

The differences were considered significant for the following thresholds of significance: $p < 0,05$; $p < 0,005$; $p < 0,0005$.

For the interpretation of the data resulted from the tests carried out for physical and technical training, we have also used the Pearson test " r " to record existent correlations between performances on physical training and performances on technical training.

Results Table 2

Table no. 2a DIFFERENCE BETWEEN AVERAGES FROM INITIAL TESTING TO FINAL TESTING

PARAMETERS	TEST I	
	EXPERIMENTAL GROUP	CONTROL GROUP
INITIAL TESTING X ± DS	26,5 ± 2,07	26,3 ± 2,2
VARIABILITY COEFFICIENT	7,811%	8,369%
FINAL TESTING X ± DS	32,2 ± 1,58 ●●	31,3 ± 1,306 ●
VARIABILITY COEFFICIENT	4,962%	4,169%

● - significantly different statistically from the initial testing at $p < 0,005$

●●-significantly different statistically from the initial testing at $p < 0,0005$

Table no. 2.**b DIFFERENCE BETWEEN THE TWO GROUPS AT THE INITIAL TESTING**

	PARAMETERS	INITIAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 26,5 ± 2,07
CONTROL GROUP	X ± DS	26,3 ± 2,2

	Experimental Group		Control Group	
	Initial Testing	Final Testing	Initial Testing	Final Testing
TEST I abdominal curls	26,5±2,07 7,811%	32,2±1,582 4,962%	26,3±2.2 8,369%	31,3±1,306 4,169%
TEST II extensions	36,3±2,201 6,064%	43,3±1,6 3,695%	35,8±1,603 4,454%	41,5±1,197 2,884%
TEST III tractions	17,8±2,476 13,911%	24,6±2,134 8,675	18,2±2,493 13,7%	23,8±2,296 9,649%
TEST IV push-ups	17,5±1,309 7,481%	21,7±1,278 5,891	17,2±1,166 6,78%	21,5±1,195 5,559%
TEST V successful results out of 10	4,25±0,886 20,855%	9±0,755 9,44%	4±1,069 26,72%	7,25±0,709 9,77%
TEST VI grade	7,33±0,529 7,21%	9,43±0,119 1,268%	7,27±0,229 3,154%	8,21±0,3 3,658%

● – statistically insignificant from the initial testing of control group at $p > 0,05$

Table no. 2.**c DIFFERENCE BETWEEN THE TWO GROUPS AT THE FINAL TESTING**

	PARAMETERS	FINAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 32,2 ± 1,582
CONTROL GROUP	X ± DS	31,3 ± 1,306

● – statistically insignificant from the final testing of control group at $p > 0,05$

Table no. 3.a **DIFFERENCE BETWEEN AVERAGES FROM INITIAL TESTING TO FINAL TESTING**

PARAMETERS	TEST II	
	EXPERIMENTAL GROUP	CONTROL GROUP
INITIAL TESTING X ± DS	36,3 ± 2,201	35,8 ± 1,603
VARIABILITY COEFFICIENT	6,064%	4,454%
FINAL TESTING X ± DS	43,3 ± 1,6 ●●	41,5 ± 1,197 ●
VARIABILITY COEFFICIENT	3,695%	2,884%

● - significantly different statistically from the initial testing at $p < 0,005$

●●-significantly different statistically from the initial testing at $p < 0,0005$

Table no. 3.b. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE INITIAL TESTING**

	PARAMETERS	INITIAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 36,3 ± 2,201
CONTROL GROUP	X ± DS	35,8 ± 1,603

●– statistically insignificant from the initial testing of control group at $p > 0,05$

Table no. 3.c **DIFFERENCE BETWEEN THE TWO GROUPS AT THE FINAL TESTING**

	PARAMETERS	FINAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 43,3 ± 1,6
CONTROL GROUP	X ± DS	41,5 ± 1,197

●– statistically insignificant from the final testing of control group at $p > 0,05$

Table no. 4.a **DIFFERENCE BETWEEN AVERAGES FROM INITIAL TESTING TO FINAL TESTING**

PARAMETERS	TEST III	
	EXPERIMENTAL GROUP	CONTROL GROUP
INITIAL TESTING X ± DS	17,8 ± 2,476	18,2 ± 2,493
VARIABILITY COEFFICIENT	13,911%	13,7%
FINAL TESTING X ± DS	24,6 ± 2,134 ●●	23,8 ± 2,269 ●
VARIABILITY COEFFICIENT	8,675%	9,649

●●- significantly different statistically from the initial testing at $p < 0,0005$
● - significantly different statistically from the initial testing at $p < 0,005$

Table no. 4.b. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE INITIAL TESTING**

	PARAMETERS	INITIAL TESTING
EXPERIMENTAL GROUP	X ±DS	● 17,8 ± 2,476
CONTROL GROUP	X ±DS	18,2 ± 2,493

● – statistically insignificant from the initial testing of control group at $p > 0,05$

Table no. 4.c. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE FINAL TESTING**

	PARAMETERS	FINAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 24,6 ± 2,134
CONTROL GROUP	X ± DS	23,8 ± 2,296

● – statistically insignificant from the final testing of control group at $p > 0,05$

Table no. 5.a **DIFFERENCE BETWEEN AVERAGES FROM INITIAL TESTING TO FINAL TESTING**

PARAMETERS	TEST IV	
	EXPERIMENTAL GROUP	CONTROL GROUP
INITIAL TESTING X ± DS	17,5 ± 1,309	17,2 ± 1,166
VARIABILITY COEFFICIENT	7,481%	6,78%
FINAL TESTING X ± DS	21,7 ± 1,278 ●●	21,5 ± 1,195 ●
VARIABILITY COEFFICIENT	5,981%	5,559%

●●- significantly different statistically from the initial testing at $p < 0,0005$
● - significantly different statistically from the initial testing at $p < 0,005$

Table no. 5 b. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE INITIAL TESTING**

	PARAMETERS	INITIAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 17,5 ± 1,309
CONTROL GROUP	X ± DS	17,2 ± 1,166

● – statistically insignificant from the initial testing of control group at $p > 0,05$

Table no. 5.c. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE FINAL TESTING**

	PARAMETERS	FINAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 21,7 ± 1,278
CONTROL GROUP	X ± DS	21,5 ±1,195

●– statistically insignificant from the final testing of control group at $p > 0,05$

Table no. 6.a. **DIFFERENCE BETWEEN AVERAGES FROM INITIAL TESTING TO FINAL TESTING**

PARAMETERS	TEST V	
	EXPERIMENTAL GROUP	CONTROL GROUP
INITIAL TESTING X ± DS	4,25 ± 0,886	4 ± 1,096
VARIABILITY COEFFICIENT	20,855 %	26,72 %
FINAL TESTING X ± DS	9 ± 0,755 ●●	7,25 ± 0,709 ●
VARIABILITY COEFFICIENT	9,44 %	9,77 %

●●- significantly different statistically from the initial testing at $p < 0,0005$
● - significantly different statistically from the initial testing at $p < 0,005$

Table no. 6.b. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE INITIAL TESTING**

	PARAMETERS	INITIAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 4,25 ± 0,886
CONTROL GROUP	X ± DS	4 ± 1,069

● – statistically insignificant from the initial testing of control group at $p < 0,05$

Table no. 6.c. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE FINAL TESTING**

	PARAMETERS	FINAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 9 ± 0,755
CONTROL GROUP	X ± DS	7,25 ± 0,709

●– statistically insignificant from the final testing of control group at $p < 0,0005$

Table no. 7.a. **DIFFERENCE BETWEEN AVERAGES FROM INITIAL TESTING TO FINAL TESTING**

PARAMETERS	TEST VI	
	EXPERIMENTAL GROUP	CONTROL GROUP
INITIAL TESTING X ± DS	7,33 ± 0,529	7,27 ±0,229
VARIABILITY COEFFICIENT	7,21%	3,154%
FINAL TESTING X ± DS	9,43 ± 0,119 ●●	8,21 ± 0,3 ●
VARIABILITY COEFFICIENT	1,268%	3,658%

●● - significantly different statistically from the initial testing at $p < 0,0005$
● - significantly different statistically from the initial testing at $p < 0,005$

Table no. 7 b. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE INITIAL TESTING**

	PARAMETERS	INITIAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 7,33 ± 0,529
CONTROL GROUP	X ± DS	7,27 ± 0,229

● – statistically insignificant from the initial testing of control group at $p > 0,05$

Table no. 7.c. **DIFFERENCE BETWEEN THE TWO GROUPS AT THE FINAL TESTING**

	PARAMETERS	FINAL TESTING
EXPERIMENTAL GROUP	X ± DS	● 9,43 ± 0,119
CONTROL GROUP	X ± DS	8,21 ± 0,3

●– statistically insignificant from the final testing of control group

Table no. 8 **CORRELATIONS**

	TEST V	TEST VI
TEST I	0,7164	0,7293
TEST II	0,2365	0,2987
TEST III	0,6421	0,6981
TEST IV	0,8972	0,8523

$r < 0,6215$ – correlated statistically insignificant at $p > 0,05$;
$r > 0,6215$ – correlated statistically significant at $p < 0,05$;

r > 0,7887 -- correlated statistically significant at p < 0,01;

Discussions

Comparative analysis of recorded parameters in the experimental group from initial testing to final testing.

■ Regarding the weight of the experimental group subjects, it was noticed an increase of 1.8 kg from initial testing to final testing, which indicates a normal progress of growth at this age. This increase is not large and therefore it does not affect in any way (±) the correct execution of the giant circle backward.

■ With regard to the subjects' size in the experimental group, it was registered an increase of 4,5cm from initial testing to final testing.This parameter has also recorded increases in accordance with the subjects' age, without influencing the element execution.

■ With regard to the length of the upper and lower limbs, there are noticed some increases by 2.1cm and 2.3 cm respectively, from initial testing to final testing. This parameter is very important in consolidating the element, but insignificant increases from the initial testing show a small influence.

■ Concerning the scapular-humeral mobility, the subjects have registered significant increases of 8 degrees from initial testing to final testing. This statistically significant increase has a major influence on the accuracy of element execution, contributing to the improvement of a good posture and the easy passing through movement.

■ With regard to test I, the difference between averages from initial testing to final testing is of 5.7 abdominal curls, this being significantly different statistically at p < 0,0005 (table 2.a). We mention that abdominal strength is very important in performing the element, maintaining the vertical position of the body during execution. The result is that the increases are important and necessary.

■ With regard to test II, the difference between averages from initial testing to final testing is of 6.8 trunk extensions, this being significantly different statistically at p < 0,0005 (table 3.a.). We mention that back muscles tone contributes to adopting a good posture during execution, hence the progress which is registered at this test highly influences the strengthening of the giant circle backward.

■ In terms of tests III and IV, the subjects have registered increases of 6.8 tractions and 4.2 push-ups, respectively, these being significantly different statistically at p < 0,0005 (tables 4.a. and 5.a.). Arms force is a very important quality both in flexion and in extension, and it must be developed to higher parameters. The lack of force leads to the failure of the partial actions of the element, both in hanging and in arms support. We consider that the progress registered by the gymnasts is best for the strengthening of the giant circle backward.

■ The analysis of the results obtained by the experimental group at test VI shows a difference of 4.7 correct executions, this being significantly different statistically from the initial testing at p < 0,0005 (table 6.a.). This indicates a considerable progress registered by the subjects, largely due to the operational models proposed and applied to the experimental group.

■ The analysis of the results obtained by the experimental group at test V shows an increase in grade from initial testing to final testing with 2.10 units (points), which is significantly different statistically from initial testing at p < 0,0005 (table 7.a.). This shows a real progress technically, the grade reflecting the level of technical preparation.

■ With regard to anthropometric parameters, the differences are approximately equal to the results of the experimental group, the groups having the same initial level of development. We state that the development of anthropometric parameters is not subject to research.

■ Regarding the results of the physical tests, the subjects of the control group have registered increases significantly different statistically at p < 0,0005 (tables 2a,3a,4a,5a.), which shows that this group has the physical support necessary to the consolidation of the giant circle bwd element.

■ In terms of physical tests, the difference between the averages of the two groups at initial testing is insignificantly different statistically at p > 0,05 (tables 2b,3b,4b,5b), this is normal because both groups were at the same level of training at the beginning of the experiment.

The comparative analysis of the two groups' averages at final testing indicates a statistically insignificant difference at p > 0,05 (tables 2c,3c,4c,5c), this is because, in terms of physical training, both groups have worked by fairly standard practices.

■ Regarding test V, the analysis of the two groups shows a statistically insignificant difference from the initial testing at p > 0,05 (table 6.b.), which is due to the initial homogeneity of the two groups. However, at the final testing, the difference between averages is significantly different statistically from the control group at p < 0,0005 (table 6.c.). This shows a significant improvement of the technique at the level of the experimental group, which is due to the operational models applied.

■ Regarding test VI, the comparative analysis of the two groups shows an insignificant difference statistically at p > 0,05 (table 7.b.) at the initial testing to the control group, and a significant difference statistically at p < 0,0005 (table 7.c.) at the final testing against the control group, indicating that the proposed operational models have contributed to the correct acquiring of the technique, significantly improving their grades for the correct execution of the element.

■ When correlating test I of physical training with tests V and VI of technical training, we noticed significant results statistically (r > 0,6215) at p < 0,05 (table 8.). The positive outcome of this correlation is favourable to us since it confirms the close relationship

between the progress registered at the level of abdominal muscles and the technical progress made.

■ When correlating test II of specific physical training with tests V and VI of technical training, we found insignificant results statistically ($r < 0,6215$) at $p > 0,05$ (table 8.). Hence we conclude that the development level of back muscles does not influence significantly sport performance in terms of strengthening the element.

■ When correlating test III of physical training with tests V and VI of technical training, we noticed significant results statistically ($r > 0,6215$) at $p < 0,05$ (table 8.). This demonstrates that the improvement of this drill performance helps strengthen the giant circle backward.

■ When correlating test IV of physical training with tests V and VI of technical training, we found statistically significant results ($r < 0,7887$) at $p > 0,005$ (table 8.). This proves that the development level of arms muscles significantly influences progress in the technical preparation.

Following the above we conclude that the progress made by gymnasts on the physical level has greatly helped them in the process of strengthening giant circle backward.

Conclusions and proposals

Here are the main conclusions to be drawn from the above discussions:

■-as a result of reflecting the findings of the technical tests, we can conclude that the proposed operational models have led to the consolidation of the giant circle backward at uneven bars.

■-by evaluating the percentage in which the selected operational models have improved technical performance, we notice that within test V, the experimental group has registered increases of 15.3% more than the control group (47,8% progress for the experimental group compared to 32,5% progress for the control group), and within test VI, the experimental group has registered increases of 11,6% more than the control group (21% progress for the experimental group as against 9,4% progress for the control group).

■-the reflection of the physical tests' results shows that IVth category gymnasts have the necessary physical support to strengthen the giant circle backward.

■-as a result of analyzing the findings of the correlations between the final level of technical training and the final level of physical training, we conclude that the achieved performances of the gymnasts on the physical level represent the essential support for consolidating the giant circle backward. From this we can infer the close link between technical and physical preparation.

For the future, we suggest including in the training programmes of IVth category gymnasts at uneven bars the performance on the proposed equipment by means of the selected operational models, due to the rapid growth of technical prowess.

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THE IMPLEMENTATION OF THE SELECTION AND PREPARATION IN FOOTBALL, OF THE CHILDREN WITH THE AGE 6-10 YEARS

DRĂGAN AURELIAN[1], PLOIEŞTEANU CONSTANTIN[1], BARBU DUMITRU[2]

Abstract
The practication of the football game by the children with the age 6 to 10 years of age constitutes an element of maximum importance for the achievement of the skills of specific movement.
Purpose: The aim is represented by the fastening of the more important aspects binded by the selection and preparation under all the aspects of the sporting training of the children of 6 to 10 years of age, age extreme of important in the footballistical development of the future performer.
Methods and procedures: In the view of the achievement of the paper we used the next methods of research: the scientifical documentation, the statistical methods, the method of the observation, the experimental method.
Results: In the cours of this research, the principal factor which was developed it's the maximum speed in specific condition, namely the running of speed.
Discusions: The knowledge of the characteristics of specific preparation at the age 6 to 10 years of age conducts at the scientifical leading of the sporting training and in this way we can to avoid the empirical preparation, without precise rules.
Conclusions: The knowledge of the characteristics of age, of the level concerning the development of the driving qualities through trials of control and of the level concerning the technical and tactical preparation through tests of profile, contributes at the permanent knowledge of the level of progress and makes possibly the co-optation in the batchs of performance of the children with actual qualities for football.
Key words: selection; preparation; speed; talent; football.

Introduction

To practise the football play by the children of young age 6 to 10 years of age constitutes an element of maximum importance for to improve them health, for to form the skills of specific movement, especially if the training it achives under the direction of the physical education teacher or football coach.

The age of 6 to 10 years of age is a period in which the pupils register great progresses concerning the driving activity. The natural skills and the base skills it perfection, while on them matter it forms and it consolidates new others, more complex skills.

For these reasons, this age is the more indicated for the development of the driving qualities, motive for which it's named the age of the first performances.

The indexes which define the speed, the ability and the aerob resistance rapidly grow. Simultaneously with the growth of these indexes we must to offer a distinct attention to the mobility which, if she does not upholded in a adequate mode, she can to regress.

Also, at this age, in the activity destined to the development of the driving qualities we will offer a distinct attention for to graduate the effrot in the development of the force and the speed in system of resistance.

The force exercices it recommend to be used with medium and undermaximal intensity as effect of the process still unfinished for to consolidate the locomotory apparatus. Identical and the exercices for to development the speed in system of resistance will be used with attention, if we will have in view that neither the functions of the apparatuses for circulation and breathing don't touched the maximum level of development (M. Giacomini, 2009).

Purpose

The aim of the research is represented of to establish the more important aspects binded of the selection and the preparation in all aspects of the sporting training of the children of 6 to 10 years of age, extreme of important stage in the footballistical development concerning the futuring performer.

Concerning the achievement of the research, we formulated the next hypothesises:

- We suppose that the theoretical focalisation of the specific preparation characteristics for 6 to 10 years of old and them application will conduct at the scientifical conducting of the sporting training.
- We suppose that the theoretical focalisation of the selection characteristics and them application will conduct at the the fair establisment of the components concerning the preparing group.

Research methods and procedures:

In the aim of the achievement concerning this paper we used the next research methods: the scientifical documentation, the statistical method, the observation method, the experimental method. The The results obtained by the players will constitute points of view in the preparation of the footballers at this level.

The subjects of the research were represented by the experimental groups constituted from by 20 children, footballers of Secondary School with Sporting Programme from Galați, borned in the

[1] Physical Education and Sport Faculty „Dunărea de Jos" University of Galați, ROMANIA
[2] Physical Education and Sport Faculty University of Craiova, ROMANIA
Email: aureldragan62@yahoo.com
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years 2001 and 2002.

In experiment we used the next driving trials:

1. Speed running on 10, 20, 30 metres: Start from legs, it bends at sonorous signal. It runs by 2, on synthetical fiels, two repetitions and it notes the best.

Results:

1. *Speed running on 10 m*

Table 1. The arithmetical average of the results obtained at speed running on 10 m by the grups of children from at L.P.S. Galați

No.	Name and firstname	Speed running 10m (s)		Name and firstname
		g. 2001	g. 2002	
1.	B.M.	2,25	2,87	D.T.
2.	B.A.	2,44	3,00	C.S.
3.	S.L.	2,57	2,78	F.P.
4.	R.R.	2,25	2,46	T.A.
5.	L.A.	2,38	3,21	C.A.
6.	N.S.	2,37	2,85	S.L.
7.	Ş.D.	2,44	2,66	G.B.
8.	F.D.	2,50	2,93	B.C.
9.	V.R.	2,43	2,38	N.O.
10.	F.V.	2,38	2,64	V.A.
11.	B.R.	2,50	2,71	Z.A.
12.	I.A.	2,37	2,99	O.F.
13.	O.N.	2,55	3,06	A.D.
14.	N.A.	2,43	3,03	J.A.
15.	N.D.	2,37	2,59	P.L.
16.	S.R.	2,55	2,68	G.A.
17.	B.R.	2,32	2,86	G.C.
18.	B.T.	2,37	2,92	M.N.
19.	P.R.	2,25	2,77	C.F.
20.	P.C.	2,41	2,62	E.D.
Arithmetical average		2,406	2,800	
Minimum		2,25	2,38	
Maximum		2,57	3,21	

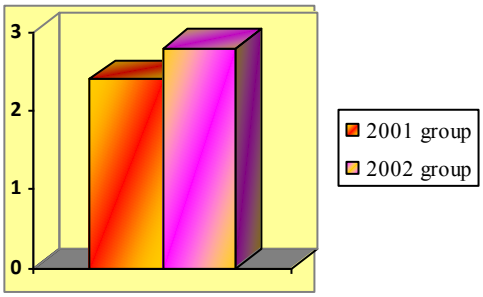
Table 2. The average level of speed running on 10 m

Indicators	Speed running 10 m 2001	Speed running 10 m 2002
The average level	2,406	2,800

Table 4. The average level of speed running on 20 m

2. Jump in length of on place.

3. To maintain the ball in air with the skilful and unskilful leg, maximum number. The ball it raises in air approximately 30-40 cm.



Type 1. Speed running on 10 m - the arithmetical averages

We observe that the diference between the two groups is of 0,394 seconds (2,406 seconds – 2001 group face of 2,800 seconds - 2002 group) (A. Drăgan, 2009).

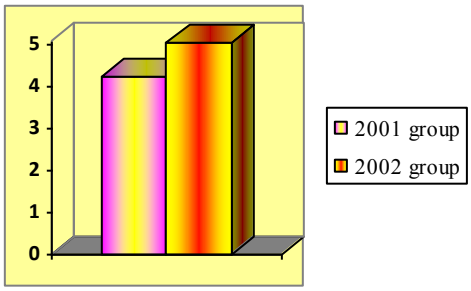
2. Speed running on 20 m

Table 3. The arithmetical average of the results obtained at speed running on 20 m by the grups of children from at L.P.S. Galați

No.	Name and firstname	Speed running 20m (s)		Name and firstname
		g. 2001	g. 2002	
1.	B.M.	4,12	5,31	D.T.
2.	B.A.	4,19	5,56	C.S.
3.	S.L.	4,31	5,20	F.P.
4.	R.R.	3,74	4,84	T.A.
5.	L.A.	4,43	5,82	C.A.
6.	N.S.	4,31	5,45	S.L.
7.	Ş.D.	4,43	4,66	G.B.
8.	F.D.	4,62	5,13	B.C.
9.	V.R.	4,25	4,18	N.O.
10.	F.V.	4,44	5,27	V.A.
11.	B.R.	4,39	5,30	Z.A.
12.	I.A.	4,12	5,29	O.F.
13.	O.N.	4,30	5,06	A.D.
14.	N.A.	4,24	5,28	J.A.
15.	N.D.	4,05	4,65	P.L.
16.	S.R.	4,37	5,03	G.A.
17.	B.R.	4,19	4,88	G.C.
18.	B.T.	4,32	4,99	M.N.
19.	P.R.	4,21	4,82	C.F.
20.	P.C.	3,94	4,27	E.D.
Arithmetical average		4,248	5,049	
Minimum		3,74	4,18	
Maximum		4,62	5,82	

Indicators	Speed running	Speed running

	20 m 2001	20 m 2002
The average level	4,248	5,049



Type 2. Speed running on 20 m - the arithmetical averages

The diference between the two groups is of 0,801 seconds (4,248 seconds – 2001 group face of 5,049 seconds 2002 group).

3. Speed running on 30 m

Table 5. The arithmetical average of the results obtained at speed running on 30 m by the grups of children from at L.P.S. Galați

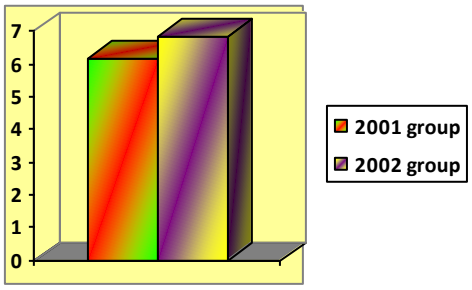
No.	Name and firstname	Speed running 30m (s)		Name and firstname
		g. 2001	g. 2002	
1.	B.M.	5,87	6,98	D.T.
2.	B.A.	6,18	6,96	C.S.
3.	S.L.	6,12	6,70	F.P.
4.	R.R.	5,56	6,24	T.A.
5.	L.A.	6,37	7,41	C.A.
6.	N.S.	6,00	6,78	S.L.
7.	Ş.D.	6,62	6,58	G.B.
8.	F.D.	6,58	7,31	B.C.
9.	V.R.	6,43	6,05	N.O.
10.	F.V.	6,45	6,97	V.A.
11.	B.R.	6,61	7,42	Z.A.
12.	I.A.	6,24	7,11	O.F.
13.	O.N.	6,37	7,21	A.D.
14.	N.A.	6,19	6,97	J.A.
15.	N.D.	6,07	6,86	P.L.
16.	S.R.	6,38	7,08	G.A.
17.	B.R.	6,05	6,68	G.C.
18.	B.T.	5,80	6,87	M.N.
19.	P.R.	6,01	6,72	C.F.
20.	P.C.	5,81	6,23	E.D.
Arithmetical average		6,185	6,856	
Minimum		5,56	6,05	
Maximum		6,62	7,42	

Table 6. The average level of speed running on 30 m

Indicators	Speed	Speed

Table 8. The average level of the jump in length

	running 30 m 2001	running 30 m 2002
The average level	6,185	6,856



Type 3. Speed running on 30 m - the arithmetical averages

Also, in this case the difference between 2002 group and 2001 group is of 0,671 seconds (6,185 s. – 2001 group face of 6,856 seconds – 2002 group).

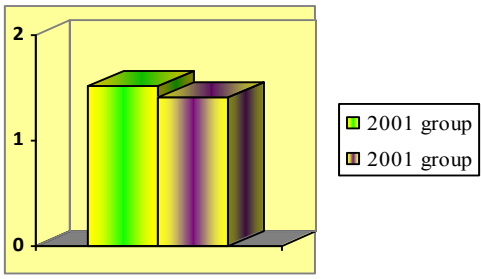
4. The jump in length of on place

Table 7. The arithmetical average of the results obtained at the jump in length of on place by the grups of children from at L.P.S. Galați

No.	Name and firstname	The jump in length of on place (m)		Name and firstname
		g. 2001	g. 2002	
1.	B.M.	1,70	1,40	D.T.
2.	B.A.	1,50	1,25	C.S.
3.	S.L.	1,40	1,50	F.P.
4.	R.R.	1,70	1,35	T.A.
5.	L.A.	1,55	1,30	C.A.
6.	N.S.	1,50	1,45	S.L.
7.	Ş.D.	1,40	1,20	G.B.
8.	F.D.	1,20	1,45	B.C.
9.	V.R.	1,60	1,65	N.O.
10.	F.V.	1,40	1,50	V.A.
11.	B.R.	1,10	1,00	Z.A.
12.	I.A.	1,55	1,25	O.F.
13.	O.N.	1,50	1,65	A.D.
14.	N.A.	1,60	1,30	J.A.
15.	N.D.	1,55	1,40	P.L.
16.	S.R.	1,60	1,35	G.A.
17.	B.R.	1,55	1,55	G.C.
18.	B.T.	1,70	1,60	M.N.
19.	P.R.	1,70	1,40	C.F.
20.	P.C.	1,55	1,55	E.D.
Arithmetical average		1,517	1,405	
Minimum		1,1	1	
Maximum		1,7	1,65	

of on place

Indicators	Jump in length of on place 2001	Jump in length of on place 2002
The average level	1,517	1,405



Type 4. Jump in length of on place - the arithmetical averages

The diference between the two groups is of 11,2 cm (1,517 metres – 2001 group face of 1,405 metres - 2002 group).

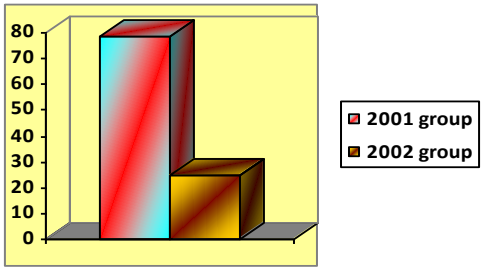
5. To maintain the ball in air with the skilful leg

Table 9. The arithmetical average of the results obtained at to maintain the ball in air with skilful leg by the grups of children from at L.P.S. Galați

No.	Name and firstname	To maintain the ball in air with the skilful leg (max. number of repetitions		Name and firstname
		g. 2001	g. 2002	
1.	B.M.	202	23	D.T.
2.	B.A.	100	17	C.S.
3.	S.L.	82	32	F.P.
4.	R.R.	190	45	T.A.
5.	L.A.	60	5	C.A.
6.	N.S.	31	7	S.L.
7.	Ş.D.	22	35	G.B.
8.	F.D.	43	26	B.C.
9.	V.R.	56	21	N.O.
10.	F.V.	64	17	V.A.
11.	B.R.	117	12	Z.A.
12.	I.A.	45	18	O.F.
13.	O.N.	74	18	A.D.
14.	N.A.	60	11	J.A.
15.	N.D.	55	24	P.L.
16.	S.R.	42	34	G.A.
17.	B.R.	76	62	G.C.
18.	B.T.	31	51	M.N.
19.	P.R.	189	14	C.F.
20.	P.C.	36	22	E.D.
Arithmetical average		78,75	24,7	
Minimum		22	5	
Maximum		202	62	

Table 10. The average level of to maintain the ball in air with the skilful leg

Indicators	To maintain the ball in air with the skilful leg 2001	To maintain the ball in air with the skilful leg 2002
The average level	78,75	24,7



Type 5. To maintain the ball in air with the skilful leg - the arithmetical averages

Also, there is a diference between the two groups is of 54,05 repetitions (78,75 repetitions – 2001 group face of 24,7 repetitions - 2002 group).

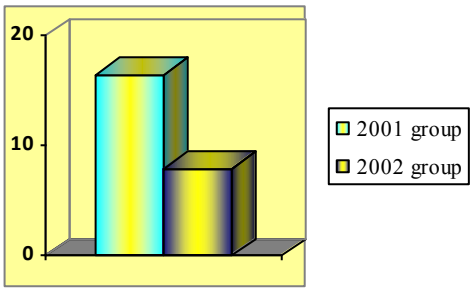
6. To maintain the ball in air with the unskilful leg

Table 11. The arithmetical average of the results obtained at to maintain the ball in air with unskilful leg by the children from at L.P.S. Galați

No.	Name and firstname	To maintain the ball in air with unskilful leg (max. number of repetitions)		Name and firstname
		g. 2001	g. 2002	
1.	B.M.	69	5	D.T.
2.	B.A.	10	7	C.S.
3.	S.L.	25	14	F.P.
4.	R.R.	13	2	T.A.
5.	L.A.	26	9	C.A.
6.	N.S.	4	7	S.L.
7.	Ş.D.	10	1	G.B.
8.	F.D.	12	5	B.C.
9.	V.R.	5	6	N.O.
10.	F.V.	3	9	V.A.
11.	B.R.	20	17	Z.A.
12.	I.A.	23	22	O.F.
13.	O.N.	11	6	A.D.
14.	N.A.	10	9	J.A.
15.	N.D.	11	4	P.L.
16.	S.R.	16	2	G.A.
17.	B.R.	14	7	G.C.
18.	B.T.	21	9	M.N.
19.	P.R.	22	10	C.F.
20.	P.C.	3	6	E.D.
Arithmetical average		16,4	7,85	
Minimum		3	1	
Maximum		69	22	

Table 12. The average level of to maintain the ball in air with the unskilful leg

Indicators	To maintain the ball in air with the unskilful leg 2001	To maintain the ball in air with the unskilful leg 2002
The average level	16,4	7,85



Type 6. To maintain the ball in air with the unskilful leg - the arithmetical averages

There is a diference between the two groups, namely of 8,55 repetitions (16,4 repetitions – 2001 group face of 7,85 repetitions - 2002 group).

In synthesis, we can calculate the indexes of the growth concerning the average levels for the tests applied at 2001 group face of 2002 group (A. Drăgan, 2009).

Table 13. The indexes of the growth concerning the average levels of the trials

The test	The group		Indexes
	2001	2002	
Speed running on 10 m	2,406	2,800	85,92 %
Speed running on 20 m	4,248	5,049	84,14 %
Speed running on 30 m	6,185	6,856	90,21 %
The jump in length of on place	1,517	1,405	107,97 %
To maintain the ball in air with the skilful leg	78,75	24,7	318,83 %
To maintain the ball in air with the unskilful leg	16,4	7,85	208,92 %

The indexes of the growth concerning the average levels of the tests applied at 2001 group face of 2002 group were calculated after the next formula:

$$I^{\bar{x}}_{2001\,group\,/\,2002\,group} = \frac{\bar{x}_{2001\,group}}{\bar{x}_{2002\,group}}$$

where:

$\bar{x}_{2001\,group}$ = the average level of the test applied at 2001 group;

$$\bar{x}_{2001\,group} = \frac{\sum_{i=}^{n} x_i^{2001\,group}}{n} = \frac{\sum_{i=}^{20} x_i^{2001\,group}}{20}$$

$x_i^{2001\,group}$ = the values of the variable researched over the twenty children from 2001 group;

n = number of children who are tested from 2001 group;

$\bar{x}_{2002\,group}$ = the average level of the test applied at 2002 group.

$$\bar{x}_{2002\,group} = \frac{\sum_{i=}^{n} x_i^{2002\,group}}{n} = \frac{\sum_{i=}^{20} x_i^{2002\,group}}{20}$$

$x_i^{2002\,group}$ = the values of the variable researched over the twenty children from 2002 group;

n = number of children who are tested from 2002 group.

We observe in the table number 13, that:

- at the trial *speed running on 10 metres*, the average level of 2001 group subtracted with 14,08 % face of the average level of 2002 group, which it means an improvement of the speed running on 10 metres for the children of 2001 team;
- at the test *speed running on 20 metres*, the average level of 2001 group subtracted with 15,86 % face of the average level of 2002 group, which also,

it means an development of the speed running on 20 metres for the children of 2001 team;

- at the trial *speed runnimg on 30 metres*, the average level of 2001 group subtracted with 9,79 % face of the average level of 2002 group, which it means an improvement of the speed running on 30 metres for the children of 2001 team;

- at the test *jump in length of on place*, the average level of 2001 group growed with 7,97 % face of the average level of 2002 group, which it means that the children of 2001 team jump on horizontaly more good face of the children of 2002 group;

- at the trial *to maintain the ball in air with the skilful leg*, the average level of 2001 group growed with 218,83 % face of the average level of 2002 group, which it means that at this test the children of 2001 group are very good prepared face of the children of 2002 group;

- at the trial *to maintain the ball in air with the unskilful leg*, the average level of 2001 group growed with 108,92 % face of the average level of 2002 group, which it means an improvement of this test for the children of 2001 team.

Discusions

The speed or agility at 6 to 10 years old is a complex skill with testimony under more shapes. These complexity is confirmed by the fact that from she result three elements, all fundamentaly, but heterogenous: reaction speed, agility of the simple movement and her frequency (T.O. Bompa, 2002).

The reaction speed is strong joined by a series of central factors and mental factors.

The agility of the simple movement is influenced by force and of the frequency of the movement in the same time.

So, the three forms of speed present distinct developments in the time of the growth period: some speeds are related so much with the coordinative skills, and from this motive distinct authors, face of what it admits in traditional mode, don't consider the speed as a conditional skill (G. Stănculescu, 2003).

In the time of the training, the principal factor which musts to be developed it's the maximum speed in specific conditions, as exemple, the speed running and the reaction speed. This musts to be maked in a state of relative physical freshing (C. Ploieşteanu, 2005).

Also, the speed is often combined with the force and the resistance.

Conclusions

The knowledge of the characteristics, concerning the specific preparing for 6 to 10 years old, contributes at the scientifical leading of the sporting training. So we can to avoid the empirical preparing, without precise rules.

Also, the knowledge of the age characteristics, of the level concerning the development of the driving qualities through control trials and of the level for the technical and tactical preparing through profile tests, contribute to the permanent knowledge of the progress level and make possibly the cooptation in the performance batch of the children with real qualities for football.

At 6 to 10 years old is important to work in a special mode for speed and ability, but we don't must to neglect the development of the resistance at specific efforts.

For to attract the children in football, the coachs must to achieve an availability towards an efficacy comunication with the parents, but and with the children.

The age 6 to 10 years old is the more important preparing age, because it forms the footballistical skills in fair mode and in this period it cans take an earnest option concerning a strong football team.

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PROMOTION IN HIGH PERFORMANCE FOOTBALL – CASE STUDY: FOOTBALL CLUB BIHOR 2000 – 2010

DUMITRESCU GHEORGHE[1], NAOM IOAN[2]

Abstract
Purpose. This paper work deals with the way in which the members of the junior teams from the finishing year (A juniors) continued their sports activity after the end of this stage of their training.
The objective. The improvement of the juniors' promotion process towards high performance football and the decrease of sports abandonment rate.
Material and methods. The paper is based on observations made during a period of ten years regarding the path taken by the members of A junior teams from F. C. Bihor.
Results. It was taken into consideration the number of players who took the step towards 1st, 2nd or 3rd league teams as well as the players who managed to play in international competitions (European League or Champions' League) or in representative teams.
Conclusions. The rate of promotion is still low and many players with possibilities to progress are lost along the way. The removal of causes which lead to sports abandonment could increase the chances of juniors to promote in high performance football.
Key words: football, juniors, promotion, seniors.

Introduction

After the junior period, the players enter the world of adult football. They will be successful at the highest level of professional football or at a lower level, they will be amateur players or they will give up the competitional activity.

For most of the 18 year olds this step is too big, especially from tactical and mental point of view.

Pressure increases because of the huge significance of game results, of supporters, of their own popularity, mass-media and financial aspects. The teammates also put pressure because of criticism (R. Michels, 2002).

Part of the players will continue their formation in the second team, when it exists. In this team there are players of all ages, players from the first team who are in recovery after an injury, players who have not managed to reach a level high enough for the first team and are disappointed, young promising players.

Some players have the courage to get transferred to a smaller club, but there they will receive enough playing time in the first team, gaining thus precious experience.

The existence of the club's second team is very important (G. Dumitrescu, G. Silaghi, 2010).

Besides the fact that the best juniors can be active along with the seniors, at the end of the junior period, the presence of the second team can give continuity to their instruction and it can represent the accumulations for the leap in the first team.

When the coaches of the first team will work tactically using the second team as sparing-partner, the players in this group can make themselves noticed.

It is obvious that most talents at the age of 18-21 go through a difficult phase. Many talented players never grow beyond this phase and give up. As we have said before, the transition to adult football demands specific mental strength which can develop only after the age of 18 and by playing in tough competitions.

Especially during the first months, the talented players are rigid in manifesting their own qualities because they either try too hard to confirm or are too scared to take initiative. Few coaches have the courage and opportunity to let the talented players progress slowly.

The most important assessment criterion of this phase is behaviour in stake games, under regular conditions (I. Ionescu, M. Demian, 2007).

They will be successful only in a club where the coach has the courage to give a chance to those truly talented. This works only in a team which is already successful and has enough confidence in its own powers to include a young talent.

The coaches are given little space and little patience. The team must have results. The coach must impose his will.

When things do not work well, pressure increases from one day to another. It is not good for the team to take pity on the young players. The first division teams must bring performance, not develop young talents.

Therefore, the period between the age of 19 and that of 21 is decisive in defining the football player.

Under present conditions, when the time players have becomes less and less for instruction and education and the game becomes more and more dynamic, instruction requires special attention from coaches.

Through proper instruction, there will be fulfilled the missing pieces the players come with in the moment of their promotion to the senior teams (C. Ploeşteanu, 2007).

This is the reason why professional clubs are preoccupied with founding a division for the 19-21

[1] Faculty of Physical Education and Sport, University of Oradea, ROMANIA
[2] F.C. Bihor, ROMANIA
Email: gdpitesti@yahoo.com
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year-olds which should replace the existing competition for the second team.

There is a great demand of specialized coaches in order to manage the difficulties of this age category and who are well aware of the priorities of these players.

The transition phase towards top football should be made through strong competition, essential to allow the passage to the next top level. More than ever, due to the high requirements, the step from children and junior football towards high performance senior football is too big for most players.

Top clubs rather invest in foreign players which should instantly raise the performance level.

Because of this, it has become even more difficult for the 18 year-olds and over to obtain a place in a first division team or even a place on the substitutes' bench. It is often preferable to be transferred and gather precious experience at a smaller club. This also requires strength of character (R. Michels, 2002).

This category requires a coach who should stimulate, offer advice and do counseling work.

There are very many aspects the young player must pay attention to.

The real playing qualities: that is the courage to take part in the battle and not be afraid of making mistakes.

They should be self-confident without exaggeration; they should be intelligent, aggressive, yet without blind rage.

They should have resistance, they should never quit.

They should understand the necessity to play simply.

They should play being aware of their duties.

They should be calm and focused, capable to quickly anticipate the situation, capable to manipulate the refereeing; they should have the courage to take risks whenever necessary and in the following moment they shouldn't take them on purpose.

And they should always be the best they can be; they should want to be winners!

Last but not least: responsibility for team performance should always motivate them to give more than they are expected to give (R. Michels, 2002).

The right training mentality. Maximum effort must be given in training.

This creates a sense of their own rhythm and the desire to train extra in order to work their own specific qualities.

Receptivity when tactical requirements are taught. Care for themselves and for their equipment.

Communication. Having good relationships with their teammates. Many discussions about football and positive contribution to the training atmosphere.

A professional life style. Self-assumed discipline. They should live according to their age but they should be able to control themselves. A "healthy" life style at home works miracles. They should know the correct recreational activities. They should behave like experts when dealing with the press.

They should be friendly with supporters. They should show respect to teammates, administrative staff, leading and technical staff. They should not encounter difficulties in living a sportive's life.

Is it unusual that so many promising players give up?

Obviously it is not necessary that a talented football player should possess all the qualities mentioned above in order to be successful. It is all about a right proportion. It is possible to work hard to develop the desired qualities!

This is not an easy task. This type of players, during this difficult period, need support from parents, team leaders, coach and colleagues.

An important question for coaches referring to these young talents would be: are a player's qualities tightly connected to his character or they can be influenced separately from character?

From a great coach's experience (R. Michels, 2002), it can be deduced the fact that within the boundaries of character, there is room for influence, positive or negative.

The living and working environment plays a major part in this.

Different people may have a positive or negative influence on a player. In the living and working environment there might occur numerous situations in which the talented young man's personality is open to outside influence. Family members, teachers, friends, girl-friends and, especially in the world of football, coaches and leaders, may build up or crash the young player's character.

Often the young players do not realize that people around them worship them and they are not critical to their behaviour, especially if their popularity is increasing.

These players would have more to gain from positive criticism. A player is less pampered when a mirror of truth is constantly kept in front of him the when he is overwhelmed with compliments and his opinions are permanently supported.

The experience of former football players may have a great influence in educating the young players, especially when their experience is structured by the necessary theoretical knowledge.

It is understandable that they desire to train at a higher level, however it can be a big enough challenge to play a key role in the young football players' education.

The introduction of the player into the senior team is a pretentious process for the coach. Each introduction of a new member in the team is an intervention in the relationship structure of the respective group. The coach is the one who must create the optimum climate and must find the proper moment for promotion.

The senior team's ranking in the championship is important for the inclusion of a young

talent in the first team's lot and his training for promotion.

If the team is fighting to avoid demotion, and every point counts, the climate will not be favourable for a young player. On the other hand, a team in which the results are good is in the situation to offer, in certain matches, time to the young player to accommodate with the official matches atmosphere and he can better relate to his colleagues (D. Apolzan, 1996).

The position also plays an important part in promotion: He either has the opportunity to play in a position he knows from the phases he went through as a junior, or there must be found another position in the team as that one is taken by a player. Usually, the player with an offensive profile can enter easier during a match while a defender will hardly replace a player as this position requires more confidence.

The young players' evolution must be followed with patience, perseverance and pedagogical tact by their coaches.

The cooperation between the senior team's coach and the Children and Junior Center is very important.

The guiding lines regarding the selection and formation of certain players, for certain positions, with certain characteristics (physical, technical-tactical) are decisive. The reason for this is that the promotion moment must find the young player in the senior team prepared from all points of view (D. Apolzan, 1996).

The young player must overcome a series of complex issues and he must manage some new situations. The previous trainings with the team give him the possibility to know atmosphere, the habits, exigencies, relationships.

The mixed matches of the senior and junior team help equalize the existing conditions from tactical and psychic point of view. It must be emphasized the fact that without special help from the coach, the young players usually do not cope with the first successes and especially with the first failures.

We have said before that the age of the end of junior period can be a moment in which the young player is tempted to abandon performance activity. Causes for this abandonment can be (M. Rădulescu. V. Cojocaru, 2003):

- expectations impossible o satisfy;
- attraction of other domains;
- lack of success;
- injuries;
- lack of playing possibilities;
- bad behaviour towards the group;
- external pressure.

The result of the formation process is the promotion to a higher level and the ideal from this point of view is the senior team of the club where he was selected and formed (D. Apolzan, 1996).

Methods

Our purpose was to follow the promotion situation of juniors who finished this stage at Football Club Bihor, a second league team from Romania, where there is a Children and Junior Center.

We chose the period of time between 200-2010, taking into consideration the players promoted to 1st, 2nd, 3rd and 4th league teams. We also followed the situation of presences of players in national teams, the junior, youth or national team, or the presence in international matches of club teams, UEFA Champions' League and UEFA Europe's League.

We mention from the very beginning that the Children and Junior Center's objectives are selection, growth, development and promotion towards the senior team of the young players instructed and educated here. Any other preoccupations are subordinated to this primordial objective of activity.

At the Children and Junior Center there were usually 6-8 coaches, some working full-time and others collaborating. Each coach had two groups.

At the F.C. Bihor club, the coaches make the selection and continue the instruction of the group until the age of finishing the junior period.

On European level, the aim is to specialize coaches for children and juniors on age groups.

The departure of coaches or their promotion to the club's senior team led to the situation that the groups in finishing year are not always trained by the one that began the training.

Results

Table 1: Players promoted in senior championships

Year	Results - presence in the final tournament	League1	League 2	League 3	League 4
2000	Did not qualify	1	2		3
2001	Final tournament –region	4	1		5
2002	Did not qualify				
2003	Did not qualify				

2004	Did not qualify	1	2	1	2
2005	Did not qualify	2			3
2006	Final tournament –region	1			4
2007	Final tournament – 3rd place	3	2	3	2
2008	Did not qualify		3	1	2
2009	National champion		4	8	1
2010	Did not qualify			4	5
Total		12	14	17	26

As noticed in table 1, during this period, 2000 – 2010 the A junior teams (18-years-old) of the club qualified four times in the final tournaments of the national championships. In 2001 they entered the regionals, in 2007 they got the 3rd place and in 2009 the 1st place, national champion.

There were two years, 2002, 2003, in which the junior groups did not qualify in the final tournament and the players were not promoted. The situation was caused by the fact that the coach, G.C., was not capable, or in 2003, M.A., was retired, thus lacking motivation.

A very important aspect was proven to be the existence of the club's second team in which the best players of the junior team could play. Unfortunately, the 2nd team did not function permanently.

During the period we are referring to the 2nd team existed in 2001, activating in the 4th league, in 2008 and 2009 in the 3rd league. At present, it does not function.

We should emphasize the fact that in 2009 when the A junior team became national champion, all players who took part in the final tournament had matches in the 2nd team which activated in the 3rd league.

The contact with a higher level, the matches with higher physical and psychic load made them behave very well in meetings with players of the same age in the final tournament.

After finishing the junior period, football players still need 2-3 years with matches in the 2nd and 3rd league to leap into the 1st league.

This is also the reason why during the past three years there was no player in the 1st league, but the existing potential in the 2nd and 3rd leagues allows us to hope.

In the present championship, two players formed at the Children and Junior Center, Fildan and Pop Sorin, are part of the senior team.

It can be noticed that from all the members of the national team 2009, none of them was promoted in the 1st league. However, the group of players present in the 2nd and 3rd leagues (4, respectively 8), offer hope that some of them will play in the 1st league as well.

Although the purpose is not mainly to form a champion team, but to instruct and promote to the senior team, the players' value can increase more when they are part of a good team, a team which goes to higher phases of competition specific their age group. The coach is the one who, without making a purpose out of the team's results, must join the desire for performance of the club and of parents with the necessity of instruction and promotion of players.

Table 2: International representation

Year	Champions' League	UEFA Cup	Junior Lot	Youth Lot	National team
2000					
2001	1 (N. M.)	3	1	1	1
2002					
2003					
2004					
2005			1	2	
2006			1	1	
2007	1 (B. E.)	1		1	

2008					
2009			1		
2010			2		
Total	2	4	6	5	1

From the point of view of participation to the international games, it is noticed that the junior team had only one representative in the national lot during the better years, only one player made it into the national team during this period, a better presence being in the club teams participating to the European Cups. This year there were called in the junior lots those born in 1994 (one player), 1995 (3 players) and 1996 (2 players).

Discussions and conclusions

The purpose of the study is to observe the results of the Children and Junior Centre regarding players' promotion to the 1st team, but also to depict the causes that led to poorer results, as well as solutions that in the future the activity should be carried on under better conditions.

Among the aspects which impeded activity, we mention:

- poor coaches' training;
- poor quality of materials and field, for a long time, trainings were held on cinders;
- lack of medical assistance;
- lack of youth teams and any competitions for this age, 19-21;
- lack of the club's permanent concern for players who finish the junior period; the players feel abandoned and they encounter difficulties in their relationship with other teams. There is the tendency to abandon and talented players may be lost.

Aspects which led to the increase of instruction quality:

- the existence of a 2nd team of the club which allowed the increase of competitional experience for the best juniors as well as easier getting in of those who had just finished the junior period;
- good training of coaches, courses or experience exchanges;
- existence of tournaments abroad which allowed the players to accumulate competitional experience.

Objectives for the future:

- permanent preoccupation to bring trainings, in form and content, as close as possible to what is going on now in good football on European level;
- unitary activity principles – selection, instruction and promotion of players should be made after criteria available for each of the club's trainers;
- preoccupation for continuous selection;
- individualization trainings, especially with players nominated for the actions of junior lots;
- each coach should have only one group and he should be permanently preoccupied by selection in order to improve the lot;
- specialization of coaches on age groups, fact which can lead to the increase of instruction quality.

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ROLLER SKIING: PHYSIOLOGICAL RESPONSES AND COMPARISON WITH RUNNING AT SAME INTENSITY IN CROSS-COUNTRY SKIERS

EBRU ÇETIN[1], ULVIYE BİLGİN[1], DYARIM İMDAT[1]

Abstract

The purpose of our investigation was to compare some physiological, metabolic and respiratory responses in roller ski and submaximal running exercise at preferred levels of exertion.

Four males and six females junior cross-country ski racers performed 30 min submaximal roller skiing and running (75% HR max) at least 2 days between bouts for any given subject. Heart rate (HR), Oxygen uptake ($\dot{V}O_2$), carbon dioxide production ($\dot{V}CO_2$), tidal volume (V_T), oxygen pulse (O_2 pulse), minute ventilation (V_E), respiratory exchange ratio (RER) and metabolic equivalent (MET) were monitored continuously using a portable, breath by breath spirometry system. Blood samples were obtained from fingertip at baseline, at the end and five minutes after exercise and analyzed for whole blood lactate concentration. The same test protocol was used for all two exercise modes.

HR, $\dot{V}O_2$, $\dot{V}CO_2$, O_2 pulse and MET were significantly higher in running than roller skiing only in the first three minutes of exercise sessions.

A significantly higher $\dot{V}O_2$ was observed during running exercise than roller skiing, but there were no differences in lactic acid levels, minute ventilation and RER. Tidal volume also showed a significant increase in roller ski exercise after 15 minutes compared to running.

We conclude that roller ski and running are both equally valuable for training endurance ability in cross-country skiers. Coaches and athletes should be aware that roller ski and running elicit similar blood lactate concentration and heart rate at a given exercise intensity.

Future studies should compare the cardiovascular training effects of running and roller ski exercise in individuals of varying levels of fitness and skiing ability.

Key Words: sub maximal exercise, $\dot{V}O_2$ max, XC Skiing

Introduction

Which activities do successful cross-country (XC) ski racers actually do for conditioning? Although training varies considerably among the best elite athletes, it is possible to generalize to some degree (P. Petersen et al. 1999). Skiing just as the concept of specificity explains, the best training for the ski racing is skiing. The best skiers practice on glaciers in summer (N.V. Mahood et al. 2001). But only skiing is not enough for conditioning and also is not possible. The other several training methods are as follows, ranked in order of specificity for nordic ski racing; roller skiing, ice skating and in line skating, hill work with ski poles, rowing, hiking, running, cycling and others include orienteering, rock climbing, kayaking, triathlons, swimming, tennis and soccer (P. Gervais, C. Wronko 1988; A.J. Larson 2006; P. Petersen et al. 1999).

The single physiological variable that most clearly distinguishes the champion cross-country skier from the average person or even the highly trained but less successful skier is the maximal oxygen consumption (S. Seiler 1996). In the unforgiving world of XC racing, there seems to be no substitute for a BIG ENGINE (U. Bergh 1982; F. Ingjer 1991). This capacity requires both genetics and also hard training (K.W. Rundell, D.W. Bacharach 1995).

Ingjer demonstrated that the average $\dot{V}O_2$ max of world class skiers was significantly greater than that of less successful skiers only when it was divided by lean body mass, not when it was divided by simple body mass. One thing is clear, the teams which have the greater success are those which have skiers with the highest maximal oxygen consumption (F. Ingjer 1991).

Training may be regarded as a tool that when used correctly elicits specific physiological responses. Each stage of the training plan, the amount and type of exercise one does will determine how fit and race ready one will become. The physiological effects of each training intensity will dictate the amount of training component scheduled during a given training cycle (M. Boyle 2004). Every level of cross-country skiers must include a certain amount of endurance exercise in the program. Over distance training is an important component for developing and maintaining aerobic capacity and maximal oxygen consumption (R. Sleamaker, R. Browning 1996). Low intensity overdistance training sessions are most effective if the intensity is between 55 and 65 percent of $\dot{V}O_2$ max.

The more oxygen can be delivered to the working muscles, the greater the energy supply, and the faster the body can ski over distance (E. Cetin, I. Yarım 2006; J. Newton, J. Henderson 1998).

Running is a simple training technique, which has been used in one form or another throughout the history of sports. Over the years, a number of Olympic, professional and amateur athletes have used running to improve their

[1]School of Physical Education and Sport, Gazi University, Ankara, TURKEY
Email: ecetin@gazi.edu.tr

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performances. Athletes in almost all sports use running to improve especially their aerobic capacity (G.T. Moran, G. McGlynn 1997). Running activities such as distance exercise are very effective in increasing the ability of cardio respiratory system to supply oxygen to the working muscles. Cross-country skiers often use distance running during the whole season to maintain aerobic performance (G.T. Moran, G. McGlynn 1997; R. Sleamaker, R. Browning 1996). Running can provide excellent aerobic work but it does not account for upper body fitness. The endurance capacity of the upper body has always been important for the skier. One of the areas where most endurance athletes are weak is upper body endurance and power. Among elite skiers, an interesting pattern occurs during the season. Whole body maximal oxygen consumptionpeaks very early in the seasonal build-up. However, performance peak during the season seems to correspond to the peaking of upper-body endurance capacity**,** measured as upper body peak $\dot{V}O_2$ (U. Bergh 1987).

The next best method of practising cross-country skiing during the summer is roller skiing. The summer and fall are critical training months for cross-country skiers. Roller skiing is a must for those who are serious about progress. The best juniors, elite and master skiers are spending 25-50% of their training time on roller ski (M.D. Hoffman et al. 1992). This training method effects especially on improving the cardiovascular and neuromuscular functions required for cross-country skier (F. Wöllzenmüller 1982).

The purpose of this investigation was to compare some physiological, metabolic and respiratory responses to roller ski and running exercise at preferred submaximal levels of exertion. Four males and six females elite cross-country ski racers performed 30 min submaximal roller ski and running exercises.

METHODS

Experimental Approach to the Problem

This study used a repeated measures design to examine the effects of different exercise modes, namely 30 min submaximal roller ski and running exercise, on oxygen uptake, heart rate and blood lactate.

Ten subjects (4 women and 6 men) were tested on 2 occasions using a different mode of exercise for each test: running and roller skiing. A combined-sex group was used because the exercise modes tested are common training modes for both male and female cross-country skiers. There are no known gender specific differences in the submaximal physiological responses to these modes of exercise. Consequently, the data for men and women were pooled to provide a total sample size of 10 test subjects.

The test sequence was randomly assigned to each subject over 1-week period. Tests were conducted in the post competition season, during the recovery phase of the training cycle. Usual training prior to testing included daily on-snow skiing, running and weight training; training had been ceased one week prior to testing. All subjects were comfortable with roller skiing and running on it. All exercise modes followed the same protocol.

Subjects

Ten cross-country junior ski racers, 4 women and 6 men volunteered to be tested. Prior to testing, each subject provided his or her written consent to participate in the study. Subjects were well-trained, regional or international level competitors. Subjects had at least 6 years of competitive experience in cross-country skiing and roller skiing.

Procedures

Height and weight were measured on the day of the first test, prior to testing, using a stadiometer and a calibrated scale. Subject characteristics can be found in Table 1. Subjects were randomly assigned to a testing sequence that included either a 30 minute submaximal running or roller ski exercise. The testing sequence was randomized for all subjects to reduce any training or learning effect. All tests were administered during one week period with at least 2 days between bouts for any given subject. Due to scheduling constraints, tests were scheduled throughout the day between 9:00 AM and 13:00 PM in 20–22 ^{0}C.Subjects were instructed not to exercise or train on the day of testing and to maintain their usual diet.

Subjects used the same pair of Eagle Skate, ratcheted roller skis (100 mm) for the roller ski exercise. Subjects used their own boots, poles, and helmet, which they commonly used in training. Skate poles generally reached the subject's upper lip.

All tests were performed with the same method; it was a 30 minutes sub-maximal field roller skiing and running test. Roller skiing exercise was run on 1 km flat asphalt course and 400 m running on standard track in a field stadium. Athletes had rested at least two days between the roller ski and running exercises. Exercise intensity was determined as 75 % of the individual's heart rate according to Carvonen method. Subjects performed a warm-up, using the mode of exercise to be tested, for 15 minutes.

Accutrend Portable Lactate analyzer and BM Lactatestrips (Boehringer, Manheim, Germany) were used to determine the lactic acid levels. The blood samples were obtained at fingertip at baseline (a), at the end of 30th (b) and 35th minutes (c), strip was analyzed for whole blood lactate concentration. The same sampling protocol was used for both two exercise modes

Gas analysis during the submaximal exercises was completed with a portable breath-by-breath gas exchange measurement system (V_{max} ST 1.0, Cortex Biophysik GMBH, Leipzig, Germany). This system was calibrated prior to each test under ambient conditions for volume and gas concentrations. TheV_{max} ST 1.0 system is lightweight(650 g), with the main sample unit attached to the chest and a battery pack on the back of the harness. A face mask is used to measure direct airflow through the turbine and to permit sampling of expired air. The design permitted high level performance with no serious interference with normal ski technique. We used the unit in stand-alone data recording mode, but it could have also been used with telemetry if the testing would have been conducted closer to the base. Heart rate (HR), Oxygen uptake ($\dot{V}O_2$), carbon dioxide production ($\dot{V}CO_2$), pulmonary ventilation (V'E), energy output (Q), tidal volume (VT), inspiratory volume (IV), oxygen pulse (O_2 pulse), O_2 intake volume (O_2 intake), minute ventilation (V_E), respiratory exchange ratio (RER) and metabolic equivalent (MET) were recorded.Heart rates were continuously measured by a Vantage XL Polar Heart Rate Monitor (Polar OY, Finland) telemetry device and averaged over the 15 seconds of each stage during each exercise.

Statistics

Statistical analyses were performed with SPSS (version 10); Means and standard deviations (SD) are given as descriptive statistics. A repeated measurement ANOVA was used for evaluation within groups and between groups' differences by independent sample t-test; $p<0,05$ was considered to be statistically significant.

RESULTS

Oxygen consumption values and metabolic parameters are given in Table 2., blood lactate values in Figure 1. and $\dot{V}O_2$, $\dot{V}CO_2$ values for running and roller skiing exercises (0,1,3,5,10,15,20,30,35 min) are shown in Figure 2.

There is a significant difference between heart rate parameters at 1th, 3rd and 35th minute and O_2 intake and Q differ at 1th minute of exercise ($p<0.05$) between running and roller skiing exercises.

Tidal volume at 15th, 20th and 25th minute of exercise and specific V_E at only 35th minute of exercise was significantly different ($p<0.05$) among exercise modes.

There is a significant difference between running and roller skiing exercises in V'E, $\dot{V}O_2$, $\dot{V}CO_2$, METand O_2 pulse at 1st and 35th minutes ($p<0.05$).

There is no significant difference between running and roller skiing exercises at inspiratory volume and respiratory exchange ratio ($p>0.05$).

There was a significant difference in terms of LA levels in both groups when compared pre and post exercises ($p<0.001$); but there was no significant difference between blood lactate concentrations between exercise modes (Figure 1).

However looking at the differences between LA levels as percentages, in running exercise between the first and second measurement there is a 292,59 % increase, between the second and third measurement, there is a 15,49% decrease. In roller skiing between the first and second measurement, there is a 268,25% increase; between second and third measurement, there is a 17,95% decrease.

Cross-country athletes make 6765,00 ± 669,179 m in running and 9018,25 ± 625,327 m in roller skiing during 30 minutes submaximal exercises.

DISCUSSIONS

The purpose of our investigation was to determine if among different modes of exercise, there is a significant difference in heart rate, lactic acid concentration, some respiratory and metabolic parameters, or if there is a significant difference in exercise stages. It was hypothesized that there would be a significant difference in heart rate when comparing roller ski exercise with running exercise. Athletes and coaches in almost all sports use running to improve especially their aerobic endurance (R. Sleamaker, R. Browning 1996). Although how roller ski exercise affects $\dot{V}O_2max$ is literally unknown. So the second hypothesis was submaximal roller ski exercises could develop endurance capacity as running exercise.

Results of our study partially support the hypothesis that only the first three minutes of both exercise modes elicit different outcomes in terms of the parameters measured. Although between 3-30 minutes no significant difference has been found, there was a significant difference in heart rate between 0-3 minutes of exercise modes. As compared with running this lower heart rate for roller ski was associated with exercise intensity. The reason of this results seems that running exercise mode has higher working intensity in first 3 minutes than roller skiing (M. Boyle 2004; M.L. Foss et al. 1998). Also roller skiing exercise's total movement pattern has two different parts; push and glide (as shown in Table 2. heart rate support this result) (P. Gervais, C. Wronko 1988).

Snyder examined the physiological responses of nine trained volunteers (2 males, 7 females) during in-line skating and compared it with running and cycling. Results show that heart rate response during in-line skating was lower than running and cycling (A.C. Snyder et al. 1993).

Melanson et al. compared the physiological demands of in-line skating and running at self-selected exercise intensities. Ten males and ten

females performed 15 minutes of in-line skating or running on two separate days, while HR and $\dot{V}O_2$ were measured continuously. Melanson et al. found no differences in V_E, HR, or ratings of perceived exertion (RPE) between in-line skating and running (E.L. Melanson et al. 1996). Our results are similar to Melanson's results but contrary to Synder's.

Furthermore, running exercise elicited insignificantly higher mean blood lactate concentrations for every exercise stage compared with roller skiing. These findings could be important in determining appropriate heart rate-based intensity zones for roller ski training. The relationship between blood lactate concentration and heart rate is important in the prescription of intensity-based training zones for cross-country skiers and other endurance athletes to optimize training and prevent over-reaching (P. Bourdon 2000).

Martinez had performed 3 maximal exercise tests with nine athletes (6 males and 3 females) from the National Roller Skiing team. In contrast to our result, maximal blood lactate was significantly lower in running compared to cycling and roller skating (M.L. Martinez et al. 1993). These differences depend on exercise intensity as in this study submaximal exercise intensity was used.

After 5 minutes of exercise lactic acid removal was insignificantly higher in roller ski than running. Exercise specificity, i.e. upper body involvement for roller skiing, as well as protocol characteristics, particularly exercise modes, could explain this discrepancy. Our results stress the importance of the upper body component in cross-country skiing and that the aerobic energy cost discriminates between skiers of different standard (M. Gregoire et al. 2003).

The primary removal mechanism for lactate is oxidative metabolism (G.A. Brooks 1986). This can take place in lactate-producing cells, or the lactate can be shuttled to other cells and oxidized as an energy-yielding substrate (G.A. Brooks 1986). This potential lactate removal pathway may be enhanced by combined upper- and lower-body exercise such as roller skiing. By contrast, in running exercise, the legs have a lower metabolic output and would not need to oxidize lactate for additional ATP synthesis. This would result in a net increase in blood lactate accumulation.

These data are often used for prescription of heart rate-based exercise intensities and zones regardless of exercise mode that is used in training sessions. Because running utilizes only the lower body and cross-country skiing has a large upper-body component, several studies suggest that discipline-specific tests may be more appropriate for the evaluation of cross-country skiers and prescription of exercise intensities (E. Mygind et al. 1991; K.W. Rundell 1995, 1996).

The main finding of our investigation is similar $\dot{V}O_2$ max values during running and roller skiing were attained by elite cross-country skiers who were active and trained in fitness status.While intensity of exercise in both exercise modes was 70 %, increase in tidal volume of both two exercise types was not significantly different until 15th minute. Augmentation inalveolar ventilation during exercise results from an increase in both the rate and depth of breathing. The volume of gas moved during each respiratory cycle is the tidal volume (P.O. Åstrand, K. Rodahl 1987). There is an increased dependence on breathing frequency versus Tidal Volume as exercise intensity increases. In submaximal exercise, well trained athletes maintain alveoler ventilation by increasing tidal volume with only a small increase in breathing rate (W.D. McArdle et al. 1991). However, tidal volume of running exercise was significantly lower than roller ski exercise between 15th and 20th minutes ($p<0,05$).The loss of tidal volume reserve, therefore, serves as the primary mechanism for the overall loss of pulmonary reserve with fatigue. The primary factor for the decreased dependence on tidal volume during exercise of increasing intensity is the structural disintegration that comes from a gradual loss of lung support structure elasticity (S.P. Brown et al. 2006).

The portable breath-by-breath monitoring system provided an excellent opportunity to monitor $\dot{V}O_2$ peak in athletes during roller ski and running exercise. Except after the first minute of exercise no significant differences ($p>005$) were found in $\dot{V}O_2$ max (ml/kg/min), Oxygen uptake ($\dot{V}O_2$), carbon dioxide production ($\dot{V}CO_2$), pulmonary ventilation (V_E) and metabolic equivalent (MET) between roller ski and running exercises. Running and roller ski did not differ significantly from each other with respect to this increase in $\dot{V}O_2$ max; nor did they demonstrate significant changes in respiratory exchange ratio (RER) at $\dot{V}O_2$ max between submaximal exercise periods.

This phenomenon could be explained that during mild, steady-state exercise, ventilation accurately reflects the rate of energy metabolism. Ventilation parallels oxygen uptake. The ratio of air ventilated to oxygen consumed is the ventilatory equivalent of oxygen ($V_E/\dot{V}O_2$) (J.H. Wilmore, D.L. Costill 1994).

Since oxygen uptake is the product of systemic blood flow (cardiac output) and systemic oxygen extraction (arteriovenous oxygen difference), changes in $\dot{V}O_2$max are due to changes in maximal systolic volume, maximal HR, or maximal arteriovenous oxygen difference ((a-v)O_2 difference) (S.K.Powers, E.T. Howley 2001).

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For example, in a study by Koepp significant difference was also present for $\dot{V}CO_2$ ($L \cdot min^{-1}$) between running and skating; this could be due to the fact that $\dot{V}CO_2$ rises linearly with $\dot{V}O_2$ (oxygen consumption) but at a faster rate. Therefore, as $\dot{V}O_2$ increases, $\dot{V}CO_2$increases in excess (K.K. Koepp 2005).

Melanson found no differences in V_E, HR, or RPE between in-line skating and running (E.L. Melanson et al. 1996). However, $\dot{V}O_2$ and EE were significantly higher during running (Martinez et al. 1993; Melanson et al. 1996). Our study shows similar results whereas there were no significant differences in V_E, HR, V_T, and O_2 pulse between running and treadmill skating, but a higher $\dot{V}O_2(ml \cdot kg^{-1} \cdot min^{-1})$ and $\dot{V}CO_2(L \cdot min^{-1})$ was seen during running than treadmill skating. Again, this could be due to the position of the body while skating and the compromised HR, SV, and (a-v) O_2 difference caused by a decrease in muscle blood flow.

Our study shows similar results that there were no significant differences in V_E, HR, VT, and O_2 pulse between running and roller skiing.

PRACTICAL APPLICATIONS

Cross-country skiing is mainly an aerobic sport, our results stress the importance of the upper body component in cross-country skiing and that the aerobic energy cost discriminates between skiers of different standards.

Our study revealed that the roller ski produced similar maximal physiological values compared to running during this experiment protocol.Roller ski can be recommended as a beneficial training and recovery exercise method for cross-country skiers. Roller ski showed similar physiological values with running. It was concluded that these skiers, were well-trained in both running and roller ski. Similar improvements in $\dot{V}O_2$ max could be achieved with running and roller ski programs that are equivalent in training volume and intensity. A potential advantage of roller ski is that aerobic training intensities can be obtained at competitive velocities. These results show that roller ski can be regarded as an alternative to snow skiing for off-seasonal training in Nordic disciplines.

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Tables and Figures

TABLE 1.

Physical characteristics of the subjects (mean ± SD)

Height (cm)	**Weight** (kg)	**Age** (years)
165.63±5.66	56.33 ±7.1	16.87 ±1.87

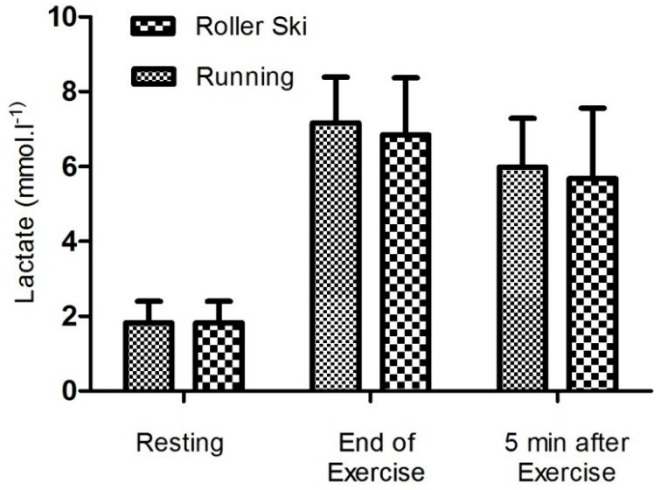

FIGURE 1. Lactate levels in running and roller skiing at resting, end of exercise and after 5 minutes of exercise

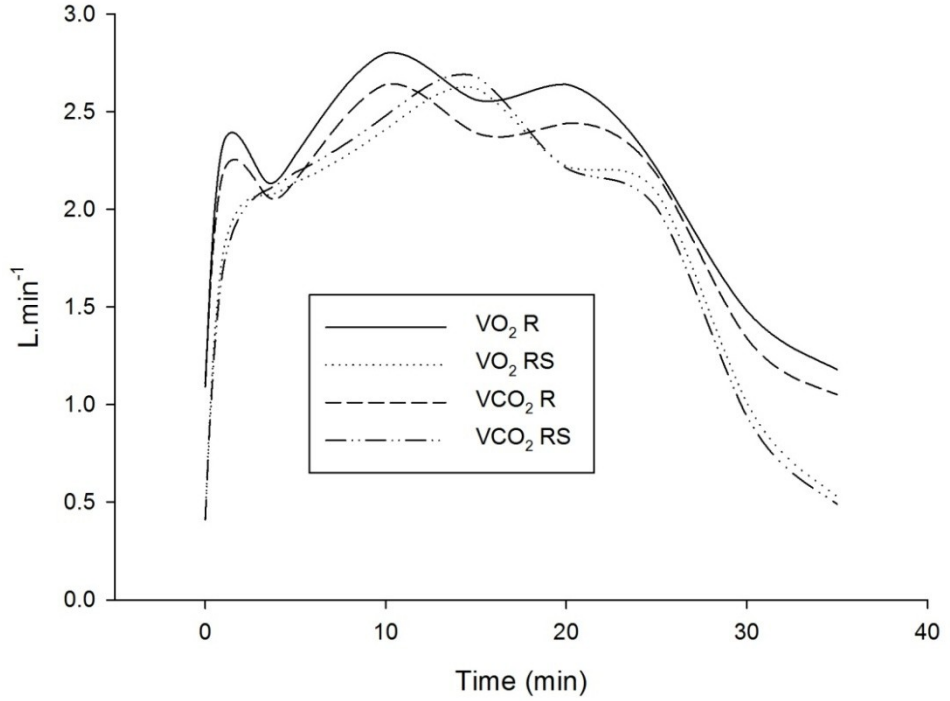

FIGURE 2. Oxygen consumption and Carbondioxide production in running (R) and roller skiing (RS)

TABLE 2. Measurement results and evaluation of metabolic changes in running and roller skiing exercises.
* p<0,05; ** p<0,01 NS=None Significant

Parameters	Exercise mode	0 min	1 min	3 min	5 min	10 min	15 min	20 min	25 min	30 min	35 min
HR (beats/min)	Run	116,33±30,80	164,66±7,79	174,11±7,00	178,88±9,82	187,33±8,71	187,00±6,67	184,22±6,83	187,22±6,20	186,22±6,11	157,00±25,76
	Rollerski	108,11±18,58	147,33±31,16	166,88±17,85	177,55±9,38	182,66±8,51	184,33±8,78	182,33±9,32	185,22±9,17	186,77±8,52	128,00±19,04
	Significance	NS	*	*	NS	NS	NS	NS	NS	NS	*
V_T (L/breath)	Run	0,69±0,35	1,67±0,70	1,64±0,42	1,67±0,38	1,56±0,31	1,46±0,22	1,39±0,26	1,37±0,36	1,33±0,31	0,81±0,26
	Rollerski	0,51±0,23	1,17±0,66	1,45±0,40	1,64±0,36	1,60±0,32	1,58±0,44	1,44±0,45	1,45±0,30	1,35±0,28	0,77±0,13
	Significance	NS	NS	NS	NS	NS	*	*	*	NS	NS
V_E (L/min)	Run	21,71±9,90	66,48±26,48	76,28±24,94	78,82±25,45	85,97±22,42	80,88±18,64	81,87±17,35	80,33±19,09	83,35±18,00	35,91±10,01
	Rollerski	14,96±8,93	54,79±42,88	75,90±31,52	81,67±25,08	82,93±27,52	91,68±26,68	78,84±25,61	75,06±24,52	82,23±27,39	18,22±6,92
	Significance	NS	NS	NS	NS	NS	NS	NS	NS	NS	**
RER	Run	1,02±0,22	0,93±0,10	0,86±0,33	0,84±0,31	0,94±0,05	0,93±0,06	0,93±0,08	0,94±0,60	0,92±0,71	0,91±0,12
	Rollerski	0,86±0,35	0,93±0,07	0,87±0,33	0,90±0,34	1,02±0,05	1,01±0,06	0,99±0,10	0,96±0,05	0,92±0,08	0,90±0,10
	Significance	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
$\dot{V}_{O_2}$ ($L.min^{-1}$)	Run	1,0±1,1	2,34±0,95	,19±1,15	2,28±1,23	2,80±0,92	2,56±0,77	2,64±0,86	2,21±0,90	1,48±0,98	1,18±0,48
	Rollerski	0,4±0,3	1,78±0,41	,07±1,21	2,14±1,10	2,41±0,70	2,62±0,92	2,22±0,68	2,09±057	1,01±0,67	0,53±0,26
	Significance	NS	*	NS	NS	NS	NS	NS	NS	NS	**
$\dot{V}_{CO_2}$ ($L.min^{-1}$)	Run	1,11±1,14	2,19±0,93	2,12±1,20	2,15±1,15	2,64±0,88	2,39±0,67	2,44±0,74	2,18±0,48	1,34±0,84	1,05±0,37
	Rollerski	0,41±0,30	1,70±0,39	2,08±1,29	2,19±1,15	2,48±0,80	2,68±0,99	2,21±0,72	2,01±0,37	0,94±0,97	0,49±0,23
	Significance	NS	*	NS	NS	NS	NS	NS	NS	NS	**
O_2 Pulse	Run	4,59±6,79	14,13±5,58	12,55±6,40	12,84±6,81	15,00±4,93	13,79±4,48	14,38±4,90	13,35±4,88	14,09±4,59	7,43±2,71
	Rollerski	3,40±1,81	7,07±3,87	12,48±6,84	12,54±6,32	13,66±3,40	14,95±4,64	12,50±3,17	13,20±3,23	13,68±4,96	4,41±2,81
	Significance	NS	**	NS	NS	NS	NS	NS	NS	NS	*
MET	Run	2,98±0,43	12,35±3,60	13,40±3,11	14,04±3,49	14,92±2,97	13,89±3,43	14,09±3,14	13,24±3,17	14,03±3,45	6,70±3,03
	Rollerski	2,14±1,45	9,17±6,50	12,17±3,65	12,57±2,30	12,75±2,42	13,75±3,46	11,84±3,19	12,63±2,29	13,02±3,22	2,77±1,49
	Significance	NS	*	NS	NS	NS	NS	NS	NS	NS	**

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EFFECT TRAINING PROGRAM OF SPEED ENDURANCE DEVELOPMENT ON SERUM BETA ENDORPHINS, LACTIC ACID, LACTATE DEHYDROGENASE ENZYME AND NUMERICAL ACHIEVEMENT LEVEL AT FEMALE COMPETITORS OF 1500 M. RUNNING

GHAREEB RANIA[1]

Abstract:
Purpose. The research aimed at putting a suggested training program for developing the speed endurance and examining its effect on some biochemical variables (Beta-Endorphins - Lactic acid - - Lactate Dehydrogenas Enzyme (LDH)) and the numerical achievement level of the (1500m.) running female competitors.
Methods. The researcher had used the experimental method via the experimental design of one group by the use of the pre and post measurements, the research community included (10) female players for (1500 m.) running competition who represented Gharbia athletics team.
Results. The suggested training program for developing the speed endurance affects positively and with statistical significance on the biochemical variables (Beta-Endorphins - Lactic acid. - LDH) and affects positively on the numerical achievement level of the (1500 m.) running female competitors.
Conclusions. The suggested training program improve the numerical achievement of (1500 m) running female competitors through the positive effect on Lactic acid production and LDH response with decrease Beta Endorphins blood concentration which indicate reduction of the stressful affect (1500m) running.
Key Words: Speed Endurance - Beta Endorphins - Lactic Acid - Lactate Dehydrogenas Enzyme (LDH) - Numerical Achievement Level

Introduction

Fatigue is a complex phenomenon that can be described as a time-dependent exercise-induced reduction in the maximal force generating capacity of a muscle.

The muscular fatigue is one of the most important problems affecting the performance level of the player, And it is a multifaceted phenomenon , As there are different types of muscle work there are different types of muscular fatigue**.** (D. Dill & W. Adams, 1980)

Muscle fatigue caused by muscle work hard differs from the quality of muscle fatigue resulting from the action moving, As well as the different degree of fatigue according to different muscle work and the period of a spiral **(**M.L. Schillings, W. Hoefsloot, and D.F. Stegeman , 2003**)**

Indicates (A., Abu El Ala , R., Nasser al din, 2003) to Speed Endurance Is the ability to continue to perform movements symmetric and asymmetric and replicated efficiently and effectively for long periods at high speeds without a drop in the level of efficient performance .

Lactate Dehydrogenas Enzyme (LDH) helps in getting rid of Lactic acid, and increase the concentration of this enzyme accompanied by an increase in the elimination of lactic acid where it disputed the hydrogen and thus converts lactic acid to Berovic acid. In addition, Beta-Endorphins (Morphine blood) Is a hormone produced by the pituitary gland and works to reduce pain and tension and works chemical carrier and enter in many physiological processes such as temperature regulation of the body and , regulate blood pressure and helps increase the secretion of some hormones such as glucagon and insulin and increased excretion with stress, anxiety and fatigue **(**F. Gold et al. ,1995 , I. Bahaa El Din, 2000, R. Robergs, S. Roberts, 2000, W. Meyer, et al., 2001, and D. Ormard, 2002)

The middle distances competitions are considered as a connecting link between the sprint competitions and long distances running competitions in the (800 m, 1500 m) competitions. In fact, we can't put a borderline between the sprint and the middle distances running, for example, the competitors of the (800m.) can participate in the (400m.) competition, on condition that, they should be fast, and also the participation of the middle distances players, especially (1500m.) , in the long distances competitions, on the condition that, they should be characterized with the endurance. **(** G .Eiwes , 1997).

So, the ideal female middle distances player is the one who combines the speed running and the endurance of the long distances.

The research problem raised when the researcher had noticed the fall of the numeric achievement level in the (1500 m) running competition at the female competitors of Gharbia area which is a very serious problem and we should find scientific solutions for it via putting rationalized training programs.

However, by considering the best achieved numeric level of the female competitors

[1] Faculty of Physical Education, Zagazig University, EGYPT
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in Gharbia in. the (1500m.) running competition, then, it will be (5.30.11) min., while the Egyptian number is (4.43.93) min. So, here appears the great difference between the numeric achievement level of Gharbia female competitors and the numeric level of the republic female champion.

From here, the research problem appears when the researcher tries to put. a training program for developing the speed endurance and identifying its effect on some of the biochemical variables Beta Endorphins - Lactic Acid - Lactate Dehydrogenas Enzyme (LDH) and the level of numeric achievement of the female competitors of (1500m.) running.

Research Objectives:

This research aims at putting a suggested training program for developing the speed endurance and identifying its effect on:

1- The biochemical variables (Beta Endorphins -Lactic Acid- Lactate Dehydrogenas Enzyme (LDH) of the female competitors of (1500 m.) running.

2- The level of numerical achievement of the female competitors (1500 m.) running.

Materials and methods

- **Study design*:***

The researcher had used the experimental method via the experimental design of one group by the use of the pre and post measurements.

- **Research Community:**

The research community included (10) female players for (1500 m.) running competition who represented Gharbia athletics team.

- **Research Sample*:***

The research sample were chosen in the intentional method by the middle distances female competitors in Gharbia athletics team , They were (10) female players representing the following sports institutes (Tanta Sports Club - Kohafa Club - Gharbia Youth Club - El Santa Youth Center - El Manshia El Kobra Club) in Gharbia and are registered in the Egyptian Athletics Federation in the season 2009/2010 .

Methods :

Biochemical Measurements:

Blood samples were taken from each participant before and after the application of the training program. All samples were analyzed by doctor specializing in medical tests for the estimation of serum beta endorphin, lactic acid and Lactate Dehydrogenas Enzyme (LDH).

The physical test:

Shuttle run test (25m.x8)
(Y., Ahmed, Y., Samer , 2008)

Measuring the Numerical Achievement Level of (1500 m.) running competition:

The researcher had used a running test (1500 m.) for measuring the numerical achievement level for the members research sample and the time is recorded for the nearest 1 /100 of the seconds , Was the use of three arbitrators to track and field for testing .

The Bases of putting the suggested training program*:*

Through studying the researcher to some scientific specialized references in the track and field has been to identify some of the scientific foundations that must be taken into account in developing the training program as follows:

- The program content should suit the program and the abilities of the research sample members.
- The break and activity periods should be organized in the program.
- The periodic training method should be used in its two types (low intensity - high intensity) .
- The fluctuation method should be used (2:1) , (3: 1). Meaning that, high load for two days followed with high load for one day or positive break, and three days of high load followed with low load or positive break.
- The load intensity in the suggested training program had ranged from 60 %: 90 % from the maximum speed of the player.
- Repetitions ranging between (2: 3) repeat.
- Groups (3:4) sets.
- Rest between the repetitions from 2 to 8 min.
- Rest between the groups from 10- 15 min.
- Distances performance from 50m. - 150m. with higher intensity than the competition intensity for the speed training.
- Distances performance ranges from 200m. - 1500m. with the competition speed for developing the speed endurance at the (1500 m.) running female competitors.

Running exercises used during the program:

- A distance of(200 m.) run and running speed 14-18 seconds and rest periods, intra 90-120 seconds and the number of repetitions 6-8
- 3x150 m. increase in speed (50 m, 50 m, 50 m) and 3 minutes rest time
- 3x400 m. and running speed 52-54 seconds and rest periods, intra-5 minutes and the number of repetitions 4-6
- 3x 120m. the increasing speed of time (3 minutes rest)

- 3x 400m. and running speed 75-95 seconds and rest periods, intra 180-300 seconds and the number of repetitions 4-5
- 3x60 m. run top speed (rest 2 minutes)
- 1x 800m. run top speed from the beginning of higher
- 2x 100m. run top speed from the beginning of higher
- 2x 1500 meter run intermittently as follows (800-meter run - 75% of the maximum level of player, 500-meter run - 75% of the maximum level of player, 200-meter run -75% of the maximum level of player
- taken into account during the program that the rest will be the positive use of exercises such as walking or relaxation exercises
- 1000meters Dhadha and relaxation exercises - 1500meters Dhadha and relaxation exercises

The Time Distribution of the training Program:

- The total period time of the program is (8) weeks. There are (4) units a week .Time and training unit daily (120) minutes, the total duration of the program (64) hours.

The Statistical Treatments:

Mean, Standard Deviation, T. Test. changes%, The Researcher had used the 0.05 level as a limit for the significance.

Results:

(Table 1) Differences of the biochemical variables between pre and post Measurements

N = 10

Statement / Variables	Measurement Unit	Pre- Measurement		Post -Measurement		The Difference between the two means	T test
		M ±	SD	M ±	SD		
Beta – Endorphins	**Pico mole \ liter**	**9.97±**	**0.18**	**8.71±**	**0.23**	**1.26**	**9.58***
Lactic acid	**Mmol \ liter**	**6.81±**	**0.09**	**5.83±**	**0.11**	**0.98**	**7.34***
LDH	**Unit Miter**	**599.14±**	**25.3 2**	**497.7 6±**	**23.94**	**101.38**	**10.12**

T. value in the table at 0.05 level = 2.262 * significant at 0.05 level

Table (1) shows statistical significance differences at 0.05 level between the pre and post measurements of the biochemical variables (Beta-. Endorphins - Lactic acid - LDH).

(Table 2) changes% in the biochemical variables between the pre and post measurements

Statement / Variables	Measurement Unit	Research Sample Members N = 10		
		Pre	Post	Changes %
Beta – Endorphins	Pico mole \ liter	9.97	8.71	14.47 %
Lactic acid	Mmol \ liter	6.81	5.83	16.81 %
LDH	Unit \ liter	599.14	1497.76	20.37 %

Table (2) shows changes% between pre and post measurements in the biochemical variables (Beta-Endorphins - Lactic acid - LDH) that, the highest % changes was 20.37 %, of LDH while, the least was 14.47 % of Beta-Endorphins

(Table 3) Differences of Speed Endurance, the numerical achievement level in (1500 m.) running competition between the pre and post measurements

N = 1 0

Statement / Variables	Measurement Unit	Pre -		Post -		The Difference between the two means	T test
		M ±	SD	M ±	SD		
Speed Endurance	Second	43.67±	0.44	42.40±	1.05	1,27	5.37*
numerical level of (1500 m.)running	Minute	6.44±	0.46	5.79±	0.37	0.65	3.29*

T. value in the table at 0.05 level = 2.262 * significant at 0.05 level

Table (3) shows statistical significance at 0.05 level between the pre and post measurements of the Speed Endurance, numerical achievement level of (1500m.) running female competitors.

(Table 4) changes% in the Speed Endurance, numerical level of (1500m.) running competition between pre and post measurements

Statement / Variables	Measurement Unit	Research Sample Members N = 10		
		Pre	**Post**	Changes **%**
Speed Endurance numerical level of (1500 m.) running	Second	43.67	42.40	3%
	Minute	6.44	5.79	11.23 %

Table (4) shows changes**%** in the Speed Endurance, numerical achievement level of (1500m.) running female competitors between pre and post measurements.

Discussion:

The results of table (1) show statistical significance improvement of the biochemical variables (Beta-Endorphins - Lactic acid - LDH).

The researcher attributes the decrease of Beta-Endorphins concentration rate in blood to the positive effect of the training program which improved the speed endurance that helped in the retardation of the fatigue symptoms appearance on the competitors. With training this result agrees with the study results of (P.Angelo ,2001 and W. Meyer, et al. 2001) they stated that Beta- Endorphins secretion, which is related to fatigue, tension and stress, decreases. Moreover, table (l) shows differences with statistical significance at 0.05 level between the pre and post measurements of the research sample members in the concentration of Lactic acid in blood and for the post measurement.

The researcher attributes this progress in the ability of disposing Lactic acid to the improvement of the training status at the research sample members, and accordingly, the improvement of the functional status, and that had positively affected the decrease Lactic acid accumulation in the blood plus the increase of LDH efficiency which transforms Lactic acid to Berovic acid and that gives the player the ability to resist the muscular fatigue. This result agrees with the study results of (A.A. Tarek , 1997, M. Wael , 1998, M. Mohamed , A .Mahmoud ,1998, M. Adel ,1999, Bently, et al., 2001, Burke, et al. ,2001 and G. Abeer , 2002**)** they stated that the training programs leads to improvement of the functional status of the players. So, their ability to dispose Lactic acid in the blood increases. Also, this result agrees with (Sawka et al., 2004) that the decrease of Lactic acid concentration in the blood indicates the improvement of the athletes functional status and their ability to continue the physical performance.

Table (1) shows differences with statistical significance at 0.05 level between the pre and post measurements of the research sample members in Lactate Dehydrogenas Enzyme (LDH). The researcher attributes the decrease of LDH enzyme concentration rate in blood to the decrease of Lactic acid concentration as a result of the progress in the female competitor endurance and her ability to dispose Lactic acid, accordingly, Lactate Dehydrogenas Enzyme (LDH). secretion decreases a result of the physical adaptation and the well speed endurance.

However, upon considering table (2) their different changes % between pre and post measurements in the biochemical variables (Beta-Endorphins - Lactic acid - LDH) that the highest changes % of LDH enzyme (20.37%) while the least changes % of Beta-Endorphins (14.47%). The researcher attributes this progress in the post measurements in the biochemical variables to the increase of the speed endurance at the female competitors and that helped in increasing their ability to dispose Lactic acid by the help of LDH enzyme and the decrease of Beta-Endorphin secretion. This result agrees with (K. Saad, 1993 and M. Salah ,1994) they stated that continuous anaerobic endurance development of the player improves his ability to dispose Lactic acid and the decrease the Lactic acid, Beta-Endorphin and LDH secretion.

The results of table (3) show that there are differences with statistical significance at 0.05 level between the pre and post measurements of the research sample members in the Speed Endurance, numerical level of (1500 m.) running and for the post measurement. The researcher attributes this progress in the Speed Endurance, numerical achievement level in (1500 m.) running to the efficiency of the suggested training program in improving the speed and that gave the female competitors the ability to endure the fatigue and the fast disposal of the metabolism lefts (Lactic acid) and that in turn improves the numerical achievement level of (1500m.) running female competitors.

This result agree with the study results of **(**A.B. Laila, 1996, A.A. Tarek ,1997, M. Wael ,1998, M. Mohamed , A. Mahmoud, 1998, M. Adel ,1999 , G. Abeer ,2002 and Y., Ahmed ,Y., Samer, 2008) that the development of the speed endurance affects positively the numerical achievement level in the swimming, long and short distances and athletics.

Also, the result agrees with (A. Mohamed ,2006) who stated that the Lactic acid concentration in blood after the efforts indicates the functional status of the player and his ability to continue performance. The results of table (4) had shown that there are more progress in the post measurement of the Speed Endurance and numerical achievement level of (1500m.) running that the progress ratio reached to (3%) and (11.23%). The researcher attributes this result to the advancement of speed endurance at the research

sample members which had positively affected the numerical level of (1500 m.) running.

This result agrees with (A., Abu El Ella ,1996) they indicated that the progress in the player ability to endure increases his ability to dispose Lactic acid and accordingly, retards the appearance of the fatigue symptoms and so, improves the muscular action.

Conclusion

The suggested training program for the speed endurance development improve the numerical achievement of (1500m) running female competitors which reached 11.23% through the positive effect on lactic acid production and LDH response with decrease beta-endorphin blood concentration which indicate reduction of the stressful effect of (1500m) running.

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PERFORMANCE PROFILES OF NATIONAL AMERICAN FOOTBALL PLAYERS OF TURKEY

İLHAN TOKSÖZ[1], CEM KURT[1], İMRAN KURT ÖMÜRLÜ[2], M.DENİZ DİNDAR[1], GÜNGÖR ULUÇAY[1], KEREM ATEŞ[3]

Abstract
Objective: This study was done to assess the current performance of American Football Team of Turkey which was established for the first time in our country and to follow the improvement in their performance.
Method: Participants in this study were American Football players who have been training 3 times a week, have the average body mass, height and age of 95.84±18.02 kg, 180.62±5.93 cm, 24,6±3.8 years respectively. To assess the performance of these athletes; BMI, %fat percentage, 1RM Bench Press, vertical jump height, anaerobic power, 20 and 40 yard speed test and pro shuttle tests were applied.
Results: The results for Bench Press 1RM, vertical jump, anaerobic power, 20 yard and 40 yard speed test and pro shuttle test were: 95.18±19.99 kg. (Offense 94.39±21.63 kg, defense 96.02±18.40 kg), 51.43±8.38 cm (offense 52.41±9.76 cm, defense 50.44±6.72 cm), 150.52±24.00 kg.m/s (offense 149.60±24.87 kg.m/s, defense 151.43±23.43 kg.m/s), 3.25±0.28 sec. (Offense 3.21±0.34 sec., defense 3.28±0.19 sec.), 5.59±0.41 sec. (Offense 5.54±0.45 sec., defense 5.65±0.37 sec.) and 5.33±0.33 sec. (Offense 5.31±0.35 sec., defense 5.34±0.32 sec.) respectively.
Discussion and Conclusion: There was not a statistically significant difference between defense and offense players in terms of variables ($p>0.05$) but values for Bench Press 1RM, vertical jump and 40 yard speed tests were much lower than the values of NCAA (National Collegiate Athletic Association) athletes. It has been recommended to increase the number of training days per week to obtain a desirable level of success and performance enhancement.
Keywords; American football, National Team of Turkey, Performance status

1. Introduction

American Football has the highest number of spectators in the United States. In our country, especially University students are interested in this sport.

This game requires fast pace, intensity and contact which makes this unique sport appealing.

Studies on the psycosocial status of American football players in our country have been shown that university students are interested in this sport to socialize in the society.

A team is made up of 46 players and students who got accepted in the team becomes popular. Also, wearing the team's t-shirts and jackets becomes a tool to send messages of popularity (T. Alparslan, E. Kılcıgil, 2005).

In American football, a team is made up of three sub-teams all of which have different specialties. These sub-teams are named as

offensive team, defensive team and special team.

The defensive team is made up of noise tackle, defensive end, defensive tackle, linebackers, corner backers and safety players.

The offensive team is made up of; quarter back, center, tight end, running back and wide receiver (R. Thomas, N. Sescher, P. Snell, C. Williams, 1990) Speed, strength, power, agility and quickness are the coordinative and conditional characteristics which have major effects on success in the American Football.

Although a game lasts 3 hours, energy metabolism used in American Football is alactic-anaerobic (J.R. Hoffman, 2008; R. Thomas, N. Sescher, P. Snell, C. Williams, 1990). Unfortunately, there are no sufficient number of studies which examines the American Football in our country.

The data which we obtained from the first camp of our National team will contribute to the development of this sport.

Because of the position of National American Football team in Turkey, assessing the performance and contributing to the follow up of the improvement of performance is the aim of our study.

2. Methods

2.1. Subjects

Sixty-eight American footballers, with a

[1]Kırkpınar School of Physical Education and Sports, Trakya University, Balkan Campus, Edirne, TURKEY
[2] Adnan Menderes University Medical Faculty, Department of Biostatistics and Medical Informatics, Aydın, TURKEY
[3] Turkish American Football Federation G.S.G.M. Ulus, Ankara, TURKEY
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game experience of 4.5±0.59 years (min. 3.00 years and max. 6.00 years), voluntarily participated in our study. The avarage age, height and body weight of the players were 24,6±3.8 years, 180.62±5.93 cm and 95.84±18.02 kg respectively. The measurements were performed in the sports facilities of Kırkpınar Physical Education and Sport

Academy during the training camp of National American Football Team in Edirne (August, 2009). The players were informed about the tests and their written consents were taken.

2.2. Experimental Design

2.2.1. Field Tests:

Twenty yard sprint (18.28m), 40 yard (36.58m) and pro shuttle tests were applied in grass field according to the nature of the game. Test results were taken by using 3 separate chronometers (DigiSport) and average values were recorded as performance times.

2.2.2. Indoor Tests:

Long jump, Vertical jump, Anaerobic Power, % fat and 1RM bench press test were applied.

2.2.3. Long Jump Test:

It was done at the Olympic sports hall and distances were measured by using a tape measure (Meter.JC.GJ509, Made in PRC.)

2.2.4. Vertical Jump Test:

It was measured by using a vertical jump-meter (Takei Physical Fitness Test, T.K.K.5106, Made in PRC).

Player's scores were measured twice in standing long jump and vertical jump test and average values were recorded as vertical jump (cm.) and long jump distance (cm.)

2.2.5. % Fat Assessment:

Triceps, subscapul, suprailiac and abdomen of players were measured by using a 0.2 mm sensitive skinfold caliper (Holtain Ltd.CRYMYCH, Made in U.K.).

Yuhazs' formula was used to determine the percentace of fat.

2.2.6. Anaerobic Power:

The anaerobic strength levels of the athletes were calculated by using (P= (√4.9 (body weight) √D) formula which is based on the relation between body weight and vertical jump height. Vertical Jumping test was applied to determine the height of vertical jump.

Body weight was calculated in kilograms and D=jumping height in meters.

2.2.7. 1RM Bench Press Test:

Players repeated the bench press as much as they could with a certain weight and Boyd Epley equation was used to determine the 1RM = (0.033 x number of repetitions) x (weight lifted) + weight lifted

2.3. Statistical Analyses

We performed a classical statistical analysis to examine the differences in the distribution of variables between players who were either defense or offense.

Kolmogorov Smirnov test was used to assess the normality of numeric variables. Number of training per week was tested with Mann Whitney U test because the distribution of this variable was non-normal and descriptive statistic was expressed as median (25%-75%), but the other variables were tested by independent samples t test and descriptive statistics were expressed as mean ± standard deviation (SD).

3. Results

There was no statistically meaningful difference between measured variables of offensive and defensive players of National American Football team ($p > 0.05$). (Table I, II)

Table I: Data Obtained from the National Team Players of American Football in Turkey

Variables	Descriptive Statistics
BMI(kg/m^2) (n=68)	29.24±4.67
% Fat (n=68)	18.37±4.33
Number of Training per Week (n=52)	3 (3-5)
Bench Press 1 RM (kg) (n=66)	95.18±19.99
Vertical Jump (cm) (n=68)	51.43±8.38
Standing Long Jump (cm) (n=68)	206.17±24.10
Anaerobic Power (kg.m/sec) (n=68)	150.52±24.00
20 Yard Speed Run (sec) (n=66)	3.25±0.28
40 Yard Speed Run (sec) (n=68)	5.59±0.41
Pro Shuttle Test (sec) (n=66)	5.33±0.33

Table II: Comparison the Results of Offensive and Defensive Players

	$n_{defense}$	Defense	$n_{offense}$	Offense	p
Age (year)	34	25.2±4.1	32	24.1±3.3	0.233
Height (cm)	34	181.71±5.56	34	179.53±6.17	0.131
Body Weight (kg)	34	97.21±18.17	34	94.47±18.03	0.535
BMI (kg/m^2)	34	29.30±4.60	34	29.18±4.81	0.918
Bench Press-1 RM (kg)	32	96.02±18.40	34	94.39±21.63	0.744
Vertical Jump (cm)	34	50.44±6.72	34	52.41±9.76	0.336
Long Jump (cm)	34	209.43±20.92	34	202.91±26.84	0.268
% Fat	34	17.67±3.30	34	19.07±5.11	0.186
Anaerobic Power (kg.m/sec)	34	151.43±23.43	34	149.60±24.87	0.756
20 Yard Speed Run (sec)	33	3.28±0.19	33	3.21±0.34	0.308
40 Yard Speed Run (sec)	34	5.65±0.37	34	5.54±0.45	0.275
Pro Shuttle Test (sec)	33	5.34±0.32	33	5.31±0.35	0.660
Number of Trainings per Week	31	3 (3-5)	23	3 (3-4)	0.244

Discussion

It is quite difficult to distinguish between body fat and fat free muscle mass with BMI which is used to determine the body composition.

The BMI and body fat ratios of the American football players were gradually increasing.

More than ¼ of these athletes were determined to have second degree obesity (BMI= 35-39.9) (B.H. Joyce, Hecth. L, 2005; W.J. Karamer, J.C. Torine, R.Silvestre. et al 2005). According to the BMI values, the players of our Natinonal American Football Team are overweight.

In American football, there is a strong relation between body fat ratio and the position of the athlete. While the avarage fat ratio for males is between 10% and 20%, well-trained endurance athletes have a ratio about 10% (P. Jansssen, 2001).

In accordance with these data, it can be said that our players have a normal avarage body fat ratio. In our country, the studies which aimed to determine the body compositions of American footballers have shown that the body fat ratios of American football players were normal (10%-20%) for both offensive and defensive players (F. Vural, G. Nalçakan, M. Z. Özkol, 2009).

The information from the literature draws attention to the fact that the body fat ratio of the offensive players are higher than the defensive players (W. J. Karamer, J. C. Torine, R. Silvestre. et al 2005).

According to the body fat percentage values which were acquired from our study, our offensive players have a higher percentage of body fat compared to the defensive players. This finding bears a resemblance to the data acquired from the literature.

Maximal strength is a major factor which effects performance to a great extent in many fields of sports (R.M. Michael, B.B. Jason, 2008). Bench Press 1 RM and Squat 1 RM tests are among the most widely applied tests with the aim of determining maximal strength (J.M. McBride, D.Blow, T.J. Kirby,

T.L .Haines, A.M.Dayne, N.T. Triplet, 2009; R.M.Michael, B.W. Jason, 2008) NCAA (National Collegiate Athletic Association,) indicates that the Bench Press 1 RM Test values of American footballers are 123.9± 18.6 kg (Division III) - 145 kg (Division I) (J.R. Hoffman, 2008; R.M.Michael, B.W.Jason, 2008).

In our study, although no statistical significance was detected be tween the Bench Press 1 RM test results of offensive and defensive players, it is observed that the avarage Bench Press 1 RM Test values of both player groups are quite low compared to the NCAA players.

Vertical jump test is a simple and reliable test which is used for determining the strength and performance characteristics of athletes (R.M. Michael, B.W. Jason, 2008).

This test is especially used for determining the explosive strength production level of the lower extremity muscles (F.Vural, G. Nalçakan, M. Z. Özkol, 2009).

In a similar study carried out by Vural and his colleagues in our country (2009), the vertical jumping (VJ) value was determined to be 53.2 ± 8.1 cm for offensive players and 56.0 ± 7.2 cm for defensive players (F.Vural, G. Nalçakan, M. Z. Özkol, 2009). And VJ value in NCAA players is approximately 70 cm (A.C. Fry, 1991; R.M. Michael, B.W. Jason, 2008).

One of the most important factors effecting the performance in American Football is the strength levels of players.

Two studies about the strength levels of American Football players were published. Özkan and his colleagues (2009) calculated the anaerobic strength levels of American Footballers as 825.51 ± 133.97 W (maksimum strength) by Wingate Test (A. Özkan, B. Arıburun, A.Kin-İşler, 2009).

Vertical jump and anaerobic strength values which were calculated in connection with body weight were 135.92 ± 7.15 kg.m/s as published by Uğraş and Savaş (2004), similar to our study (A. Uğraş, S. Savaş, 2004). Speed is among the fundamental motor qualities which has to be trained in connection with the maximal strength and maximal anaerobic strength.

Twenty and Fourty yards sprint and pro shuttle agility tests were applied in order to determine the speed and agility qualities of our National American Football Team. It was observed that the 40 yard sprint test values of our players were lower than the values obtained from the NCAA players (A.C. Fry, 1991). In the literature, no data on 20 yard sprint test and pro shuttle agility test of American Footballers were found.

5. Conclusion

The excess fat tissue in the body has negative effects on strength, agility, anaerobic power and speed which have important effects on performance.

Our National teams' players were determined to have normal fat percentage, but 1RM bench press and 40 yard speed run scores were very low compared to NCAA players.

These results are thought to be related to the fact that this sports is quite new to our country and the number of training sessions of players in their own club per week is inadequate for a national level athlete (3 sessions / week)

Either to have a better overall health in the team or to have success on global scale our team has to improve on maximal strength, explosive strength and alactic-anaerobic power which are the general characteristics of this unique sport. It is necessary to set up more training sessions per week and to design training programs with the appropriate volume and intensity.

Training plan should also include aerobic sessions and should avoid commonly seen obesity in American Football players which is also known for its negative effects on performance and health.

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TRAINING IN TEAM SPORTS, BASKETBALL. THEORY, TECHNIQUE AND DIDACTICS RIMODULATION IN SPORT TRAINING.

IZZO RICCARDO E.,[1,2] RUSSO LUCA[1,3]

Abstract
In this work after years of study we examine the current situation of the training methodology in sport, most of all for youth, with an investigation on basketball with youth.
In particular, we focus on structure, suggesting a review of the way of operating, more linked to the scientific aspect of the proposition and planning of the training, to become more adapted to the individual and to the group than is currently conceived.
The focus is derived from the situation, today recognized by everyone in the field, of a preparation of a senior athlete linked to a more and more experiential activity, though with its indisputable importance, but limiting the basic work under the minimum level.
The further revelation which is indicated is the opportunity for scientific, physiologic, and also psycho-pedagogic parameters linked to the age of the individuals, by referring to their growth phases to their sensitive phases and other issues.
The aim is to bring all the scientific synergies derived from the collaboration of all the fundamental issues of science in the theory of sport, above all in youth, in order to achieve the best preparation. This alone merits a very delicate and specific reasoning, in that it is dedicated to individuals who are rapidly changing in their psycho-physical being which is substantially important for their future.
Keywords: Training, quality of learning, quantity of learning, optimal preparation

Introduction

Training as a concept has been taken in serious consideration in all fields as the base and structure of the future of things, and perfectionism of one's quadri.

Training, as we believe should be continuous, and not once in a while.

It should be an instrument of enhanced cultural and technical value for those teaching and preparing people at various levels.

In sports, for example, our field of discussion, and in particular youths, therefore individuals in progressive and continuous growth, we intend training as a taxonomic and programmed work proposition, aimed at the hypothetical optimization of specific learning; what we like to define as 'optimal preparation' (J.W. Bunn, 1955).

On the contrary, what the panorama for youth in Italy proposes today with disarming continuity is, in the best of cases, athletes with their training designed on a mere repetition of gestures and elements of the game, training based on gestural automatisms which lack flexibility and adaptability for playing team sports, in our case, basketball.

Discussion

Substantially, robotic players are produced, moreover with an insufficient basic level of individual technique.

Players, or rather "automatons", in the incomplete acceptance of the concept, without their own knowledge and sufficient know how, and therefore with the technical-tactical programming received, only know how to reproduce the technique by memory.

They lack their own critical interpretation of the real situation of the game, not being players who can often choose the right solution, moment by moment based on what the field requires.

Perhaps it is useful to remember however, that, except for very few talents who are probably able to find good solutions by themselves, most athletes we have worked with are normal individuals who are trained, obviously also thanks to their genetic

[1] Sport Science Faculty, Urbino, ITALY
[2] Olimpia Milano basketball AJ Youth Formation Manager, ITALY
[3] Human Movement and Sport Science Faculty, L'Aquila, ITALY
Email: riccardo.izzo@uniurb.it
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patrimony, in function of the "food" which is offered to them by the trainers.

We can therefore say, and we are convinced, that each player is substantially the product of the training that he receives (A. Kruger, 1997).

What we want to underline is that it is time to review the concept of teaching, or rather training, which currently is too rranigid and too linked to the search for results in the short term or very short term period, probably due to the over-structured and very dry "method" which lacks a projective logic for an age which is often considerably premature, that produces insufficient positive feedback, for a type of training which must be qualitatively and quantitatively projected over the years and not days or weeks.

The training must give results with the future in mind, strictly correlated to the various age groups, remembering that a thirteen year old will stop growing around seventeen or eighteen, and not before.

Of course this work foresees feedback along the way to evaluate and monitor the effectiveness of the work proposed.

Therefore, the multi-year program for youths, starting for example at thirteen, must absolutely have a multi-year connotation, from three to four, if not five years.

Let's remember, moreover, that basketball, as a team sport, increases the difficulties of a team sport played in very close contact with the adversaries and is not divided by a net, for example, with a set of a multitude of abilities of at least sixty or more technical elements between attack and defense that are acquired very meticulously in order to be used effectively at the right times, other than on a court which has become too small and therefore does not offer the right space for those who are not able to control their technique.

Let's return, therefore, to our personal conviction which is: it is **the type of training proposal** which determines **the quality and the quantity of the learning**, and the more it is qualified, the greater benefits the athletes will obtain (D.L. Gill, 1995)

The figure which we believe and always seen fundamental in this process is obviously the instructor, with a different and more attentive preparation to verify if his athletes are effectively learning what he is teaching them (cognitive and technical-mechanical feedback), more than expecting from them things which they can and must do, that is to find solutions which cognitively are not yet part of their intellectual or motor makeup.

An instructor, therefore, with a broad cultural preparation, other than techniques and tactics of pedagogy, auxology, and other elements of learning, which help him not to underestimate elements like the sensitive phases of the various ages in question, the chronological and biological age of the youths, the individual and group level of preparation and other factors, which will lead to requests that are more adequate for the individual player and the group. (R. Martens, 1990).

The juvenile sport instructor

In our opinion sometimes the sport instructor is dismissed from the real and foundamental role of educator and trainer of techniques and overall of moral and ethic qualities, as well as useful sport rules, that can be easily translate in every day life rules.

From this point of view the sport instructor is very often a decisive figure by the psychological, physical and technical education and the relative influence on kid's initial pedagogic phase, specially nowadays because the absence of family in the kid's life. (T. Bober, 1981).

Because of this crucial role, the sport instructor must has got a great flexible mind (to be self-critical, humble, helpfully and to get sacrifice spirit both in and out of court), he must to be really prepared both on psyco-pedagogic and technical aspects, he must to know the learning rhythms of every age group, he never must to pursue any personal scope or to follow the glory of success (specially the short term one), moreover he must to be far-sighted. (V.P. Filin, 1983)

Let us to review the essential requirements characterizing the sport coach figure:

a) PRESENCE ON COURT:
- to be unimpeachable and to be a point of reference;
- Structuring the rules to respect;
- positioning properly in the court;

b) LANGUAGE:
- clear and easy;
- use and modulation of voice;
- avoid long and complicated speech;

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c) COSTANT TECHNICAL RETRAINING:

- to know the new methodologies and techniques;
- to adapt the contents and the wrok to the group.

The sport instructor usually must to be able to cover several different roles as well as:

* technician
* teacher
* organizer-entertainer
* trusted individual
* leader
* psychologist
* he must to be able to make first aid in case of injuries
* dynamic recovery of injuried players.

The instructor has to move on **several fields of activity**:

- Creation and management of a group
- Relationship instructor-learner
- Relationship instructor-parents
- Training psyco-pedagogy
- Psycologgy of the learner in its various aspects
- Physical conditioning (in case of absence of specialists)
- Technical conditioning

The **personality** of a coach can be defined:

NOMINATIVE: when the player does not have freedom of expression, but a unique work proposal.

BUREAUCRATIC: when the sending of human contents is very poor.

PERMISSIVE: when the instructor loose the control trying to get the sympathy of the players.

PARTICIPANT: when, maintaining his rigid plans, he is able to involve the kids in the activity **(preferred)** (R. Mager, 2001).

The instructor could to face to the sportive drop out problem due to several causes:

A) ***PSYCOLOGICAL SATURATION*** of the young player: the roel of instructor is very important, he always has to be able to offer motivational incentives; at the same time he does not to be obsessive in the requests to the kid, but he has to know the individual ant team limit of stress; he has to know "what" and "how much" he can ask to every player.

B) ***LACK OF CLARITY OF GOALS:*** to pay attention in acting in an incomprehensible way poor of significance for the players, not pursuing rationally a well determined goal.

C) ***INJURIES:***
- accidental
- consequences of previous causes: poor psychical or physical training; tiredness; lack of concentration; etc...;

D) ***INADEQUACITY OF PLANNING:*** when the planning of work does not fit with the age of learner both quantitatively and qualitatively or the stimulus is inadequate.

E) ***LACK OF MOTIVATION*** of the learner. It is a tricky point and it is very common with very young groups. This situation is due principally to the lack of enthusiasm with regards to the training process or to the instructor-coach. In this cases the instructor must to try to follow in an equal and fair manner all the components of the team and to try to make they feel important and to the centre of the attention.

The learners are not expert on specific focus of training effects, but they are very careful in their physical and technical improvement because it is the main theme of each training session and it is the real push of

the learning process together with the personal appeal of the instructor.

The issues of coaching process and its relationship with learning of young players are very interesting fields.

It is our intention, in future, to handle this argument in a more exhaustive and complete way, if there is the necessity, analyzing separately different sports with the aim to describe specifically the differences that can characterize each discipline.

It is important to give the youths the necessary time they need to interiorize the learning in an aware manner, to acquire learning (E.D. Mc Kinney, 1991)

An element which is particularly interesting for instructors of youth, in our case basketball, is to not take for granted the acquisition of the technique by the athlete, other than the technique in itself, of the concept which is behind it, which is to say that something that lets the athlete know when and if that technique should be used or not (D.I. Anderson, B. Sidaway, 1994).

This is defined as "reading the situations" and is the consequent solution to the problem which at the level of structured athletes is substantially the effective qualitative difference among them.

This concept, which is very important on the field, is not always easy to define in applicative terms in training.

That is to say that it should be inserted in the didactic-methodological planning, to enact when proposing training exercises.

According to us, the reading of the situations constitutes the knowledge of the subject under study, knowing how to play, again related to the age and objectives of the individuals, ability in the specific technical gestures for a particular sport, conditional abilities, and above all, regarding problem solving, coordinative abilities, and motor combination, from the ability of differentiation to the ability of equilibrium and other abilities. (M. Metzler, 1983)

These are the elements that in the choice of the exercises to propose to the athletes should be taken into consideration.

When working with young athletes it is always important to verify the starting point of everyone, from that point plan and realize a well defined work plan for future training, both for the individual and for the group-team in the specific team sport. (S. Arend, J. Higgins, 1976).

Doing this, the work is optimized, starting from the real data and not the hoped or imaginary ones, obtaining moreover greater homogeneity of the individuals of the group and therefore giving the group a better overall quality. (J.W. Bunn, 1972)

It will be the better player, a player able to think autonomously, to solve the problems which are proposed with an adequate technique and not invented, well prepared physically, obviously based on the athlete's abilities and linked to the age of each one, to the various levels achieved, which can be more and more competitive and perhaps limit the foreign excess of power.

Everyone talks about the youth sector and its importance, at time because it seems "politically correct", as though the youth should be the natural exchange for the athletes of the first team, but in fact, it has been said and is continued to be said that evaluating attentively what happens in the more important teams, and not only, today there is a stable predominance of presences, both form UE or extra UE community athletes, not always as a good choise in technical and economic terms. (K. Davids, A. Lees, L. Burwitz, 2000).

To achieve a conclusion of this dissertation, it is necessary to think to the ethical and moral aspect of the individual education, both for instructors and players. (M.R. Weiss, 1992)

Form an anthropological point of view we can say that the idea of "individual", instructor or player, which made own this idea of educational model, has got inside an awareness of the humanistic and personal perspective, that is an "individual" able to be deeply free, with reference to the biological, cultural and psychological influences (self idea and self perception in the living environment). (M.E. Tubbs, 1986).

The individual, as the sport-individual (child, teenage, adult), has got a dignity of human person when he can act with his own will, making decisions, taking responsibility, having inter-subjectivity (existing with others around) and focusing on a goal.

It does not exist a division between individuals and players; during the match on the court there is the individual, and the ideal

player is the independent individual, knowing his limits and qualities, able to get responsibility and focusing with tenacity on a target, avoiding to give to others the own responsibility or to find support for the errors as often it happens in families too much condescending and where a verbal sanction would be effective and educative in our opinion. Sometimes the parent tends to justify acts very bad made by the own guys.

The theoretical models (B. Amblard, 1994) which also inspired our Federation for great courses for instructors and coaches, were taken from the integrated psychological model of G. Ariano and were based on cognitivism applied to training for adults and C. Rogers' pedagogic model.

Conclusions

Contents which should help in **continuous training** discussed with our instructors and linked to theoretical knowledge could be the following:

- Theoretical knowledge (technical, tactile, biological, methodological and psychological knowledge);
- Professional maturity (discussion of theory with colleagues, lesson planning of a typical lesson or teaching cycles, practice teaching, discussions with the coach, psychological or methodological counseling);
- Personal maturity (use of practical exercises in small groups to increase understanding of one's own relational style respect to colleagues, staff and athletes, with them the need to focalize on the teaching style);
- Individual and group counseling by a psychologist on the difficulties met in the management of the activity);
- Humility regarding continuous training

In the end the basic concept to start from is that they are instructors and athletes and we need to offer them a proposition to do a good job, well planned and in every didactic situation it is important to refer to the degree of preparation of each person in order to avoid excessive or lack of information.

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COMPARATIVE STUDY ON THE EVALUATION OF THE ENERGETICAL PARAMETERS WHILE PERFORMING A VERTICAL JUMPING ON BOTH LEGS

MEREUTA CLAUDIU[1], TALAGHIR LAURENTIU[1], MANOLACHE GABRIEL[1], ICONOMESCU TEODORA[1]

Abstract

Purpose. The paper presents different methods used for evaluation of the average power as energetical parameter on vertical jumping on both legs. The average power is calculated using Lewis's, Harman's, Johnson's & Bahamonde, Sayers's and Georgescu's formulas. A comparative analysis is performed.

Theoretical concepts. The average power can be calculated using different formulas experimentally determined, using either the mass and the vertical jump height, or the flight periods of time and the periods on the ground. Different formulas were used as follows:

- Lewis's formula uses the mass and the jump height as input data;
- Harman's formula provides the average power and the peak power, using regression method;
- Johnson's and Bahamonde formula uses the mass, the jump height and the athlete's height as input data;
- Sayers's formula provides the average power using the same input data as Lewis, but with different coefficients;
- Georgescu's formula is based on Bosco's theory and it uses the flying times and ground times as input data.

Conclusions. In order to get the average power developed by an athlete while performing vertical jumping on both legs, we can use different experimental methods.

For each method, we can reveal the input data and the energetical parameters provided by the experiment (the average and the extreme values).

The input data are different from one method to another. Most formulas are based on the vertical jump height and on the athlete's mass, except for the MGM formula which is based on the flying times and times on the ground. The average power as energetical parameter provides an accurate evaluation of the ratio force-power which is very important as training parameter. The training process can be oriented to render the value of this ratio optimum.

Key-words: energetical parameters, average power, vertical jumping.

Introduction

Experimental measurements and investigations are considered to be a real process of objective research of the qualitative and quantitative aspects of any phenomena or process.

Sports science has its own patrimony of means and methods of investigation, which provides useful information that can be adapted to specific necessities.

As the performances are higher and higher and the athletes' body is subjected to efforts bigger and bigger, it is necessary to improve the methods of investigation, to render their results more realistic and to establish mathematical models that describe more and more accurate their performances.

It is important to estimate the average power developed by an athlete in order to conduct his training to a better performance in sport (F.W. Dick, 2003).

The trainers, the MD's and other specialists involved in training process need realistic data that can ensure an exact and rigorous training process.

The importance of measurements and investigations in sports

The main issues that reveal the importance of experimental data in sport science and training process are:

- The necessity of estimating and characterization of the athlete, of the sport field;
- The necessity of comparison between two stages of training;
- The necessity of determining the contribution of each component to the performance;
- The necessity of revealing the causes of mistakes and the errors, in order to eliminate them or to

[1] "Dunărea de Jos" University of Galați, ROMANIA
Email: claudiu.mereuta@ugal.ro
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reduce their effects.

To be effective, the experimental measurements must meet the following requirements:

- To use methods and means appropriate to the sport field. It is important to run analysis during competitions, laboratory tests and training stages;
- To be less disturbing to the training process;
-
- To last a while;
- To be accessible and easy to calculate;
- To be simple;
- To be realistic.

Theoretical concepts

In this paper we intend to present different methods used for evaluation of the average power as energetical parameter on vertical jumping on both legs. The average power is calculated using Lewis's, Harman's, Johnson's & Bahamonde, Sayers's, Bosco's and Georgescu's formulas (D.L. Johnson, 1996; E.A. Harman, 1991; S. Sayers, 1999; C. Bosco, 1983). Then, a comparative analysis is performed.

Methods of expressing the mechanical power of body

The average power can be calculated using different formulas experimentally determined, using either the mass and the vertical jump height, or the flight periods of time and the periods on the ground.

The mechanical work when a vertical jump is performed can be determined as follows:

$$L = F \cdot d \qquad (1)$$

where:

L - is the mechanical work;

F - is the force;

d - is the jump height distance.

Also, the force can be written as follows:

$$F = m \cdot a \qquad (2)$$

where:

m - is the mass;

a - is the acceleration.

It is difficult to determine the power, because the duration of the acting force is unknown.

The mechanical power can be written as follows:

$$P = \frac{L}{t} \qquad (3)$$

Due to the fact that is rather difficult to calculate the mechanical power using formula (3), some more proper experimental methods were developed, in order to estimate the average power from vertical jump on both legs.

Lewis's formula

Lewis's formula uses the mass and the jump height as input data (E.A. Harman, 1991).

We can determine the power as follows:

$$P = \sqrt{4.9} \cdot m \cdot \sqrt{d} \qquad (4)$$

- To be adequate to the purpose, to correspond to the structure of motion;

Other scientists proved that this formula is inadequate because it doesn't take gravity into account, and it doesn't state if the result is the peak or the average power.

Harman's formula

Harman's formula provides the average power and the peak power, using regression method (E.A. Harman, 1991).

The pick power is:

$$P = 21.9 \cdot d + 6 \cdot m + 822 \qquad (5)$$

The average power is:

$$P = 21.3 \cdot d + 3 \cdot m - 393 \qquad (6)$$

where:

d - is the height distance in cm;

m - is the mass in kg;

Johnson's and Bahamonde formula

The Johnson's and Bahamonde formula uses the mass, the jump height and the athlete's height as input data.

The pick power is:

$$P = 18.6 \cdot d + 10.3 \cdot m - 5.3 \cdot h - 308 \qquad (7)$$

The average power is:

$$P = 13.8 \cdot d + 2.7 \cdot m - 6.8 \cdot h + 31 \qquad (8)$$

where:

d - is the jump height distance in cm;

m - is the mass in kg;

h - is the athlete's height in cm.

Sayers's formula

The Sayers's formula provides the average power using the same input data as Lewis, but with different coefficients (S. Sayers, 1999).

The average power is:

$$P = 60.7 \cdot d + 45.3 \cdot m - 2055 \qquad (9)$$

where:

d - is the height distance in cm;

m - is the mass in kg.

Bosco's formula

The Bosco's formula uses the repetitive test of jumping to estimate the average power, the flight time and the number of jumps, as follows (C. Bosco, 1983):

$$P = \frac{t_f \cdot t_t \cdot g^2}{4 \cdot n \cdot \left(t_t - t_f\right)} \qquad (10)$$

where:

t_f - the flight time;

t_t - the total time;

g - the acceleration due to gravity.

Miron Georgescu's Formula

The Miron Georgescu's formula is based on Bosco's theory and it uses the flying times and ground times as input data (MGM test description). The power unit is determined using the formula:

$$P = \frac{\frac{g}{8} \cdot \sum_{i=1}^{n} t_{fi}^2}{\sum_{i=1}^{n} \left(t_{fi} - t_{gi} \right)} \qquad (11)$$

where:

t_{fi} - the flight time of jump i;

t_{gi} - the time on ground;

g - the acceleration due to gravity.

Numerical results

In order to get the numerical results, we performed all experimental procedures for five athletes.

For the first test (Lewis) we were able to determine the mechanical power using the jump distance and the body mass.

The results are shown in table 1 and the magnitude of the mechanical power is revealed in fig.1.

Table 1 – The Lewis' experimental results

	S1	S2	S3	S4	S5
Height [cm]	167	158	183	173	174
Mass [kg]	64	53	74	67	78
Jump distance [m]	0.32	0.4	0.39	0.34	0.35
P[Lewis]	801.4	742	1022.9	864.7	1021.4

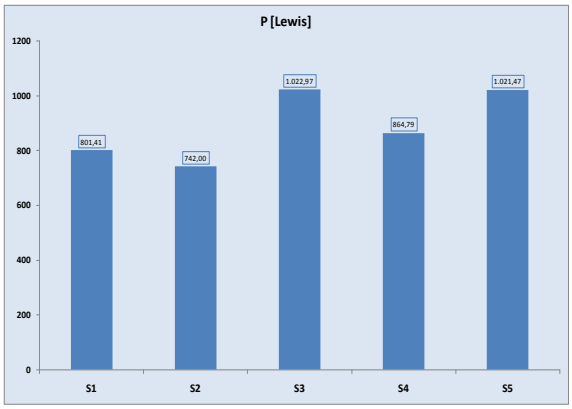

Fig.1 The magnitude of mechanical power by Lewis

The second test was the Harman's, which provide the average mechanical power developed using equation (6). The results are shown in table 2 and the magnitude of the mechanical power is revealed in fig.2.

Table 2 – The Harman' experimental results

	S1	S2	S3	S4	S5
Height [cm]	167	158	183	173	174
Mass [kg]	64	53	74	67	78
Jump distance [m]	0.32	0.4	0.39	0.34	0.35
P[Harman]	751.96	667.2	1129.17	863.02	1137.05

The third test of Johnson and Bahamonde provide also the average power using the jump height, the mass and the athlete's height. For the considered subjects, the results are shown in table 3 and the diagram in fig.3 reveals the magnitude of the average power.

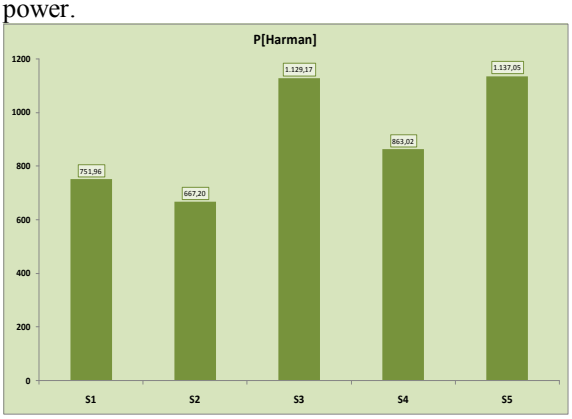

Fig.2 The magnitude of mechanical power by Harman

Table 3 – The Johnson's and Bahamonde experimental results

	S1	S2	S3	S4	S5
Height [cm]	167	158	183	173	174
Mass [kg]	64	53	74	67	78
Jump distance [m]	0.32	0.4	0.39	0.34	0.35
P[Johnson, Bahamonde]	1119.8	1261.7	1484.6	1204.7	1591.4

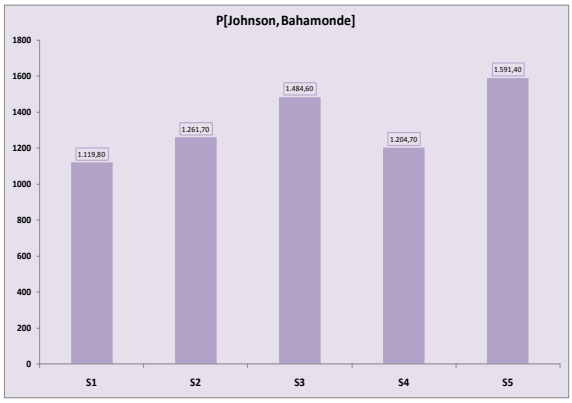

Fig.3 The magnitude of mechanical power by Johnson and Bahamonde

The fourth test provides the average mechanical power using the Sayer's formula, which depends on the mass and on the jump distance.

The results are shown in table 4 and the magnitude of the mechanical power is revealed in fig.4.

Table 4 – The Sayer's experimental results

	S1	S2	S3	S4	S5
Height [cm]	167	158	183	173	174
Mass [kg]	64	53	74	67	78
Jump distance [m]	0.32	0.4	0.39	0.34	0.35
P[Sayer]	863.624	370.18	1320.87	1000.73	1499.64

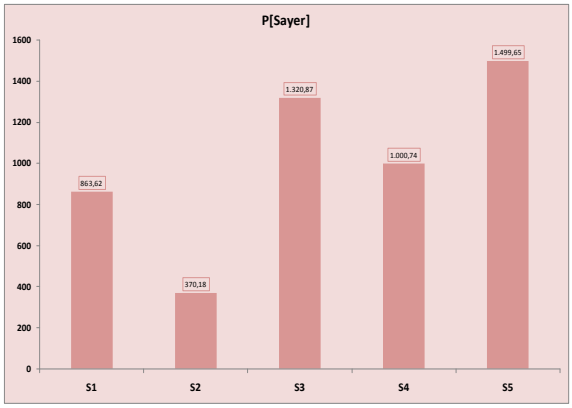

Fig.4 The magnitude of mechanical power by Sayer

The fifth and the sixth tests are using as input data (experimentally measured) the time variables on air and on ground.

The values for Bosco's test are shown in table 5 and the diagram in fig.5 shows the magnitude of each athlete involved in the experiment.

Table 5 Values of Bosco's test

S1	Total time	7.739
	Time on air	5.341
	Power	41.478
S2	Total time	7.867
	Time on air	5.944
	Power	58.515
S3	Total time	8.237
	Time on air	5.926
	Power	50.827
S4	Total time	6.074
	Time on air	3.949
	Power	27.155
S5	Total time	7.8
	Time on air	5.351
	Power	41.014

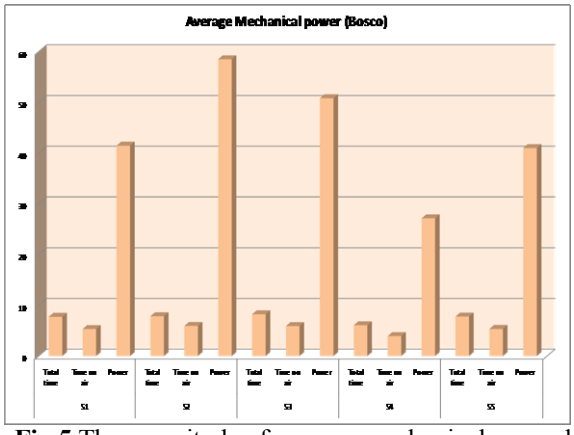

Fig.5 The magnitude of average mechanical power by Bosco

The values for Miron Georgescu's test are shown in table 6 and the diagram in fig.6 reveals the magnitude of the average mechanical power.

Table 6 Values of Gergescu's test

S1		S2		S3		S4		S5	
Ground	**Air**	**Ground**	**Air**	**Ground**	**Air**	**Ground**	**Air**	**Ground**	**Air**
0.223	0.484	0.17	0.57	0.226	0.559	0.213	0.486	0.237	0.446
0.217	0.46	0.19	0.519	0.202	0.561	0.174	0.516	0.231	0.438
0.217	0.514	0.175	0.562	0.201	0.558	0.169	0.506	0.223	0.459
0.22	0.45	0.183	0.567	0.211	0.532	0.171	0.528	0.211	0.494
0.212	0.51	0.176	0.536	0.202	0.556	0.244	0.042	0.219	0.472

0.211	0.502	0.166	0.555	0.229	0.542	0.197	0.011	0.225	0.484
0.22	0.486	0.161	0.546	0.198	0.535	0.194	0.507	0.228	0.517
0.212	0.487	0.2	0.502	0.215	0.552	0.18	0.487	0.213	0.532
0.214	0.499	0.164	0.533	0.22	0.489	0.207	0.494	0.223	0.518
0.234	0.464	0.163	0.514	0.197	0.504	0.183	0.013	0.216	0.505
0.218	0.4856	0.1748	0.5404	0.2101	0.5388	0.1932	0.359	0.2226	0.4865

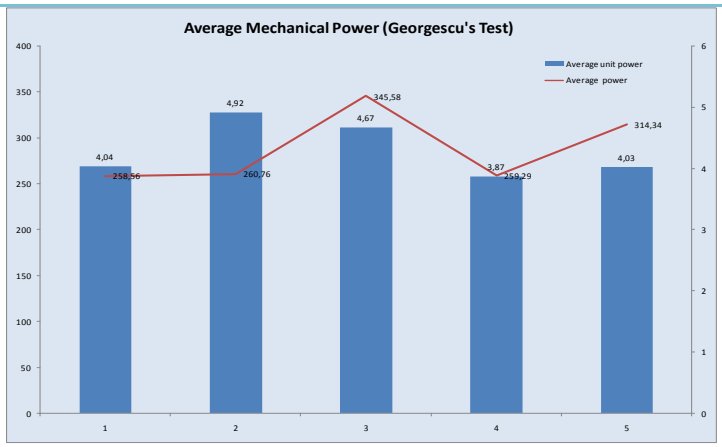

Fig.6 The average mechanical power by Miron Georgescu

Discussions

Based on the results obtained by the tests performed on five athletes, we can state that there are significant differences between the determined values.

Thus, we conclude that the first four tests (Lewis, Harman, Johnson & Bahamonde and Sayer) provide results (table 7) that are comparable, as follows:

Table 7 Comparative results

	P[Lewis]	P[Harman]	P[Johnson, Bahamonde]	P[Sayer]
S 1	801.4	751.9	1119.8	863.6
S 2	742	667.2	1261.7	370.1
S 3	1022.9	1129.1	1484.6	1320.8
S 4	864.7	863	1204.7	1000.7
S 5	1021.4	1137	1591.4	1499.6

We can see that the Harman's test can be considered as the most accurate test for average mechanical power, as its procentual deviation from the average power is smaller than the other tests (fig.8).

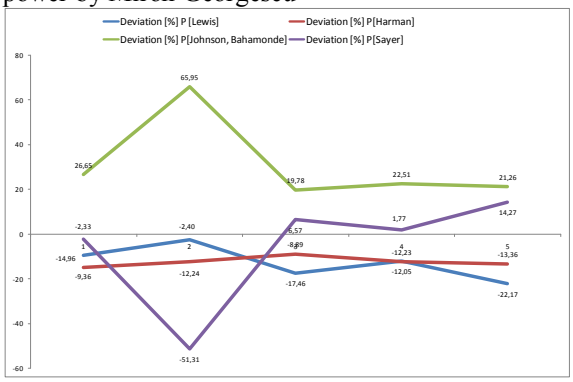

Fig.8 Deviation of average mechanical power determined with different test from the average

There are important differences between one test to another, regarding the magnitude of the average mechanical power, although they are using the same input data. Thus, the comparison shows that for subject 4 the difference between the average power calculated with Lewis's formula and the average power calculated with Farman's formula is the smallest (-0,2%), while for subject 2 we get the maximum difference between the average power calculated with Lewis's formula and the average power calculated with Johnson's & Bahamonde formula (70,04%).

Such large differences (fig.9) prove that none of the fourth test is relevant to the estimation of average power.

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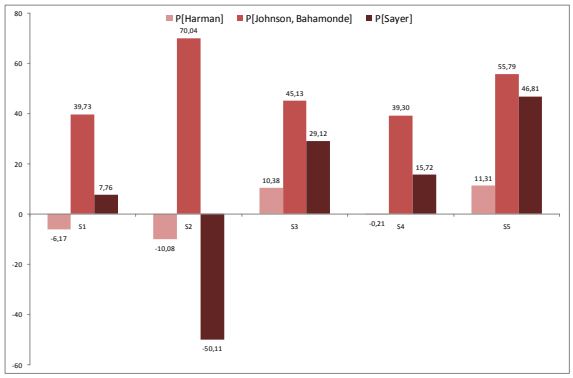

Fig. 9 Differences between one test to onother

As for the last two tests (based on the multiple vertical jumps) we can reveal that there are also significant differences due to the fact that Miron Georgescu's test provides the average unit power (fig.10).

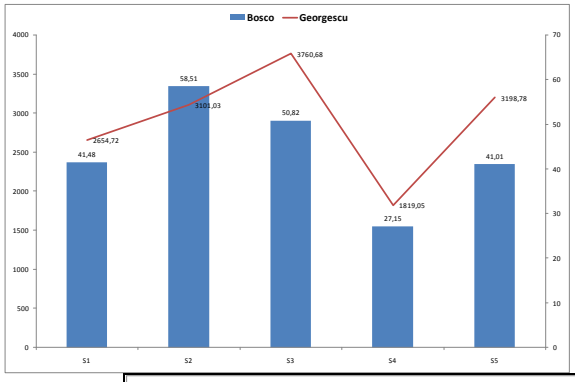

Fig. 9 Differences between Bosco and Georgescu test

Conclusions

In order to get the average power developed by an athlete while performing vertical jumping on both legs, we can use different experimental methods.

For each method, we can reveal the input data and the energetical parameters provided by the experiment (the average and the extreme values).

The input data are different from one method to another. Most formulas are based on the vertical jump height and on the athlete's mass, except for the MGM formula which is based on the flying times and times on the ground.

The average power as energetical parameter provides an accurate evaluation of the ratio force-power which is very important as training parameter. The training process can be oriented to render the value of this ratio optimum.

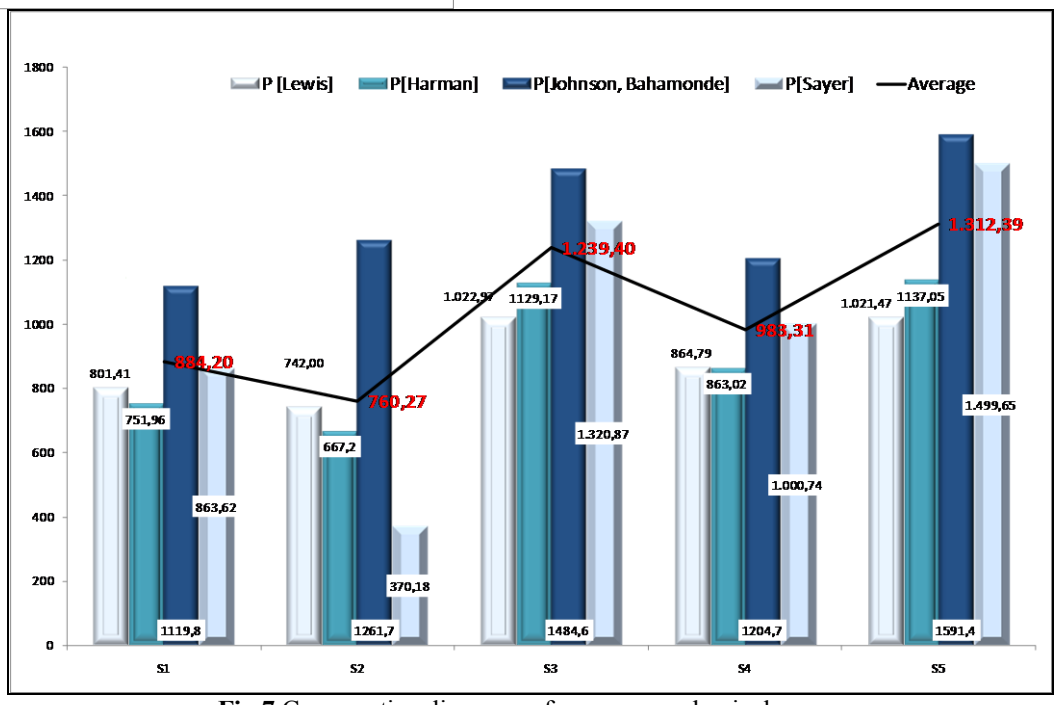

Fig.7 Comparative diagrams of average mechanical power

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RESEARCHES CONCERNING THE ANALYSIS OF SOME TECHINCAL ASPECTS OF THE MALE TRIPLE JUMP IN COMPETITION

MIHAI ILIE[1]

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Abstract

Purpose. The competition evolution of athletes show the ability of learning the content of the training process emphasizing how they express themselves in conditions of adversity and various environmental factors. The aim of this research was to analyze a series of technical aspects specific to the triple jump event in competition conditions by using the Dartfish© motion kinematic analysis software.

Methods. The research was conducted by using the following research methods: references method, kinematic analysis method, case study, table and graphic method and it was focused on the participants at the Athletics National Championship specialized in the triple jump event.

Results. The technical aspects analyzed, and the values of the kinematic indicators that were used showed similarities with the existing technical theoretical model of the specialty literature on the specific angles of this event recorded in the first hit phase.

Conclusions. The results obtained in this research emphasize the fact that the aimed technical aspects can represent objective indicators of the quality level of the technique specific to this event having in mind the theoretically model from the Romanian and foreign specialty literature.

Key words: competition, kinematic analysis, technique, triple jump event.

Introduction

The competition evolution of athletes show the ability of learning the content of the training process emphasizing how they express themselves in conditions of adversity and various environmental factors.

The analysis of the technical development is one of the main instruments that can influence the training process orientation towards advanced sportive techniques, taking into account at least two aspects: „the first is the performance macro-area, meaning that a gesture must always be as effective and efficient as possible; the second consists in the different morphological conformation of athletes, therefore a particular executive technique can work for an individual but not for another." (R. Izzo, 2010)

"The triple jump includes the specificity of complex coordinative and technical abilities, particularly the jumping rhythm and time management, good take-off coordination into the hop, step and jump as well as the balance (equilibration) during jumping flight" (M. Niessen *et.al.*, 2003).

"In order to achieve his aim the triple jumper requires a precise approach with an optimal, almost maximum approach speed with which he produces kinetic energy. A successful triple jump performance is characterized by the athlete using a good technique which permits the maintenance of horizontal velocity and therefore, kinetic energy during the three jump segments". *

The **aim** of this research was to analyze a series of technical aspects specific to the triple jump event in competition conditions by using the Dartfish© motion kinematic analysis software.The accomplishment of this aim was possible by achieving the following objectives:

- the establishment of the technical aspects which will be analyzed in the research;
- the establishment of the analyze

[1]Faculty of Physical Education and Sport, University of Pitesti, ROMANIA
Email: ilie112004@yahoo.com
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method which will be used in order to analyze the technical spects of the of the male triple jump event

- the establishment of the kinematic parameters which will be used to obtain information regarding the chosen technical aspects from the research.

Method

The research was conducted by using the following research methods: references method, kinematic analysis method, case study, table and graphic method and it was focused on the participants at the Athletics National Championship specialized in the triple jump event.

The images were captured during the triple jump event by using a Sony video camera and then were analyzed by using the Dartfish© motion kinematic analysis software.

The kinematic parameters used were the following: the distance, the position and the angle.

The technical aspects covered in this research were: the length of the last step of the approach running , the body mass center position during the first hit, the distance from the projection of the body mass center on the ground and the foot contact point in the first hit achiving moment, the contact angle, the hit angle and the take-off angle of the firts hit (the hop).

Results

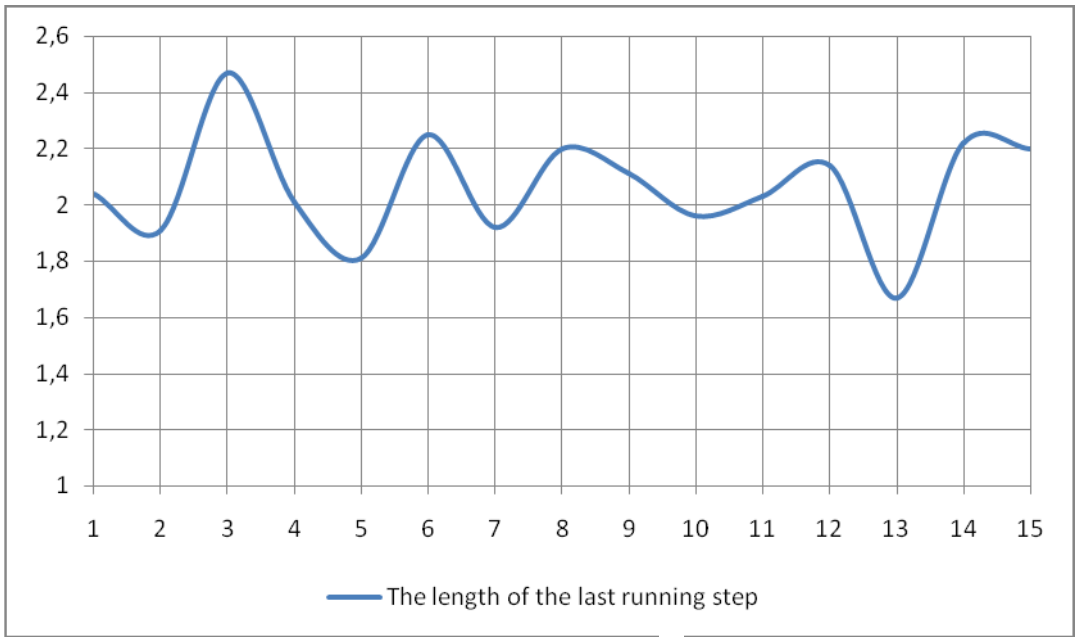
As a result of the kinematic analysis of the technical aspects aimed in research and after processing the statistical data obtained I noticed the following issues:

- refering to the length of the last step of approach running , it has been recorded a dynamic whose average was 2.06 m with a standard deviation of ± 0.19 m (Table 1, Figure 1)

Table 1. The value of the kinematic indicators analysed during the last step of the approach running

No.	The length of the last approach running step (m)	The position of the body mass center during first hit (m)	The distance from the projection of the body mass center on the ground and the foot contact point in the first hit achiving moment (m)
1	2,04	0,91	0,53
2	1,91	1,11	0,35
3	2,47	0,94	0,40
4	2,01	0,91	0,28
5	1,81	0,94	0,25
6	2,25	1,06	0,36
7	1,92	1,07	0,27
8	2,20	0,99	0,43
9	2,11	0,95	0,30
10	1,96	1,05	0,30
11	2,03	1,05	0,29
12	2,14	0,98	0,21
13	1,67	0,93	0,33
14	2,22	1,05	0,29
15	2,20	1,04	0,34
χ	2,06	1,00	0,33
σ	±0,19	±0,06	±0,08

Figure 1. The length dynamic of the last approach running step



- refering on the position of body mass center during the first hit, we can observe that the recorded values had an average of 1.00 m, and a standard deviation of ± 0.06 m (Table 1, Figure 2);

- the distance from the projection of the body mass center on the ground and the foot contact point showed an average value of 0.33 m, while the standard deviation was ± 0.08 m (Table 1, Figure 3);

Figure 2. The position of the body mass center during the first hit

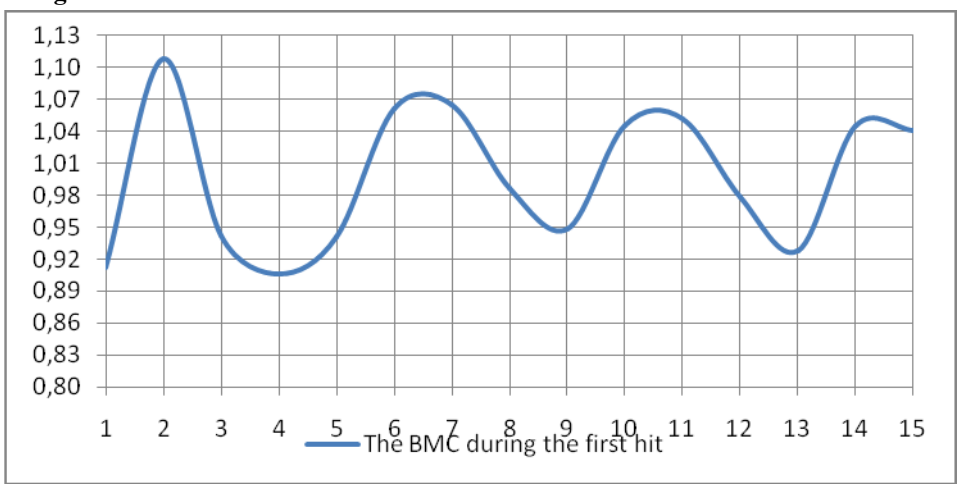


Figure 3. The dymanic of the distance between the contact point and the BMC projection during the first hit

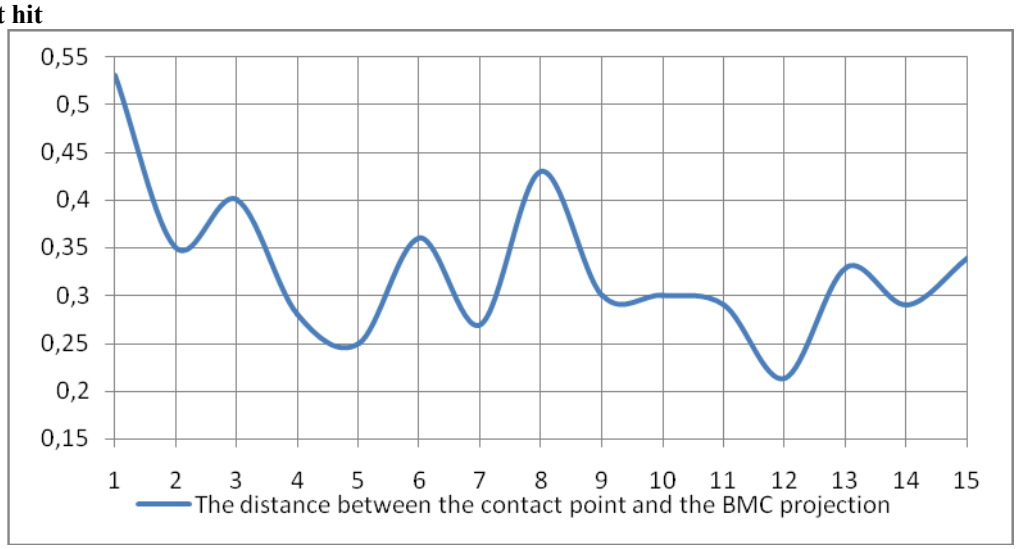
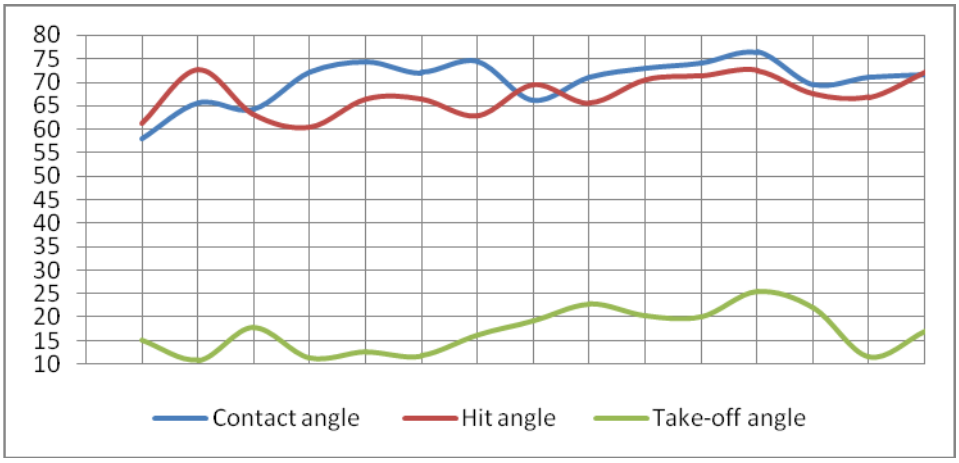


Figure. 4. The dynamic of the contact, hit and take-off angles values



• refering on the contact, hit and take-off angles achieved during the first hit, the average values were $70,23^0$, $67,22^0$, respectively $16,92^0$ with values of standard deviation of ± $4,67^0$, ± $4,01^0$, respectively ± $4,50^0$ (Table 2, Figure 4).

Table 2. The values of the specific angles attributed to the first hit

No.	Contact angle (degrees)	Hit angle (degrees)	Take-off angle (degrees)
1	58,00	61,10	15,05
2	65,60	72,70	10,90
3	64,30	63,00	17,90
4	72,00	60,30	11,30
5	74,30	66,40	12,60
6	72,00	66,40	11,80
7	74,40	62,80	16,30
8	66,20	69,40	19,10
9	71,00	65,60	22,80
10	73,00	70,50	20,20
11	74,10	71,30	20,02
12	76,40	72,53	25,37
13	69,53	67,41	21,94
14	71,00	66,80	11,50
15	71,60	72,10	17,01
χ	**70,23**	**67,22**	**16,92**
σ	**±4,67**	**±4,01**	**±4,50**

Discussions and conclusions

From the recorded data it can be stated that 66.66% of the analyzed jumps were performed with a length of the last step of the approach running of more than 2 m.

In terms of body mass center position during the performance of the first hit, the recorded value is higher than shown in the Romanian and foreign literature (P. Susanka *et. al*., 1990), mentioning that one of the factors that may cause this difference can be the difference in the height of the athletes, knowing that the position of the body mass center is influenced by height size.

At the same time, it can be appreciated that a high position of the body mass center during the hit phases occurs due to an insufficient flexion at the knee joint, action that may lead to an inefficient grazing trajectory determining a modest value in the length of the final triple jump.

The distance from the projection of the body mass center on the ground and the foot measured during the performance of the first hit (the hop), we can say the following aspects:

- *the contact angle* shows an average value fits, with a slight gain, in the trends presented in the specialty literature (70.23^0, respectively $65 - 70^0$) (L. Mihailescu, N., Mihailescu, 2006); the location of this angle at the superior limit presented by specialists in the field may be influenced by an insufficient lowering of the contact point highlights a value which supports the previous statement about the insufficient lowering of the body

Regarding to specific angles of the athletic jumping events (contact, hit and take-off angle),

- *the hit angle*, by its average value (67.22^0), is located outside the limits shown in the literature - $60 - 65^0$ (L. Mihailescu, N. Mihailescu, 2006; M. Alexei, 2005);

- the average of the take-off angle (16.92^0) fits in the values presented in various studies and specialized research that indicate values between $14\text{-}18^0$ (L. Mihailescu, N. Mihailescu, 2006; M. Alexei, 2005; Athletics Omnibus, fa; E. Luna, fa; H. Hommel, et. al. 2009).

The results obtained in this research emphasize the fact that the aimed technical aspects can represent objective indicators of the quality level of the technique specific to this event having in mind the theoretically model from the Romanian and foreign specialty literature.

body mass center during the contact between the hit foot with the ground (hit board) because of a superficial flection at the knee joint; mass center at the contact moment I order to realize the hit phase.

This value is lower than the technical theoretical model presented in the specialtuy literature (0.33 m compared 0.49 m).

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THE PERFORMANCE OPTIMIZATION IN THE DECATHLON EVENT BY MENTAL TRAINING OPERATIONALIZATION

MIHAILESCU LILIANA[1]

Abstract
The main objective of the sportive training and in the sportive performance which is consideed as "the excellences aspect, optimum of the human being".
The paper emphasizes and operationalizing model of the psychic training in decathlon, by a case study, achieved in a longitudinal experiment during three years.
The operationalizing of the psychic training of the athletes durin thr specic training of the decathlon event, can determine the maximization of the objective contest, by ajustment and self-ajustement of the psychic states specific to the athletes and the stimulation of the motivation.The dependent variable of the sportivre training is the athlets performnace.
The research presents the relation between the independent variable-psyhictraining and perfotmance in the training of decathlon. The motivation adjustment is experimental realized by specific tehniques, bazed on the quantification of the expectancy level, the valence and instrumentality of the motivation on the two levels: extrinsec and intrinsec.
Key words: training, performance, decathlon.

Introduction

Athlete's performance behavior includes his ability to express, the desire to affirm him, the effort and dedication, the requirements and pressure of the social ambience. Combined events of athletics, calls on athlete on all levels: biological, physical and mental and this makes the training process, at any level, to be very complex. (L. Mihailescu, A. Serban, 2005, p 14).

Mental strength and training are nodal points in the decathlon athlete success who needs mental training off the track as much as he needs physical and technical training in the stadium Human performance can be explained as a multiplicative factor of motivation and opportunities. / skills "(M. Bologa, 1994, p.119-125).

Mental preparation of the athlete requires "all strategies and techniques assemble used in order to increase mental capacity training and personality development of athletes according to the event/sport requirements to achieve superior outcomes and results in training and competition" (M. Epuran, I. Holdevici, F. Tonița, 2008, p. 222).

Mental preparation aims to achieve by means of sportive training and psycho - educational actions, that level of mental capacity which enables the athlete's effective work in training and superior results in competitions (M. Epuran, 1999, p. 71).

Hypothesis, aim, objectives

Research hypothesis. The operationalization of the decathlon athlete mental training and the focus of its objectives to achieve the optimum motivation, can lead to the maximization of the performance in the objective competition, by adjusting and of self-adjusting the mental states of the athlete and the stimulation of motivational factors.

Research purposes. The design, operationalization and experiment of a psychological training strategy in accordance with the schedule of competitions, in order to achieve the performance planned at the objective competition, based on theoretical premises presented in the research substantiation.

Research objectives:

- the knowledge of the motivation structural components value (valence -V., Expectancy - E., and instrumentality - I.), by their quantification techniques in order to establish the features specific to the mental training of the decathlon athlete, case study;
- designing the mental training objectives on educational areas (cognitive, affective, psychomotor) and training factors, the operationalization of current objectives, case study
- the deepening of the mental preparation methodology of the athlete, focused on global motivational force growth (GMF) and its customizing for the decathlon event; • the development and experiment of an intervention strategy to optimize the mental training of the decathlon athlete, in order to maximize the performance in the objective competition, case study.

[1]Faculty of Physical Education and Sport, University of Pitesti, ROMANIA
Email: lilimih2003@yahoo.com
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Content, methodology

The literature studied and the results of previous studies reveal that the motivational level of the athletes can be quantified by determining/objectivizing the global motivational force (GMF), reflecting: the *valence of motivation*, emotional primary dimension (attraction or rejection) and *motivation expectancy*, the subjective possibility of obtaining an outcome and motivation instrumentality (MI) with the help *of motivation valence and motivation instrumentality* which, expresses the degree to which a particular valence may or may not be achieved through self-effort.

The external motivation factors overlap with internal factors leading to self-adjustment processes and adaptation of the individual so that it acts spontaneously on its own based on its reasons.

The longitudinal experimental research type was conducted in a case study, its subject being athlete BB, a decathlon athlete with 9-year stage of competition in the combined events, 5 of them in the decathlon competitions.

To quantify the GMF and MI of the athlete we used 14 items structured on intrinsic and extrinsic factors of motivation according to previous research (M. Bologa, D. Gherghisan, 1994, L. Mihailescu, A. Serban, 2005), as it can be seen in table 1.

Table 1. The content of the intrinsic and extrinsic motivational items

Crt. no.	*Intrinsic motivational items*	Extrinsic motivational items
1.	***The content of the sportive activity***: trainings, contests, trainings camps, recovery	***Normative of sportive activities***: lows, statutes, regulations.
2.	***Chances of sportive abilities utilization and development in creative way***	***Material advantages and facilities***: bonuses, awards, home, mobility.
3.	***Passion for the practiced sport***	***Social climate***: family, club, public, coaches, press, radio-TV.
4.	***The sportive desire level***: superior categories promotions, team selections.	***Social prestige of the athlete, practiced sport, club, coach.***
5.	***Personal affirmation trend:*** team hierarchical integration and promotion.	***The used management style***: by the coach, club, and administration.
6.	***The need of performance:*** to be the best, to win, to self-improvement	***School-sport relation:*** the possibility to be a performance athlete and pupil.
7.	***Fear of failure*****:** misses, defeats, injures, opponents, security trend.	**Material conditions**: installations, equipment, material base, program-schedule.

Results, discussions

The values of V, E, I, GMF and the rank hierarchy of MF of athlete BB were compared with standards determined by Haralambie A., Mihailescu L., for the formative stage performance athletes (seniors) in 2009 (tables 2, 3).

Table no.2 - The value of the structural components of athlete BB motivation (red) comparing with the etalons that were determined to the senior athletes (blue)

Motivation components	**Valences**		**Expectancy**		**Instrumentality**	
Subjects	**Seniors Team**	**B.B./Coach**	**Seniors Team**	**B.B/Coach**	**Seniors Team**	**B.B/Coach**
Min.	32		19		19	
Decila I	37		25		25	
Decila II	38		28		28	
Decila III	39		29		29	
Decila IV	40		31		31	
Decila V (median)	**41**	**35/36**	**33**	**33/30**	**33**	**30/30**
Decila VI	41		34		34	
Decila VII	41.7		35		35	
Decila VIII	42		36		36	
Decila IX	42		38		38	
Max.	42		41		41	
Average	**40.01**		**32.01**		**32.01**	

Table .3 The rank hierarchy of MF and GMF value determined on seniors, athlete BB and its coach

MOTIVATIONAL FACTORS	**MF - seniors**		**MF B.B.**		**MF Coach**	
	Pct.	**Rank**	**Pct.**	**Rank**	**Pct.**	**Rank**
1. The contents of the sportive activity: training, contests, cantonaments	6.84	V	6	V-VIII	6	IV-IX
2. Chance of utilization and development of the sportive capacities in a creative way	6.79	VI	4	IX-XIV	4	X-XIII
3. Passion for the practised sport	8.22	I	9	I-IV	9	I-III
4. The level of sportive endeavor: promotions in superior categories, group selections	7.09	IV	6	V-VIII	6	IV-IX
5. The tendency of personal affirmation: integration and hierarchical promotion in the team	6.76	VII	4	IX-XIV	9	I-III
6. The performance need: to be the best, to win	8.16	II	9	I-IV	9	I-III
7. Failure fear: failing, losing, injuries, opponents.	4.29	XIV	4	IX-XIV	1	XIV
8. The sportive activity standards: rules, statutes, regulations	7.39	III	9	I-IV	4	X-XIII
9. The material advantages and facilities: bonus, prizes, dwelling, official trips	5.43	XII	4	IX-XIV	6	IV-IX
10. The special climate: family, club, audience, trainers, press, radio-TV	6.17	IX	4	IX-XIV	6	IV-IX
11. The social prestige of the athlete, practiced sport, club and trainer	5.81	XI	4	IX-XIV	6	IV-IX
12. The management style applied by the trainer, club, administration	6.45	VIII	9	I-IV	4	X-XIII
13. The realation between sport and school: the possibility to be a performance athlete and a pupil	6.05	X	6	V-VIII	6	IV-IX
14. The material conditions: instalations, equipment, material base, program - schedule	5.38	XIII	6	V-VIII	4	X-XIII
GMF	**6. 44**		**6.64**		**5.71**	

From the analysis of tables 2 and 3 we see are differences between the athlete and the average of senior values, as well as between the values of the athlete and his coach as athlete's perception of the motivational structure. Looking to the GMF values (Table 2) we found that the athlete shows a value of 6.64 GMF, what it shows on the motivation scale a medium motivational level and the coach gives him a low GMF of 5.71, but still the medium level.

Based on the values determined at athlete BB and taking into account the coach's assessment on the indicators mentioned above and the hierarchy of rank of each item in the two (athlete-coach), there were designed the mental training objectives, focused on increasing the motivational indices for competitive year 2009, reaching its 7100 performance points objective and promoting in the Combined Events European Cup Group A: the *fixing of motivation, level of aspiration and expectation; increasing the level of combativity and voluntary motivation; developing the self-improvement will and the achievement of a high social status; awareness of social opportunities for high level sports activity*.

In table 4 there are presented the general objectives and their applicability regarding the training of the athlete in a training meso-cycle.

Table 4. ***The objectives of psychic training concerning the motivational aspect of the athlete***

General objectives	Operational objectives
GOB.1. – Self-confidence development	**OP.1.1.** - To objectively evaluate his progress in sportive training;
	OP.1.2. – To objectively analyze the achieved performance level;
	OP.1.3. - To learn a positive thinking.
GOB.2. – Responsibility capacity Education in sportive activity	**OP.2.1.** - To take the objectives set;
	OP.2.2. - To take responsibility to achieve its purpose.
GOB.3. – Education of proposed aim awareness capacity	**OP.2.3.** - To assume the tasks of training and competition.
	OP.3.1. - To acquire the intended purpose;
GOB.4. – Education of adjustment capacity, psychic states self-adjustment	**OP.3.2.** - To objectively evaluate the sportive training.
GOB.5. – The development of the self-evaluation capacity	**OP.4.1.** - To control the emotively level;
	OP.4.2. - To control the level of motivation and aspirations.
	OP.5.1. - To properly assess the current performance level;
	OP.5.2. - To properly assess the training results;
GOB.6. – Education of self-perfection and knowledge capacity	**OP.5.3.** - To properly analyze the performance from training and competition.
	OP.5.4. - To properly assess the technical execution from training and competition;
GOB.7. – Education of cooperation and communication capacity	**OP.6.1.** - To acquire knowledge of theory and methodology of training;
	OP.6.2. - To acquire knowledge of sport-related domains;
	OP.6.3. - To form the habit of always be informed.
	OP.7.1. - To learn communication techniques;
	OP.7.2. - To learn skills of cooperation.

The mental training objectives were achieved through the content of teaching strategies used for the training of the athlete. Content was structured teaching strategy and is expressed in the components:

- methods: conversation, autosuggestion, mental training
- Means: communication exercises, self-suggestion exercises, exposure of intrinsic and extrinsic reasons for success and failure/failure; reasons analysis.
- materials: training notebook, the target sheets, statistical tables
- forms of work organization: individual, focus group

Athlete's motivational level monitoring was carried out based on protocols of observation, in the training where it was emphasis the analysis of attitudinal sphere of sports, depending on the specific characteristics of psychological effort in decathlon. Assessing the scope of the athlete attitudinal scale was performed using descriptive scale, providing further opportunity to establish the psychological profile of the athlete.

The protocol observation A-content - Behavioral system specific to the event: availability for the effort, desire for progress, development cooperation, task orientation, self-objective, performance-oriented, discipline, fear of success / failure, availability for responsibility, self-confidence.

The observation protocol B-content - the attitude system of the sports to coach: trust, cooperation, communication.

Assessment - descriptive scale: 1, 2, 3, 4. ratings: FS, S, SUF, B, F.B., used for both protocols.

After applying the action strategy concerning the motivational level optimization, we see from the final results of the athletes that the items of instrumentality motivation have been improved: *the goals level, the trend of personal affirmation, fear of failure, management style adopted by coach*. From the results reported by coach on the athlete's motivation the following items were optimized: *the need, the desire to be the best, fear of failure, management style adopted by coach*. By improving these motivational items the GIM level has increased from 5.5. to 7.14 concerning the assessment of the coach to the athlete and from 5.21 to 7.92 for the evaluation of athletes.

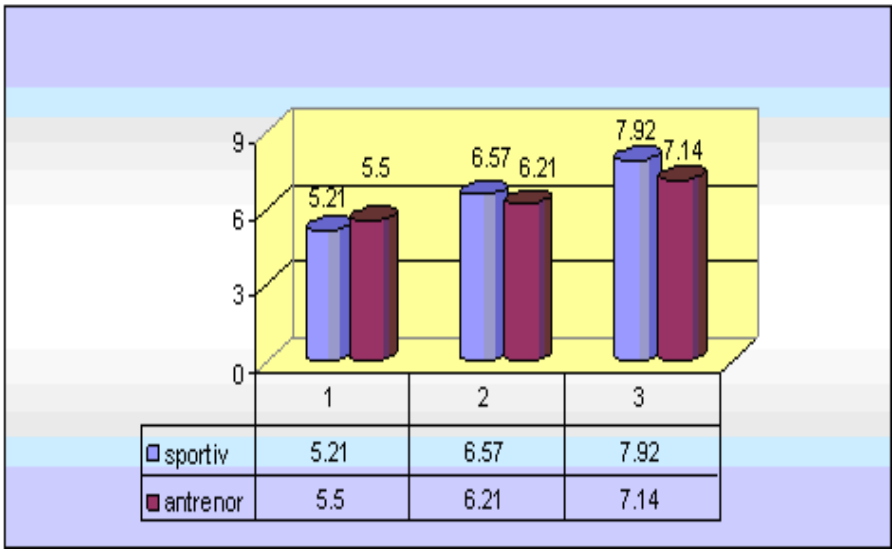

Chart 1. The evolution of the GMI at the end of the experimental approach

Conclusions

- From the research we found a higher level of MF comparing with the seniors standard (Table 3) with a low share of external motivation factors involved in the athlete's results, a general phenomenon highlighted in the formative stage of the senior athletes. This has created the opportunity for mental training focus on conservation and development of the intrinsic motivational factors and the optimization of those extrinsic, hypothesis confirmed by the upper level of the indicator at the end of research.
- Comparison of result obtained for motivation valence achieved at the standard of the seniors athletes we find that the athlete BB has a higher value for this parameter, post- research - action.
- The results obtained after the experimental intervention shows a specific attitude system classified as sufficient for the conducted activity. The action taken in order to optimize the motivational level had a favorable influence upon the athlete's attitude. At the end he recorded a very

good availability for effort, supported by the very high orientation of the subject to performance and very good reliability in the coach.

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PHYSICAL TRAINING- PLANNING AND EVALUATION

NEGREA VALENTIN[1], CAZAN FLORIN[1]

Abstract
The result is to anticipate, to foresee. To provide means to plan. Organization of practice is essential in sports. Organization of physical preparation is simpler than the technical-tactics that make more problems. Taking into account these remarks, we know from the beginning that it is useful to analyze the components of physical training as finally articulated them, to their programs and their predicted effects. Coaches must be guided by notions permanently "variations of work tasks, the general qualities transfer to the specific job. "What I try to develop, will find specific technical does this in handball?" We need an organic and functional programming resources of the athlete. Physical training plan period will be treated in each of these resources and will permanently change the training tasks. The difference between the sample and the athlete needs quantitatively determine the needs of specific work, performance objectives.
It is a matter of dosage between the amount awarded physical training during preparation, on the one hand and on the other during competitions.
Physical training intervention is to register with technical and tactical components contribute to the development of performance of the athlete, treating physical means necessary discipline, in what concerns us here-November handball. All sports equipment is dependent on these natural resources. Analysis is required prior to sports-related tasks handball before physical training to develop content. It is therefore important to be suitable to evaluate the athlete with the demands and more discipline in the post or in teams
Conclusions: It is important to plan for physical training during inter-season and the season, but is also important to rebalance, to shape and work load vary depending on the effects observed. On the other hand, the more effort is better in terms of quality, the more care should be taken to recover.
Game plan in the design and implementation, will be dependent on individual characteristics of players making up the team.It is therefore essential to evaluate potential players for his coaching in some ways that will contribute to sports performance: technical skills, tactical skills, mental skills, physical capabilities.
Keywords: physical training, evaluation, planning

Introduction

The result is to anticipate, to foresee. To provide means to plan. Organization of practice is essential in sports. Organization of physical preparation is simpler than the technical-tactics that make more problems.

Taking into account these remarks, we know from the beginning that it is useful to analyze the components of physical training as finally articulated them, to their programs and their predicted effects. Coaches must be guided by notions permanently "variations of work tasks, the general qualities transfer to the specific job. "What I try to develop, will find specific technical Does this in handball?" We need an organic and functional programming resources of the athlete. Physical training plan period will be treated in each of these resources and will permanently change the training tasks. The difference between the sample and the athlete needs quantitatively determine the needs of specific work, performance objectives (J. Weineck, 1997).

It is a matter of dosage between the amount awarded physical training during preparation (precompetitional) on the one hand and on the other during competitions.

Changes Of Training Tasks

Continued use of a load and a consistently

[1]Faculty of Physical Education and Sport, University Ovidius Constanta, ROMANIA
Email: negreavali@yahoo.com
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high workload, leading to supraantrenare. It is necessary to build a work program which provides a modulation between volume and training intensity

Guideline On Seasons And Cycles

It is necessary to give a main theme for physical training in a given unit of time. (Speed, strength, maximal aerobic power, etc.).

Use Indicators

Requirements require high performance coach to be increasingly closer look at the organization work. Is always necessary to anticipate. In this context, highlighting and will use indicators to assess the shape sport in its various expressions and helps making quick decisions. High-level performance management depends on the details (E.L. Fox, 1984).

"Eye" Coach is a subjective indicator, although often accurate, it must be combined with objective benchmarks: Cardiac recovery index, the explozivitatii, and speed are all accurate indications.

Annual Planning

Establishment involved in building planning are:
-week
-cycle-3 weeks
-block
-period

Week

"Week" organization is of course different depending on the cycles.
Here's an example of a weeks training period with orientation "force".

Example No. 1

monday	Tues day	wednesday	thursday	friday	saturday	Sunday
force	Jumping	force	speed	force	intermittent	Rest

Example No. 2
Weeks of training period with orientation speed

monday	Tuesday	wednesday	thursday	friday	saturday	sunday
speed	jumping	force	speed (rhythmicity)	force	intermittent. 10"\10"	rest

Example No. 3
Week oriented on intermittent effort

monday	Tuesday	wednesday	thursday	friday	saturday	sunday
force	intermit. 10"\10"	jumping	intermit 10"\10"	force	intermit. 10"/10" speed	rest

Example No. 4
Week of competitive period

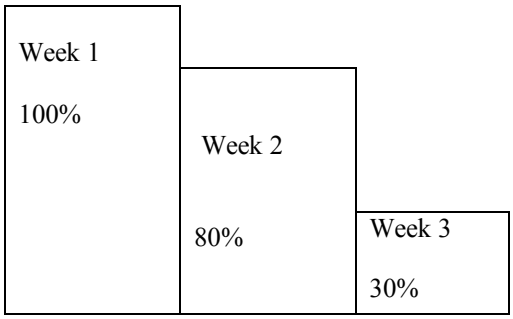
monday	Tuesday	wednesday	thursday	friday	saturday	sunday
intermit.	max. force		force	Speed	game	rest

In this case, should we consider that the major objective is the match on Saturday.

Account must therefore keep a few principles:
- Do not start the program never force during the tournament, without previous training. The results will be negative.
- To have no negative effect on the match on Saturday, sessions will be introduced lower power intensity over the previous period where we had no official matches.
- Preparation of an important match is always decreasing the amount of work that week (compared to the previous one), but he did reduce the intensity.
- Enter recovery sessions.

Cycle

The notion of "cycle" is an essential part for individual sports (eg athletics) but it must obviously adopted collective sports. Ideal duration of the cycle is 3 weeks for subjects explosive force.
The drawing below illustrates the profile of 3 weeks



Profile of individual disciplines working cycle:
Dominant components are: - FORCE

	week1	week2	week3
DOMINANT	FORCE	SPEED	MAX. AEROBIC POWER

"Cycle to 3 weeks"

Block

For individual subjects we found that the work force, for it to be consistent and useful, must last at least 6 weeks or 2 cycles.

We speak so in this case the notion of "block". This action brought by "Verceshanschi"

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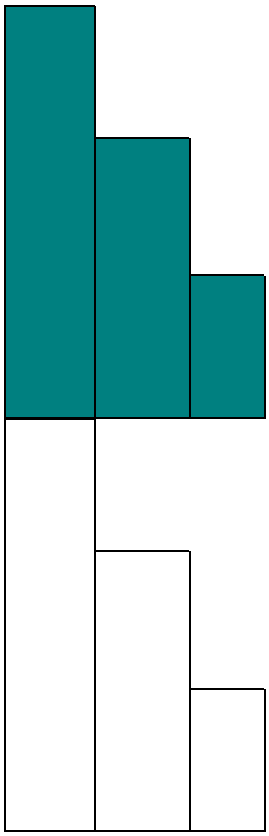
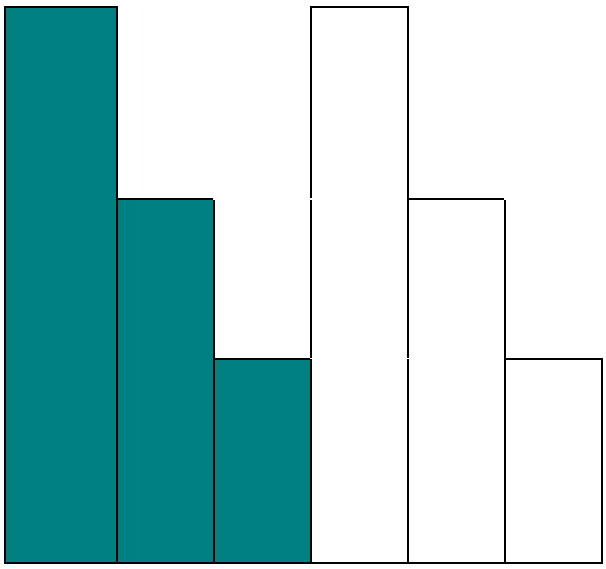
consists in the emphasis on the physical qualities for a longer time period (2 cycles).





CYCLE NO 1 CYCLE NO 2

Block Of Force

This organization "in block" is possible in handball during the months from May to June. (After the end of the season).

Period

Period consists of several cycles or blocks. Hockey season may be divided into 3.4 or 5 times.

-period 1: 4-5 weeks (late May-late June)

- 2 time: 6-8 weeks (end of July to debut in September)

-period 3: the championship round matches

- 4 time: 4-5 weeks (January)

- The 5: return matches.

Example of annual planning in handball

Example will be given is that of a male team growing up Division 1.

Period 1

WEEK 1	WEEK2	WEEK3	WEEK4	WEEK5
29 may- 3 jun	5 jun-10 jun	13 jun-17 jun	19 jun-24jun	26 jun-1 jul
REST	1-track 3-musc.	1- track 3 musc.	1-track 3-musc.	REST
TESTS				

Load and volume of work during this period was scheduled to increase progressively:

-80% In week 2

-90% In week 3

-100% In week 4

Orientation for this course is to develop explosive force and strength.

Period 2

This training period consists of 2 cycles every 3 weeks preceded by 1 week quarters.

- Cantonment of week 11: altitude-aerobic work (climbing on the mountains, bike), work for speed, jumping etc ..
- No cycle 1 (week 12, 13.14): strength and explosive power
- Cantonment of seven 15: Technical and tactical explosive force
- No cycle 2 (week 16, 17, 18): technique and speed.

PERIOD 3.

W1	W2	W3	W4	W5	W6	W7	W8
explosive force	speed	force	speed	explosive force	Aerobic	force	speed

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This period covers the games in the championship round.
Weekly rate is focused on technical and tactical, requiring a careful modeling of physical work. Recovery is also a fundamental aspect and especially the kind of recovery that does not necessarily mean passive rest.
The odd weeks (example here) load was reduced, so that they match matches go.

Perioada 4

w1	w2	w3	w4	w5
aerobic force	aerobic force 1 game	explosive force	Speed pma 3 games	Speed pma 2 games

This period generally lasts 5 weeks. We will consider as a new phase of training.
In the example above, the period is composed of 3 cycles:
- Cycle 1: W1 and W2-oriented strength and aerobic work
- Cycle 2: W3 orientation explosive force
- Cycle 3: W4 and W5-orientation: the speed and PMA

Period 5

Cover compionatului return matches.
The construction is like the period 3

Conclusions

It is important to plan for physical training during inter-season and the season, but is also important to rebalance, to shape and work load vary depending on the effects observed. On the other hand, the more effort is better in terms of quality, the more care should be taken to recover.

Physical training intervention is to register with technical and tactical components contribute to the development of performance of the athlete, treating physical means necessary discipline, in what concerns us here-November handball. All sports equipment is dependent on these natural resources. Analysis is required prior to sports-related tasks handball before physical training to develop content. It is therefore important to be suitable to evaluate the athlete with the demands and more discipline in the post or in a team (at work for such detention, which measures a player 2 m and evolve as a pivot does not need the same program as and a wing player).

To summarize, I will say now that the content of physical training (working on muscle strengthening, aerobic, speed, etc..) Has meaning only to the extent that specific requirements activity (in this case handball).

Evaluation

Game plan in the design and implementation, will be dependent on individual characteristics of players making up the team.

It is therefore essential to evaluate potential players for his coaching in some ways that will contribute to sports performance:
• technical skills
• tactical capabilities
• mental
• physical capabilities

We will consider here strategies for assessment of physical potential. We found that we are interested in 2 areas in particular for handball.
-explosive qualities of the players, technical support necessary for its expression
-ability to recover quickly after maximum effort, allowing the player to repeat his gestures during the match for all completing the daily tasks of training and competition but the whole season without having a significant drop in potential (M. Pradet, 1989).

Explosivity

Explosivity in handball gesture translates into speed, the detention and the maximum force, so the force is likely to be mobilized and used in a very short time in a specific gesture (neutralization striker, 1 against 1, etc.). This relationship between speed and power makes us think the notion of power (G. Cometti, 1988).

Speed

-Timed time on: 5m/10m/20m/30m/4x5m
-for an accurate assessment is recommended to use photocells,
-index for 5m, 10m and 4x5m are the most significant activity for handball. They show the ability of start-up speed of the player.

Detention

-Measure:
• CMJ (countre movement jump)
• reactivity (6 jumping about on 2 legs)
• Jump on 2 feet with knees bent
(First 2 tests are performed with a Bosco platform)

Maximum force

Measure weight amounts to:
-pushed lying
-semigenuflexiuni
-pulled from the neck
-Tests are performed with a simple Olympic bar. On the contrary expressed in watts power tests we can achieve only with specific devices. Not having this evaluation, it is recommended to work in the gym.

Analysis Of Tests

The tests can only be justified to the extent that they are interpreted, analyzed and the results of these reflections are reinvested in training strategies. On the other hand is imperative that the player to know the total analysis and engage in individualized training program, without which there can be no progress.
Player A-Performing as wing:We know tha:t is very good at speed on 10m, 20m and power. Speed is

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lower at 4x5m. This deficiency is found in relationship 1 against 1. It is therefore necessary to work on foot power.

Player B-Performing as a left back :The speed of the 10m is good for his height. On the contrary his power and detention are poor. Work is required for the legs followed by pliometric exercises.

Field Cardio-Pulmonary

What is relevant evidence that the coach needs to establish a training strategy in the aerobic field ?

> Maximal heart rate
> Heart rate at rest
> Recovery after 3min and after 5min
> Index of recovery
> Aerobic speed track
> Hall aerobic speed (shuttle)

These indicators may be collected starting from some tests done on-site "very powerful and relatively easy to do so.

De BRUE test
LUC LEGER test track
LUC LEGER test "commute" in the hall on 20m.
1.De BRUE test
Is done on the track. The players run behind a bike that has a speed race prestabilita.Viteza departure is 8km / h. The speed increases to 0.3 km / h every minute. When player can not stop it from cycling. Speed bicycle at the time is the maximal aerobic speed (VAM) of that player.

2.LUC LEGER TEST track
Back on track, place landmarks every 50m around the track. The player must pass through the right of each milestone while hear a "beep" recorded on a tape. Every minute speed increases. The end result is the same as BRUE test.

3.TEST LUC LEGER, on 20m
Are made in the room. Players run "go-Fri-one" over a distance of 20m (handball in width). Running speed is given by the "BIP's" recorded on a tape. Speed increases on a regular basis every minute. When players can not stop following cadence. Last landing or is detained as a result. Convert the result gives us the maximal aerobic speed .
Notice: this result is less than that achieved on the track with 2-3km/h.Deci VAM Hall of less than 2-3km / h than V.A.M. track.

Operation test BRUE

V.A.M. made the player is 18km / h. Maximal heart rate (1) is 204 pulse / min. Heart rate is 149 after 1min pulse / min (2). Heart rate is 116 after 3min pulse / min. Heart rate after 5min is l00puls/min.
Technical index-recovery (ITR) = 1-2 or 205 p / m - 149 p / m = 56 pulse (ITR)
-difference between maximal heart rate and frecv.card after 1min after the demise effort is ITR
NOTE: in a handball I.T.R. higher than 40 pulse / min is relatively satisfactory.
Evaluation starting from an runs test in the gym with 30/30 (30"run, 30"walk)
Player A has made 2 sets of 12 reps each room on 30/30 in 20m distance. Intensity was 105% of V.A.M. or 132m (track).
Adapting to a very good effort =
ITR = very good recovery after 1 min = 78 pulse / min.
Recovery after 3min = very good = 82 pulse / min.
Conclusion: excellent index. They allow us to modify the working time (eg 10/20) to cause new adaptations closer to handball.
Player B has made 2 sets of 12 repetitions, 30/30 in room ply 20m. Intensity was 105% of V.A.M. or 130m. Adaptation to effort = very poor.
ITR = very low = 32puls/min.
Recovery after 3min = low, pulse was 119 beats.

Conclusions

He must continue training to obtain the best indicators of recovery. For the analysis to be complete players will perform tests wearing a sport tester device arctic example. Heart of the end of the test curve is transferred to a computer that will give us indices and higher.

Frequency of use of tests: explosivity evaluation tests and the assessment that cardiac capacity is used:
-the end of the season before achieving planning training in June,
-to start preparations in August.

Further during the season depending on different policy players whom they are addressed tests. Testing if young players Training Center will be the same as those of a professional team. These young players are in full development and training and testing necessary call.

Tests are more restricted:

For explosivity we used regularly during the season in the 10m test that is simple to perform and easily integrates into the process of training.
On the contrary force we will do regular tests on maximum force.

For the aerobic players are regularly equipped with Sport-Tester during training sessions short distances and curves are also analyzed heart and allow us to check if players do not have problem of recovery.

At the level of professional teams, these tests are carried out in a moment of respite in January to see if general indication of the group have declined. Individual assessment can be made and if a player who was injured will now make a program designed to return to the place team.

ITR-The difference between the number of

heart beats recorded at the end of a maximal aerobic effort and the number of beats recorded 1 min after the termination of an effort. ITR's can be recorded in passive or active recovery.

Example:
At the end of effort = 199 pulse / min
1 min after cessation of effort = 149 pulse / min
ITR = 50. In handball admit that an ITR higher than 40 pulse / min is satisfactory.

PMA-The power to make one thing during a joined effort with an energy expenditure equal to maximal oxygen consumption (VO2 max).

VMA-maximal aerobic speed, speed of travel for which the oxygen is fully applied.

VO2 max- The maximum amount of oxygen that a person consuming it in unit time during an exercise intensely enough for the lead to exhaustion and that put into action an important muscle. It is expressed in liters per minute (L / min) or milliliters per minute and per kg of body weight (ml / min / kg).

BOSCO platform is a platform equipped with receivers connected to a clock / time on which player to jump (air) is measured and converted to cm. So get a jump measured in inches.

Squat Jump: is series of steps as tall, with hands on hips held, starting with knees bent at 90 degrees. This leap so as to start starting from the stand quality.

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METHODOLOGY OF PHYSICAL TRAINING ON DEVELOPMENT SIXTH GRADERS THROUGH SPECIFIC ATHLETICS MEANS

PARASCHIȚA FLORINA[1]

Abstract
The research followed the use of specific exercises, running, jumping and throwing in physical education lesson to students of grade VI to improve their physical training. Were made and applied the system of lessons during a school semester.
The purpose of the current work is to establish the most efficient methods and exercises structures in order to increase the motor qualities development process of 12-13 years old children, throughout physical education lesson.
Used methods of research: *Method of Bibliographic Study, Method of Observation, Experimental Method, Method of Testing, Statistical-mathematical method.* Used test of the research: 50 m speed running, long jump from place, force abdominal and back strength, running endurance of 600 m girls and 800 m boys.
Conclusions. The level of performance achieved, homogeneity of groups, shows that both means and various specific athletics methods influenced the development of motor qualities in physical education school.
Key words: running, repeat, motor qualities

Introduction

Naturalness and affordability of athletic drill, the utility of its processes, explains their great presence in the physical education programs. Athletics contribute, alongside other means of physical education in school, to general physical preparation of students. Naturalness and accessible athletic exercises, the utility of its processes, explains their great presence in physical education programs. Running under its various aspects, jumping in their various forms and throwing objects are exercising enjoyable, attractive and useful at school age (D. Gârleanu, 1996).

Athletic means has the advantage that it can be done with a minimum of material conditions, throughout the school year, all season. This explains the large share and continuity in curricula, their resume every year, to other parameters values. Athletics is considered one of the principal means of school physical education with maximum efficiency in achieving the educational objectives.

Adaptation of athletics exercises to particular age and gender of students, the precision with which to determine and measure the accuracy and quality of effort required are arguments for u

sing athletics as a means of training in

[1]FFES - Ecological University from Bucharest, ROMANIA
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school physical education or sports training, as a means of maintaining status health (C. Albu, 1981).

The physical preparation of students, motor quality development continues to be a secondary aspect concerns a large number of specialists. Although acting primarily on the formation and strengthening of basic motor skills or industry-specific sport, their value is still low due to the very weak development of motor qualities. To improve students 'physical training are recommended exercises form "school athletics": running school, jump school and throwing school (F. Neder, 2008).

The purpose of the current work is to establish the most efficient methods and exercises structures in order to increase the motor qualities development process of 12-13 years old children, throughout physical education lesson.

The following **hypothesis** was the basis for the draw up of this work: It is assumed that the motor qualities development at 6th grade is due with high efficiency if we use means and exercises structures as well adequate possible to age's particularities.

In this work we established a series of **tasks**, as follows:

- The study of the bibliographic materials;
- To discover the most efficiency methods and means to develop motor qualities at 6th grade students.
- Check up the efficiency of means and work methods by testing the students.

Used methods of research: *Method of Bibliographic Study, Method of Observation, Experimental Method, Method of Testing, Statistical-mathematical method.* Used test of the research: 50 m speed running, long jump from place, force abdominal and back strength, running endurance of 600 m girls and 800 m boys.

The research took place between March 15th and May 15th 2009 at No. 196 Secondary School from Bucharest. The experiment was made with two 6th grade students, divided in 30 students for experimental group and 30 for control group.

After applying the work program during the second semester of 2008-2009 academic years at the end of the experiment events control were passed again as the final test.

The results obtained were recorded separately for each group separately for each sex were centralized, processed and interpreted as evolution from initial to final testing, allowing conclusions on the effectiveness of separation of means and methods used, by comparison

Research results (Table no 1-4). Comparative analysis between groups (Figures no 1-10)

The results were recorded separately for each group and were centralized, processed and interpreted, allowing some conclusions on the effectiveness of methods and means used.

In the final moment of research the boys obtained the following results:

In 50 m Speed (Fig. no. 1) running the control group progress was on the 0.06-tenths (8"79 - 8"73), while the experimental group has a mean improvement of 1.13 tenths (8"67 - 8"54).

Growth media to test experimental group long jump from place is 4 cm (1.71-1.75 m) and the control group of 1 cm (1,72 m - 1,73 m), so finds a growing percentage upper experimental group compared to the control of 30% (Fig. no 2.).

For abdominal force testing, the average growth of 4 repetitions experimental group and the control group of 2 repetitions, 10% of the experimental group was higher than the control (Fig. No. 3).

Average growth recorded in testing back strength is 4 repetitions for the experimental group and 2 repetitions for the control group, being recorded the same 10% favorable progress of the experimental group (Fig. No. 4).

Endurance at running the 800 m (Fig. no. 5) experimental group got an average growth rate of 60% higher than the control group. Increasing values mean experimental group is 8 seconds (3'34"-"3'26) and the control group 2 sec (3'30"-3'28").

In the final moment of research the girls obtained the following results:

50 m Speed running per experimental group had a final average increase of 1.16 tenths (8"86 - 8"70), while the control group only one-tenth (8"91 - 8"81) (Fig. no. 6).

To test the long jump from place (Fig. no. 7) increasing the average experimental group is 4 cm (1.63-1.67 m) and control group 3 cm (1.63-1.66 m).

Abdominal force testing of both experimental and the control group had the same increase of 2 repetitions in the final moment to experiment (Fig. no. 8).

Growth media to test the experimental group achieved back strength (Fig. no. 9) is 1.3 repetitions (25.87-27.00) and the control group of 0.5 repetitions (26.50-27.00).

Significant increase in the final average was recorded in the 600 meters race of endurance (Fig. no. 10), where the experimental group has a performance improvement of 10 seconds (3'10-3'00), while control group only 2 seconds (3'07 -3 '05). Percentage growth of the experimental group is 80% compared to the control.

Conclusions

1. By implementing programs to develop specific motor qualities using effective methods and means, as they grow, with great ease in the physical education lesson.
2. The principal means found in the experiment as a high efficiency line of endurance capacity development at this age, are: long running, in uniform tempo and solving the tasks on the route, long running

varied in tempo; continues relays on short and medium distances, routes applied (in the form of race), focusing on endurance movement games, sports games, running "like fartlek".

3. Strength quality can successfully develop through various jumps and exercises performed with weight (lifting knees to espalier the stand hanging, lifting of lying dorsal trunk, "baskets", raising the torso from a lying facial genuflexion etc.).
4. Specific exercises to develop the motor qualities can be applied taking into account the peculiarities of age. To do this, knowing the group of students is a necessity that what he proposes to complete an experiment, it is realized by applying the initial and final tests that are obtained information on the state of somatic, functional and motor development.

Table no. 1 The results achieved by experimental group of boys in the two times tested

No.	Indicators	50 m speed running		Long jump from place		Abdominal force		Back strength		800 meters	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1	Arithmetical means	8”67	8”54	1.71	1.75	26	30	26	30	3:34	3:26
2	Standard deviation	0,42	0,35	0,12	0,11	3,26	2,80	3,05	2,45	0,23	0,20
3	Coefficient of variability	4,78	4,05	6,85	6,22	13,08	10,00	11,29	8,12	6,4	6,2

Table no. 2 The results achieved by control group of boys in the two times tested

No.	Indicators	50 m speed running		Long jump from place		Abdominal force		Back strength		800 meters	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1	Arithmetical means	8”79	8”73	1.72	1.73	27	29	27	29	3:30	3:28
2	Standard deviation	0,28	0,26	0,12	0,10	2,04	1,94	2,27	2,46	0,07	0,08
3	Coefficient of variability	3,29	3,03	6,84	6,06	7,80	6,93	8,10	8,19	17,3	14,7

Table no. 3. The results achieved by experimental group of girls in the two times tested

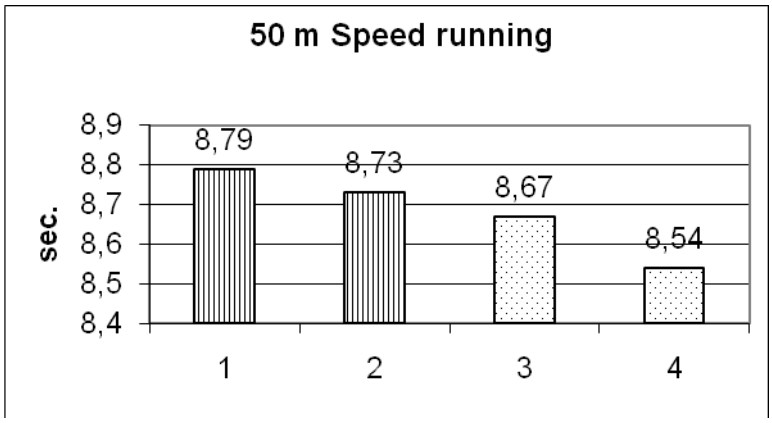
No.	Indicators	50 m speed running		Long jump from place		Abdominal force		Back strength		600 meters	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1	Arithmetical means	8”86	8”70	1.63	1.67	24	26	25.87	27	3:10	3:00
2	Standard deviation	0,34	0,30	0,08	0,06	3,12	2,31	3,42	2,80	0,09	0,12
3	Coefficient of variability	3,83	3,39	4,60	3,73	12,58	8,74	13,22	9,38	5,7	1,30

Table no. 4. The results achieved by control group of girls in the two times tested

No.	Indicators	50 m speed running		Long jump from place		Abdominal force		Back strength		600 meters	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1	Arithmetical means	8”91	8”81	1.63	1.66	22	24	26.5	27	3:07	3:05
2	Standard	0,20	0,17	0,07	0,06	3,34	3,61	2,88	2,41	0,06	0,07

	deviation										
3	Coefficient of variability	2,24	1,88	4,25	3,38	14,85	15,02	10,85	8,94	1,08	1,35

Fig no. 1



1 – Initial test for control group
2 – Final test for control group
3 – Initial test for experimental group
4 – Final test for experimental group

Fig no. 2

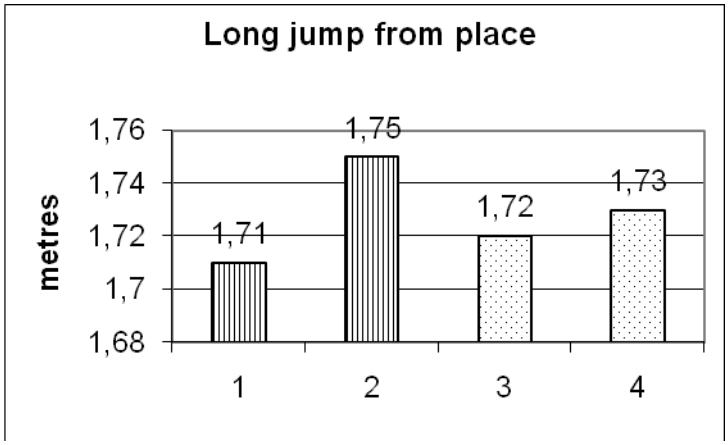


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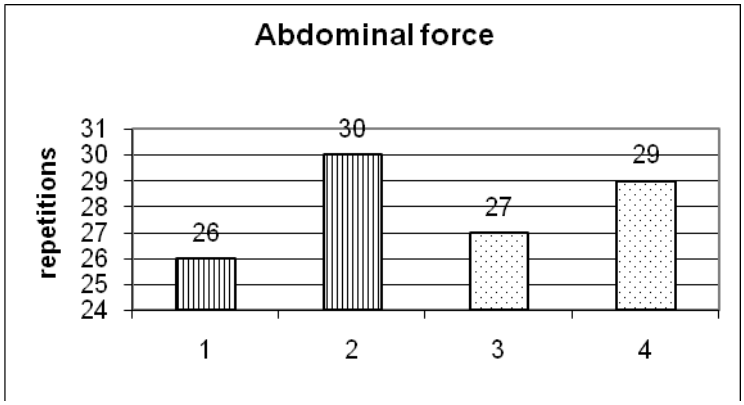
Fig. No. 3



1 - Initial test for experimental group

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2 – Final test for experimental group
3 – Initial test for control group
4 – Final test for control group

Fig. No. 4

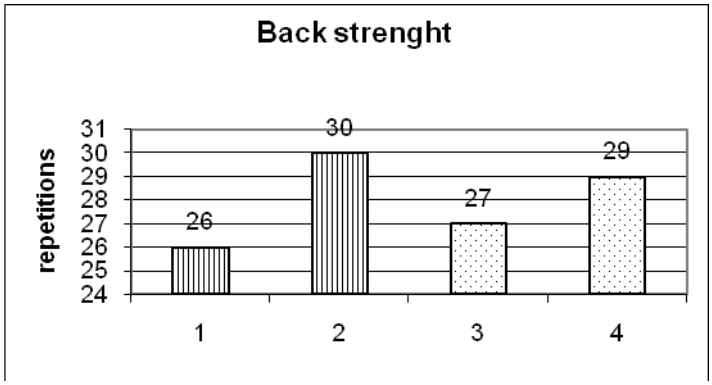

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Fig. No. 5

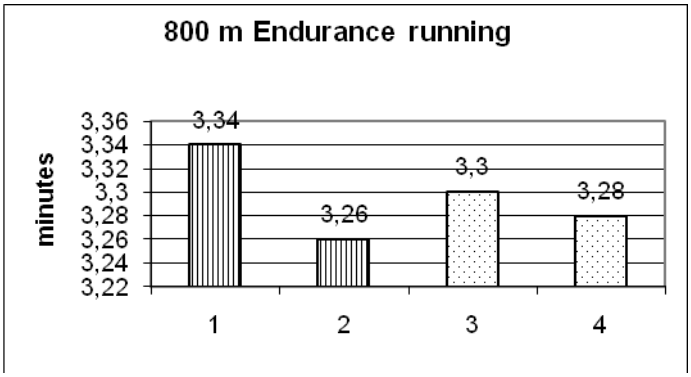

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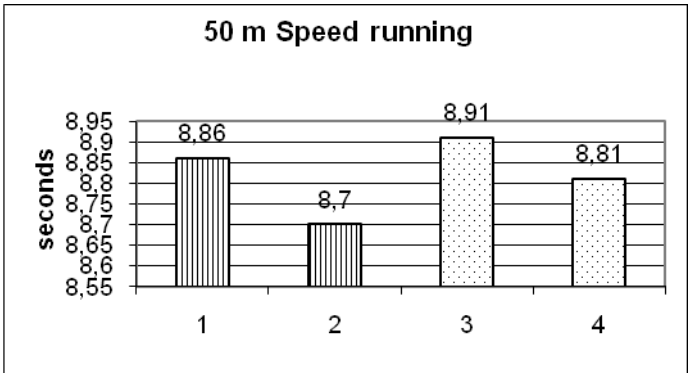
Fig. no. 6



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4 – Final test for control group

Fig. no. 7

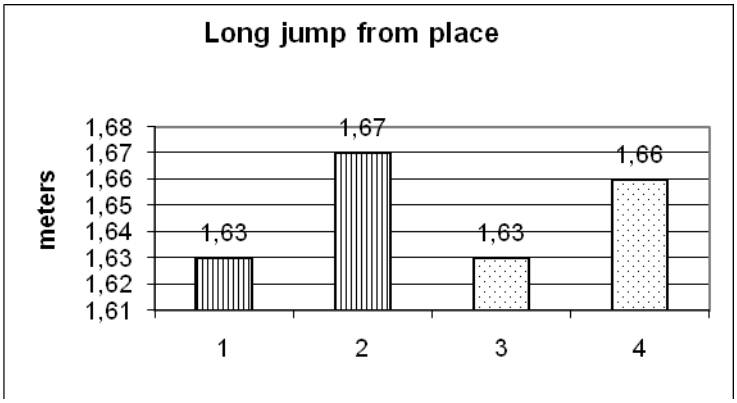

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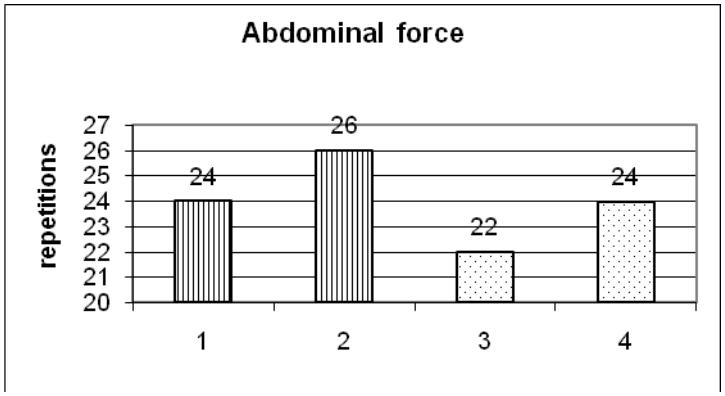
Fig. no. 8



1 - Initial test for experimental group
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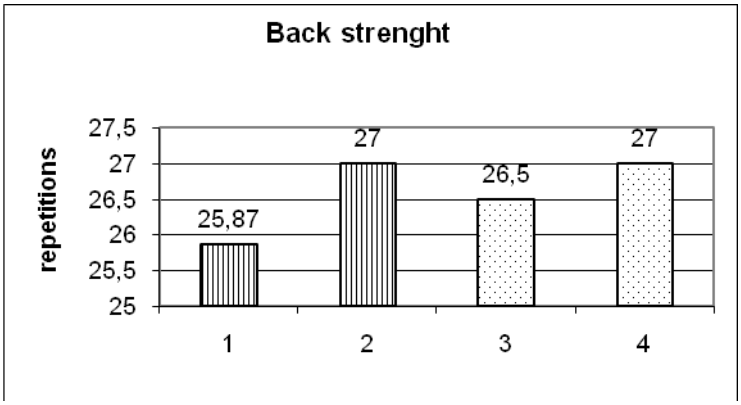
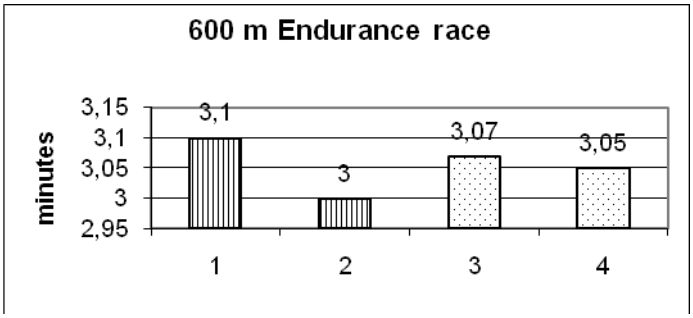
3 – Initial test for control group
4 – Final test for control group

Fig. no. 9



1 - Initial test for experimental group
2 – Final test for experimental group
3 – Initial test for control group
4 – Final test for control group

Fig. no. 10



1 - Initial test for experimental group
2 – Final test for experimental group
3 – Initial test for control group
4 – Final test for control group

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THE EVALUATION OF PHYSICAL AND MOTORIC CHARACTERISTICS OF YOUNG SWIMMING ATHLETES

POLAT METIN[1], COKSEVIM BEKIR[2], GUNAY ERKAN[3], DASDEMIR TUGBA[4]

Abstract
Purpose: The aim of this study was to evaluate the effect of national programs which is planned policies for swimming that important contribution on train for champion athletes in our nation and the effect of these programs on physical and motor characteristics of volunteers who participated in our study.
Methods and Procedures: Seventy-two volunteers including 36 boys and 36 girls which is between the ages of 8 and 12 attended in the research. The volunteers were divided into 3 groups as the elite group, developing group and the control group. Control group volunteers were primary school students who nonparticipating physical education lessons and nonattendance in any sports activity during research. As pre and post test, physical characteristics which age, height, weight, body mass index (BMI), body fat percentage, and motor characteristics which are flexibility, hand grips, sit-up test, four min. swimming, 25 m sprint swimming were measured of volunteers groups who participated in the study. It was carried out that five times a week training which 80 % swimming and 20 % dryland to elite and developing groups during the 24 weeks. It was performed that four times endurance and one time sprint training of carried out five times a week training.
Statistical analysis was carried out using Wilcoxon Rank Test for determine the significance of the difference pre and post tests within-groups. Also, Mann-Whitney U Test carried out for determine the significance of the differences among intergroups. The significance level was determined as $p<0,05$
Results: When within-group and intergroup test results were compared, significant decrease were found in the BFP, BKI and significant decrease in the height, hand grips, flexibility, sit-up test, four min. swimming test, 25m swimming test results in favor of the elite group ($p<0,05$).
Conclusions: As a result of training, decrease of body fat percentage, BMI, and increased of both height, hand grips, flexibility, sit-up test, four min. swimming test, 25 m swimming scores and increased of athletic performance was observed. The reasons of these results are related to each other motor functions and athletic performance. Although it was carried out to same training programme to all volunteer athletes, significant differences were observed in the physical characteristics and motor functions in favor of the elite group. We thought that the reasons of these results were gained psychomotor fundamentals, long sport age and probably genetic factors of elite athletes to affect on the both anthropometric parameters and motor functions. It has been thought that these factors get improve athletic skills of elite athletes.

[1]Nigde University Physical Education and Athletics Collage, Nigde/TÜRKIYE
[2] Erciyes University Physical Education and Athletics Collage, Kayseri/TÜRKIYE
[3] Dokuz Eylul University School of Sport Sciences and Technology, Izmir/TÜRKIYE
[4] Abant Izzet Baysal University Physical Education and Athletics Collage, Bolu/TÜRKIYE
E-mail: polat.metin@gmail.com
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Key words: young swimmers, motoric functions, anthropometric parameters.

Introduction

A lack of physical activity has been implicated as a risk factor for the development of overweight and following unhealthy life, and increases in children's physical activity and sport participation have been advocated to prevent or reduce childhood overweight and following unhealthy life. In addition, physical activity has been associated with positive health outcomes among children and adolescents (K.K. Davison, M.B. Earnest, L.L. Birch, 2002).

It is accepted that increased physical activity and musculoskeletal stress are important for promoting growth in children (K.T. Borer, 1995). Moreover, children's involvement in sport training might provide particular long-term health benefits (T.W. Rowland, 2005). Swimming contributes to the development of healthy posture and biomotoric functions of children. (J.M. Stager, D.A. Tanner, 2005)

In terms of competition, it is observed that the started of the training at a young age for be able to train champion athletes in many sports. Many countries implements planned training programs for both healthy development and train champion athletes. For these purpose children are canalized to swimming and they receive regular training in our country.

The aim of this study was to evaluate the effect of national programs which planned policies for swimming that important contribution on train for champion athletes in our nation and the effect of these programs on physical and motor characteristics of volunteers who participated in our study.

Material and method

Seventy-two volunteers including 36 boys and 36 girls which is between the ages of 8 and 12 attended in the research. The volunteers were divided into 3 groups as the elite group, developing group and the control group. Elite group was composed to 12 boys volunteers who mean age of 10,3 ± 1,8 years and 12 girls volunteers who 10,2 ± 1,3 years, developing group was composed to 12 boys volunteers who mean age of 9,7 ± 1,3 years and 12 girls volunteers who 9,3 ± 0,8 years, control group was composed to 12 boys volunteers who mean age of 9,7 ± 1,3 years and 12 girls volunteers who 9,3 ± 0,8 years and all control group volunteers were primary school students who nonparticipating physical education lessons and nonattendance in any sports activity during research. It was carried out that five times a week training which 80 % swimming and 20 % dryland to elite and developing groups during the 24 weeks. It was performed that four times endurance and one time sprint training of carried out five times a week training. All measurements were taken twice as pre and post test.

Height and body weight of volunteers were measured using the Tanita Body Composition Analyzer (Type TBF-410 MA, JAPAN) brand device. Body Mass Index of volunteers was calculated by body weight (kg) / height² (m²) formula (W. R. Thompson, N. F. Gordon, L. S. Pescatello, 2009)

Body Fat Percentage: Skinfold thickness was measured at the right side of the body at the biceps, triceps, subscapular, and suprailiac sites using Holtain skinfold kaliper. Skinfold thickness was taken three times at each body site and the average was recorded. Body fat percentage was calculated using Durnin-Womersley formula (G.B. Dwyer, S.E. Davis, 2008).

Flexibility: Sit-reach test was performed for the measurement of flexibility. For the sit-and-reach test, a yardstick was placed on the floor and tape was placed across it at a right angle to the 38 cm mark. The volunteers sat with the yardstick between the legs, with legs extended at right angles to the taped line on the floor. Heels of the feet touched the edge of the taped line and were about 25 cm to 30 cm apart. The volunteers reached forward with both hands as far as possible, holding this position ~2 seconds. The most distant point reached with the fingertips was recorded. The better of two trials was recorded (W. R. Thompson, N. F. Gordon, L. S. Pescatello, 2009).

Hand Grips Strength: Right and left hand grips were measured using Grip Strength Dynamometer T.K.K. 5101 Grip-D. The volunteers were standing for the test. The volunteers held the handgrip dynamometer parallel to the side of the body at about waist level. The forearm was held level with the thigh. The volunteers then squeezed the hand grip dynamometer as hard as possible. The better of two trials was recorded in kilograms (G.B. Dwyer, S.E. Davis, 2008).

30 sec. Sit-up Test: Sit-up test was conducted by counting the maximum number of sit-ups achievable in 30 s. In the test, the shoulders were touching the mat in the lying position and elbows were touching the flexed knees in the sitting position (A. Heinonen, et al., 2000).

Four min. Swimming Test: Before the test implementation, the volunteer athletes were warmed up out of the swimming pool and were swum 200m with crawl technique in the swimming pool. The athletes swam with crawl technic during 4 minute continuously. The athletes swum in groups in the form of six people. When the time was over, the athletes were stopped with metal apparatus underwater and by whistling out of water. The test was performed one time.

25 m Sprint Swimming Test: The test was performed in the 25m swimming pool. Before the test implementation, the athletes were warmed up out of the swimming pool and were swum 200m

with crawl technique in the swimming pool. The athletes were given the start signal from inside the swimming pool and were swum the distance with crawl technique. When the athletes pushed the wall of the pool, the time was started and the time was stopped when they touched the front wall. The measurement was taken two times and the better time was recorded.

Statistical Analysis: Statistical analysis was carried out using Wilcoxon Rank Test for determine the significance of the difference pre and post tests within-groups. Also, Mann-Whitney U Test carried out for determine the significance of the differences among intergroups. The significance level was determined as p<0,05

Results

The comparisons of the test results among intergroup weren't shown in tables. According to these comparisons, when the pre-test results were compared between boys elite and developing groups, statistical significant were found in the four min. swimming test, right hand grip strenght, sit-up test and 25m sprint swimming test results in favor of the elite group (p<0,05), when the post-test results were compared, statistical significant was found also in the left hand grip results in addition to these findings in favor of the elite group (p<0,05). When the girls elite and developing groups pre-test results were compared, statistical significant were observed in the weight, sit-up test, four min. swimming test, 25m sprint swimming test results in favor of the elite group (p<0,05), when the post-test results were compared statistical significant was found also in the BMI results in addition to these findings in favor of the elite group (p<0,05). When the boys elite and control groups pre-test results were compared, statistical significant were found in the BMI, body fat percentage, flexibility, right hand grip, and sit-up test results in favor of the elite group (p<0,05), when the post-test results were compared statistical significant was found also in the left hand grip results in addition to these findings in favor of the elite group (p<0,05). When the girls elite and control groups pre-test results were compared, statistical significant were observed in the height, BMI, body fat percentage, flexibility, right and left hand grips, sit-up test results in favor of the elite group (p<0,05), when the post-test results were compared statistical significant were found same results in favor of the elite group (p<0,05). When the boys developing and control groups pre-test results were compared, statistical significant were found in the BMI, body fat percentage, and sit-up test results in favor of the developing group (p<0,05), when the post-test results were compared statistical significant were found same results in favor of the developing group (p<0,05). When the girls developing and control groups pre-test results were compared, statistical significant were observed in the weight, BMI, body fat percentage, sit-up test results in favor of the developing group (p<0,05), when the post-test results were compared statistical significant was found also in the height and flexibility results in addition to these findings in favor of the developing group (p<0,05).

Table 1. The Comparison of Pre-test and Post-test Values of the Elite Groups

			BOYS			GIRLS			
Parameters	**n**	**Tests**	**Mean ± SD**	**z**	**p**	**N**	**Mean ± SD**	**z**	**p**
Age (year)	12	Pre test	10,33 ± 1,86	0,000	1	12	10,46 ± 1,33	-,356	0,722
	12	Post test	10,33 ± 1,86			12	10,25 ± 1,42		
Height (cm)	12	Pre test	145,5 ± 20,57	-1,761	0,078	12	143,23 ± 11,86	-,764	0,445
	12	Post test	148 ± 19,86			12	144,66 ± 10,84		
Weight (kg)	12	Pre test	36,36 ± 13,15	-1,36	0,173	12	34,53 ± 9,26	-1,020	0,308
	12	Post test	37,83 ± 12,31			12	35,50 ± 9,29		
BMI (kg/m²)	12	Pre test	1,32 ± 0,06	-1,153	0,249	12	4,31 ± 0,71	-,941	0,347
	12	Post test	1,31 ± 0,05			12	4,22 ± 0,64		
Body Fat Percentage(%)	12	Pre test	13,68 ± 4,74	-2,201	**0,028***	12	15,62 ± 3,97	-,746	0,456
	12	Post test	11,61 ± 3,73			12	15,19 ± 4,41		
Four min. Swimming(m)	12	Pre test	254,33 ± 23,88	-2,207	**0,027***	12	267,84 ± 17,79	-3,062	**0,002***
	12	Post test	289,33 ± 7,52			12	292,66 ± 6,42		
Flexibility (cm)	12	Pre test	23,08 ± 3,24	-2,032	**0,042***	12	27,30 ± 4,74	-,059	0,953
	12	Post test	24 ± 3,16			12	27,83 ± 3,24		
Right Hand Grip (kg)	12	Pre test	19,51 ± 7,04	-2,201	**0,028***	12	17 ± 4,68	-,235	0,814
	12	Post test	21,48 ± 8,50			12	16,0 1 ± 4,05		
Left Hand Grip (kg)	12	Pre test	18,7 ± 8,09	-2,201	**0,028***	12	16,96 ± 5,68	-,314	0,754
	12	Post test	20,58 ± 8,58			12	14,95 ± 4,62		
25m Sprint Swimming (sec)	12	Pre test	19,97 ± 0,84	-2,201	**0,028***	12	19,04 ± 1,15	-3,061	**0,002***
	12	Post test	17,58 ± 0,83			12	17,35 ± 0,62		
30 sec Sit-up (scor)	12	Pre test	24,33 ± 3,72	-2,226	**0,026***	12	23,76 ± 3,24	-2,627	**0,009***
	12	Post test	31,16 ± 6,58			12	28,91 ± 6,74		

*** p < 0,05**

Comparison of pre and post-test values of the boy elite group and comparison of pre and post-test values of the girl elite group are shown in table 1. According to table 1, significant differences were observed in the body fat percentage, four min. swimming test, flexibility, right and left hand grips, 25m sprint swimming test and sit-up test results of boy elite group ($p<0,05$), significant differences were observed in the four min. swimming test, 25m sprint swimming test and sit-up test results of girl elite group ($p<0,05$).

Comparison of pre and post-test values of the boy developing group and comparison of pre and post-test values of the girl developing group are shown in table 2. According to table 2, significant differences were found in the height, four min. swimming test, 25m sprint swimming test and sit-up test results of boy developing group ($p<0,05$), significant differences were found in the height, BMI, four min. swimming test, flexibility, left hand grip, 25m sprint swimming test and sit-up test results of girl developing group ($p<0,05$).

Table 2. The Comparison of Pre-test and Post-test Values of the Developing Groups

			BOYS			GIRLS			
Parameters	**n**	**Tests**	**Mean ± SD**	**z**	**p**	**N**	**Mean ± SD**	**z**	**p**
Age (year)	12	Pre test	9,66 ± 1,3	-1	0,317	12	9,28 ± 0,82	-1	0,317
	12	Post test	9,75 ± 1,28			12	9,35 ± 0,84		
Height (cm)	12	Pre test	137,25 ± 11,55	-3,077	**0,002***	12	133,57 ± 7,24	-3,298	**0,001***
	12	Post test	142,08 ± 11,56			12	137,85 ± 8,60		
Weight (kg)	12	Pre test	32,67 ± 7,16	-1,475	0,140	12	28,35 ± 4,05	-0,722	0,470
	12	Post test	34,08 ± 8,56			12	30,32 ± 3,17		
BMI (kg/m²)	12	Pre test	1,33 ± 0,03	-0,628	0,530	12	4,77± 0,50	-2,542	**0,011***
	12	Post test	1,33 ± 0,04			12	4,97 ± 0,38		
Body Fat Percentage(%)	12	Pre test	16,31 ± 6,18	-0,510	0,610	12	15,39 ± 4,01	-1,697	0,090
	12	Post test	16,17 ± 7,07			12	14,51 ± 4,27		
Four min. Swimming(m)	12	Pre test	193,91 ± 23,41	-3,061	**0,002***	12	200,21 ± 15,62	-3,297	**0,001***
	12	Post test	225,16 ± 16,11			12	227,28 ± 16,05		
Flexibility (cm)	12	Pre test	18,29 ± 7,54	-1,829	0,067	12	25,07 ± 5,95	-2,532	**0,011***
	12	Post test	20 ± 7,5			12	27,32 ± 4,44		
Right Hand Grip (kg)	12	Pre test	15,25 ± 4,92	-0,275	0,783	12	13,86 ± 2,74	-1,006	0,315
	12	Post test	15,67 ± 6,54			12	13,37 ± 1,82		
Left Hand Grip (kg)	12	Pre test	15,67 ± 5,73	-1,138	0,255	12	13,71 ± 2,68	-2,062	**0,039***
	12	Post test	14,9 ± 6,25			12	12,33 ± 1,93		
25m Sprint Swimming (sec)	12	Pre test	26,46 ± 5,76	-3,059	**0,002***	12	24,48 ± 3,80	-3,180	**0,001***
	12	Post test	19,98 ± 1,18			12	20,62 ± 1,41		
30sec. Sit-up (scor)	12	Pre test	18,75 ± 2,41	2,448	**0,014***	12	19,21 ± 3,16	-3,203	**0,001***
	12	Post test	21,25 ± 3,93			12	24,57 ± 5,58		

*** p<0,05**

Table 3. The Comparison of Pre-test and Post-test Values of the Control Groups

			BOYS			GIRLS			
Parameters	**n**	**Tests**	**Mean ± SD**	**Z**	**p**	**N**	**Mean ± SD**	**z**	**p**
Age (year)	12	Pre test	9,66 ± 1,30	0,000	1	12	9,28 ± 0,82	0,000	1
	12	Post test	9,66 ± 1,30			12	9,28 ± 0,82		
Height (cm)	12	Pre test	134,75 ± 11,40	-2,694	**0,007***	12	131,07 ± 7,08	-2,944	**0,003***
	12	Post test	136,83 ± 11,52			12	133,85 ± 6,01		
Weight (kg)	12	Pre test	37,16 ± 7,67	-2,130	**0,033***	12	32,71 ± 4,15	-2,326	**0,020***
	12	Post test	39,04 ± 8,18			12	34,82 ± 4,49		
BMI (kg/m²)	12	Pre test	1,29 ± 0,03	-1,804	0,071	12	4,04 ± 0,38	-0,785	0,433
	12	Post test	1,28 ± 0,04			12	4 ± 0,44		
Body Fat Percentage(%)	12	Pre test	20,34 ± 6,19	-3,063	**0,002***	12	16,41 ± 4,02	-3,298	**0,001***
	12	Post test	21,72 ± 5,99			12	19,22 ± 3,6		
Flexibility (cm)	12	Pre test	14,16 ± 6,62	-1,890	0,059	12	20,64 ± 6,12	-0,447	0,655
	12	Post test	14,41 ± 6,59			12	20,60 ± 5,97		
Right Hand Grip (kg)	12	Pre test	13,32 ± 4,94	-0,276	0,783	12	11,94 ± 2,61	-1,194	0,233
	12	Post test	13,36 ± 5,11			12	11,82 ± 2,51		
Left Hand Grip (kg)	12	Pre test	13,93 ± 5,81	-1,786	0,074	12	11,73 ± 2,69	-0,598	0,55
	12	Post test	14,1 ± 5,73			12	11,67 ± 2,81		
30sec. Sit-up (scor)	12	Pre test	14,16 ± 2,58	0,000	1	12	14,64 ± 3,24	0,000	1
	12	Post test	14,16 ± 2,58			12	14,64 ± 3,24		

*** p<0,05**

Comparison of pre and post-test values of the boy control group and comparison of pre and post-test values of the girl control group are shown in table 3. According to table 3, significant differences were observed in the height, weight, body fat percentage results of boy control group ($p<0,05$), significant differences were observed in the height, weight, body fat percentage results of girl control group ($p<0,05$).

Discussion

When the test results were compared intergroup of boy volunteers, it has been observed that left hand grip was increase in the post-test in addition to pre-test results ($p<0,05$). We thought that this increase of left handgrip in favor of the elite group may be carried out dryland and swimming training. A number of studies have been conducted on both children and adolescents and have clearly demonstrated that athletic training is effective in increasing strength (J.H. Wilmore, D.L. Costill, W.L. Kenney, 2008). Swimming has important contributions to strenght and conditioning because it is carried out against water resistance (I. Gokhan, R. Kurkcu, H.A. Aysan, 2011). The percentage increases for children and adolescents are similar to those for young adults (J.H. Wilmore, D.L. Costill, W.L. Kenney, 2008). Prepubescent strength gains are accomplished largely without any changes in muscle size. A comprehensive study of the mechanisms responsible for strength increases in prepubescent boys concluded that the likely determinants of the strength gains achieved are improved motor skill coordination, increased motor unit activation, and other neurological adaptations. Strength gains in the adolescent result primarily from neural adaptations and increases in both muscle size and specific tension (J.A. Ramsay, et al., 1990). Generally, left hand strenght is lower than the right hand strength because of commonly used right hand as dominant. In this study, we think that total strenght increased owing to training, in parallel with this increase left hand grip strenght which is neglected increase, too.

When the girl elite and developing groups pre-test results were compared between each other and post-test results were compared between each other, significant decrease were observed in the BMI in the post-test in addition to pre-test results in favor of the elite group ($p<0,05$). When the girl elite and control groups pre-test results were compared between each other and post-test results were compared between each other, there were no significant differences in the post-test in addition to pre-test results. When the girl developing and control groups pre-test results were compared between each other and post-test results were compared between each other, significant differences were observed in the height and flexibility in the post-test in addition to pre-test results in favor of the developing group ($p<0,05$). According to these results, dryland and swimming training has caused decrease in the BMI value of elite group, and increase in the height, flexibility values compared with the control group. Althoug no significant differences in the weihgt and height, weight values decreased and height values increased in favor of the elite group after the training program. For this reason, it was thought that significant decrease was observed in the BMI as a result of carried out training program. In parallel with our study, Sanders found significant decrease in BMI values of elite swimmers who 12 ages (R.H. Sanders, 2007). We think that the reason of increase in the height is growth and developing period of volunteers, at the same time, we think that carried out training has effect on the growht factors. Although carried out to same training programme the reason of significant differences in the height value only in favor of developing group may be genetic factors. In addition, we think that significant increase in the flexibility of developing group may be applied swimming exercise. Flexibility is an important factor in human athletic performance (N. Maffulli, J.B. King, P. Helms, 1994). Flexibility may contribute to improved physical performance, reduced energy requirements for movement of joints (because of reduced tissue tension), and reduced likelihood of soreness or injury with physical exercise (N.A. Segal, et al., 2004). Thus, improved flexibility observed in this swimming exercise program suggests an important health benefit, and athletic requirement.

When within-group pre-post test results were compared, significant increases were observed in the height, weight, body fat percentage values in the post test of both boy and girl control groups. This situation was considered as a feature of normal growth period. When pre-post test results of boy elite group were compared, significant differences were observed in the body fat percentage, four min. swimming test, flexibility, right and left hand grips, 25m sprint swimming test and sit-up test results. When pre-post test results of girl elite group were compared, significant differences were observed in the four min. swimming test, 25m sprint swimming test and sit-up test results. When pre-post test results of boy developing group were compared, significant increases were observed in the height, four min. swimming test, 25m sprint swimming test and sit-up test results. When pre-post test results of girl developing group were compared, significant differences were observed in the height, BMI, four min. swimming test, flexibility, left hand grip, 25m sprint swimming test and sit-up test results.

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We think growth and developing period of volunteers result in significant increase in the height of developing groups, at the same time, we think that carried out training may effect on the growht factors. The reason of significant decrease in the BMI of girl developing group is significant increase in heigth and although no significant decrease in weight nevertheless decrease in the weight value. In parallel with our findings Sideraviciūte and his colleauges found significant decrease in the BMI of swimmers who 10-12 ages as a result of training (S, Sideraviciūte, et al., 2004). As a result of carried out training were observed significant decrease in body fat percentage closely related to performance of athlete groups. Body composition can chance substantially with exercise. Such change can be of major importance in achieving optimal athletic performance. Less fat generally leads to better performance (J.H. Wilmore, D.L. Costill, W.L. Kenney, 2008). In paralel with our findings Damsgaard and his colleauges were found significant differences in the body fat percentage of swimmers who 9-13 ages as a result of 6 month training in their study. (R. Damsgaard, et al, 2001).

The child and adolescent respond to physical training similarly to adults with respect to changes in body weight and composition. With both resistance and aerobic training, both boys and girls will decrease body weight and fat mass and increase fat-free mass, although the increase in fat-free mass is attenuated in the child compared with the adolescent and adult. There is also evidence of significant bone growth as a result of exercise training, above that seen with normal growth (J.H. Wilmore, D.L. Costill, W.L. Kenney, 2008). In fact, Bass suggested that the prepubertal years may be the most opportune time to increase bone mass because of increases in bone density and periosteal expansion of cortical bone (S.L, Bass, 2000). Physical training and an active lifestyle are critical throughout the growing years to maintain a healthy body composition and establish a lifelong habit of exercise and activity (J.H. Wilmore, D.L. Costill, W.L. Kenney, 2008).

Exercises have positive effects on flexibility (N. Maffulli, J.B. King, P. Helms, 1994). We thought that significant increase in the flexibility may be carried out training. A number of studies have been conducted on both children and adolescents and have clearly demonstrated that athletic training is effective in increasing strength (J.H. Wilmore, D.L. Costill, W.L. Kenney, 2008). In addition, swimming has important contributions to strenght because it is carried out against water resistance (I. Gokhan, R. Kurkcu, H.A. Aysan., 2011). We thought total strenght increased owing to carried out training programme, in parallel with this increase, left hand grip strenght which is often neglected increased, too.

As a result of carried out training significant increase was observed in the sit-up test result. In parallel with our findings, Heinonen and his colleauges found significant increases in the sit-up test results of swimmers at the end of the training programme (A. Heinonen, et al., 2000).

We thought that significant developments in the 25m sprint swimming test and four min. swimming tests of athletes groups were carried out training programme. These results show that exercises have positive effect on the athletes performance. In parallel with our study, Toubekis and his colleauges found significant differences in the 50m crawl swimming results of athletes at the end of the three-month interval training (A.G. Toubekis, et al., 2006).

In conclusion, as a result of training, decrease of body fat percentage, BMI, and increased of both height, hand grips, flexibility, sit-up test, four min. swimming test, 25 m swimming scores and increased of athletic performance were observed. The reasons of these results are related to each other motor functions and athletic performance. Although it was carried out to same training programme to all volunteer athletes, significant differences were observed in the physical characteristics and motor functions in favor of the elite group. We thought that the reasons of these results were gained psychomotor fundamentals, long sport age and probably genetic factors of elite athletes to affect on the both anthropometric parameters and motor functions. It has been thought that these factors get improve athletic skills of elite athletes.

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PERIODIZATION OF TRAINING EFFORT IN JUNIOR FEMALE GYMNASTS' PREPARATION

POTOP VLADIMIR[1], CÎMPEANU MARIANA[2]

Abstract

The **purpose of the paper** is the periodization of the training effort during a macro-cycle of training and the presentation of the means contents along different stages of training of Junior III female gymnasts.

Methods and procedures. The study was carried out during a period (15.01.2007- 3.04.2007) formed of 3 mezzo-cycles (basic, pre-competitive and competitive), 11 micro-cycles of training, applied on 8 junior female gymnasts, aged from ten to twelve, category III. The gymnasts' progresses were monitored along the training periods in workouts and competitions, using the statistical-mathematical method and the graphical representation method.

Results

The study results show the order and the working schedule on apparatus during the training period, emphasizing the sequence of their carrying out in two training sessions per day, the effort characteristics and the contents of the means in different stages of training, also, last but not the least, the performances achieved in competition.

Discussions

In terms of training effort periodization, in our study are shown the features of the effort parameters in the basic, pre-competitive and competitive period, for training the female gymnasts for the School National Championship 1-3.IV.2007 Buzău.

The analysis of the training means content in different training stages showed the increase of the number of means from one stage to another, pointing out the share of the preparatory exercises during basic stage, the singular technical and artistic elements, with an optimum number of reps necessary for their learning and consolidation; in the pre-competitive stage was emphasized the share of the training means centered on links of technical elements and parts of the full exercise; in the competitive period were pointed out the features of the competitive effort through the training modeling for competition.

The efficiency of training effort periodization during the preparation of the junior female gymnasts was proved by the performances obtained in the School National Championship, illustrated by team results, individual all-around and apparatus finals results.

Conclusions

[1]Ecological University of Bucharest, ROMANIA
[2]School Sports Club no.7 Dinamo Bucharest, ROMANIA
Email: vladimir_potop@yahoo.com
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The characteristics of training effort and the systematization of the training means on different apparatus, in various stages of training of junior female gymnasts, are extremely important. An optimum relationship provided between the effort characteristics administrated in the preparatory period, the specificity of effort parameters in the pre-competitive stage and the turning into good account of the technical training in accordance with the parameters of competitive effort lead to an efficient periodization of training effort and to better performances achieved in competitions.
Key words: artistic gymnastics, effort, means, periodization, training, performance

Introduction

Artistic gymnastics is currently experiencing a new level of development in terms of content and assessment of exercises. The new modifications of the Code of Points, related to the difficulty of technical elements, the granting of bonuses for the connections on each apparatus and last, but not least, the specific requirements of each apparatus will determine new guidelines and tendencies in the technical training on competition apparatus. The training effectiveness consists in the ability of the coach to organize adequate planning instruments, with the final goal to obtain good results in major competitions (V. Potop, 2008).

The periodization is one of the most important concepts of planning and training. The term comes from the word "period", which is a slicing or splitting of time into smaller segments, easily controlled, called training stages. Periodization includes two important aspects: periodization of annual plan and periodization of bio-motor skills (T. Bompa, 2001).

The training effort represents the athlete's process of conscious overcoming of training requirements for physical improvement, for reaching a higher technical and tactical level and also for enhancing the psychical and intellectual factors, whose results produce, intentionally, changes of the capacity for performance and adaptation of the organs and functional systems involved. For reaching the athletic shape, there are general rules applied throughout the three stages, respectively of the 3 periods of a macro-cycle: the preparatory period, corresponding to the stage of installing or reaching the fitness; the competitive period that corresponds to the stage of turning into good account or manifestind the athletic shape and the transition period, which corresponds to the stage of organized getting out of the peaking and recovery of the capacity for effort. (A. Dragnea, S. Mate-Teodorescu, 2002).

Therefore, the prognosis of gymnastics future development is crucial for approaching the training. In recent years there was a continuous „rush" after difficult elements and connections. The specialists of gymnastics were concerned with the „difficulties race" and the increase of executions quality (V. Grigore, 2001).

The large number of events, the rich and varied content of elements and exercises require skill and craftsmanship from coach's part in addressing the objectives of technical, physical, psychological, practical-theoretical and pedagogical nature (G. Niculescu, 2003).

An important factor that conditions the performance in artistic gymnastics is the training process whose quality can be influenced by the ability and activity of the coach. Ensuring the training continuity should be taken into account throughout the entire sports career, meaning that the training annual cycles must not have big interruptions of workouts, leading to a decrease of the capacity for effort. Modern practice confirmed by its results that the increase of body capacity for effort and the peaking for competition is achieved by a large volume with increasing intensity for certain periods (N. Vieru, 1997).

The current issues related to training loads in sports and gymnastics in particular, are explained by the human native capacities, regarding his possibilities of self-improvement, his physiological, biomechanical, anatomical, psychological capacities and the performance limit process. The main indicators of load in gymnastics are the technical elements, the connections and combinations. In planning and recording the load in various stages of training one can use different features, depending on training objectives. It is important that the gymnast performs a maximum amount of work (V.M. Smolevskij, Ju.K. Gaverdovskij, 1999).

Purpose of the paper: periodization of training effort throughout a training macro-cycle and presentation of means content in various training stages of junior III female gymnasts.

Hypothesis

We consider that the assurance of an optimum relationship between the features of the effort made in preparatory period, the specificity of effort parameters in the pre-competitive stage and the turning into good account of the technical training in accordance with the parameters of competitive effort will lead to an efficient periodization of the training effort and to the achievement of better performances in competition.

Methods of research and procedures

The study dealt with the workout plans within a training macro-cycle, analyzing statistically the content of training means and the parameters of workout effort in various stages of training. The statistical processing has been made in Word and „KyPlot" programs.

Subjects, protocol of conduct

To emphasize the periodization of training effort in different training stages of junior gymnasts,

a study was organized in Junior female gymnasts national team of Oneşti.

The study was conducted over a period (15.01.2007 – 3.04.2007) including 11 training micro-cycles, applied on 8 junior gymnasts, 10-12 years of age, category III. The gymnasts' progresses were monitored along the training periods in workouts and competitions, using the statistical-mathematical method and the graphical representation method.

Training macro-cycle 2007:

1. Training period, basic stage (15.01.2007-10.02.2007)
2. Training period, pre-competitive stage (12.02.2007 – 10.03.2007)
3. Competitive period, 12.03.2007- 3.04.2007

Work schedule per apparatus/ shifts:

Morning training session:

- Apparatus no.1: 10^{30} - 11^{00}
- Apparatus no.2: 11^{00} - 11^{30}
- Apparatus no.3: 11^{30} - 12^{00}
- Apparatus no.4: 12^{00} - 12^{30}
- Apparatus no.5: 12^{30} - 13^{00}

Afternoon training session:

- Warm-up : 17^{00} – 17^{30}
- Apparatus no.1 : 17^{30} – 18^{10}
- Apparatus no.2 : 18^{10} – 18^{50}
- Apparatus no.3 : 18^{50} – 19^{30}

Table no. 1. Work order and number of apparatus per training session

	Apparatus	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SÂTURDAY
Morning training session	Artistics	1	1	1	1	1	Warm-up
	Vaults	2	-	2	-	2	1
	Uneven bars	3	4	3	4	3	2
	Beam	4	3	4	3	4	3
	Floor	-	2		2	-	4
	Phys.traing.	5	5	P.T.+mobilt	5	5	P.T.+mobility
Afternoon training sesssion	Vaults	-	1	D	1	-	D
	Uneven bars	-	2	A	2	-	A
	Beam	2	-	Y	-	2	Y
	Floor	1	-	O	-	1	O
	Phys.traing.	3	3	FF	3	3	FF

Table no. 1 shows the work order and the number of apparatus per two workouts/a day during a training micro-cycle

Table no. 2. Features of effort parameters during basic and pre-competitive stage, preparatory period

No.	Effort parameters		Morning training:	Afternoon training	Total
1	**No of preparatory training sessions**		24	16	40
2	**Work on apparatus**	Vaults	12	8	20
		Uneven bars	24	8	32
		Beam	24	8	32
		Floor	12	8	20
3	Warm-up (minutes)		20	20	40
4	Artistic training + mobility (minutes)		50+10	-	50- 60
5	Physical training (minutes)		30	30	60

In table no. 2 are shown effort features in basic and pre-competitive stage, during a preparatory period, emphasizing effort parameters in training session no. 1, 2 and their total value.

Table no. 3. Features of effort parameters during competitive period

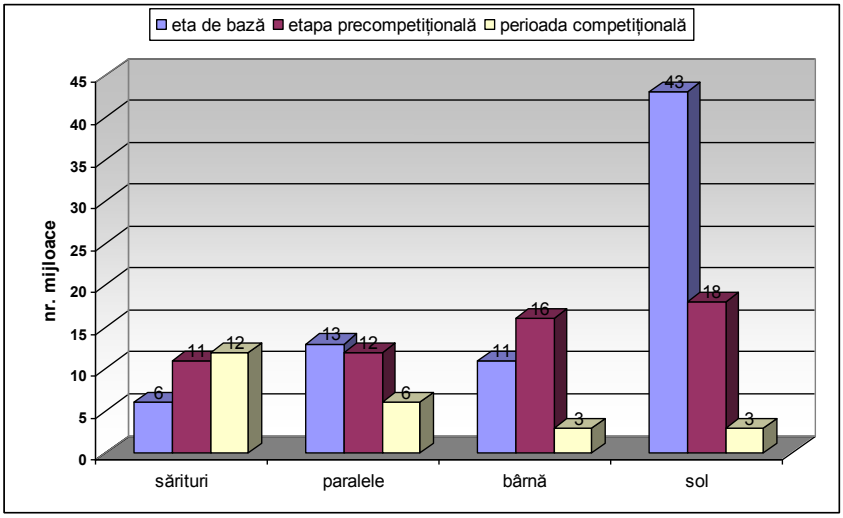
No.	Morning training:		Afternoon training	Afternoon training	Total
1	**No of preparatory training sessions**		20	12	32
2	**Work on apparatus**	Vaults	16	6	22
		Uneven bars	20	6	26
		Beam	20	6	26
		Floor + artistic training	11	6	17

3	General and specific warm-up (minutes)	20	20	40
4	Physical training (minutes)	30	30	60

In table no. 3 are shown effort features in competitive period, pointing out effort parameters, number of training sessions per stage, number of apparatus and, last but not least, duration of physical training.

Table no. 4.Content of training means – preparatory period, basic stage

Apparatus / Content of means		**No. of means**	**No of reps / training sess.**	**Total no of reps**
Vaults	**Preparatory exercises**	5	3-10	720
	Vault	2	5	120
	Total	6		840
Uneven bars	**Technical elements**	10	2-5	960
	Connections of 2-3 elements	3	5	384
	Total	13		1344
Beam	**Elements**	4	5	576
	Connections of acrobatic elements	5	2-5	584
	Artistic elements	2	5	320
	Total	11		1480
Floor	**Acrobatic lines on acrobatic path**	13	1-5	760
	Total of means	13		760
Total of training means		**43**		**4424**



Graph no. 1. Content of training means on apparatus

In table no. 4 and graph no. 1 is shown the content of training means in the preparatory period-basic stage , regarding the means volume on each apparatus, number of means, optimum number of reps per each training session, total number of reps and total number of training means.

Table no. 5. Content of training means – preparatory period, pre-competitive stage

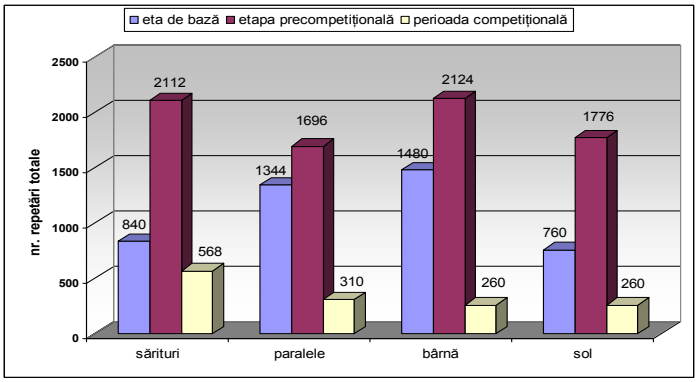
Apparatus / Content of means		**No. of means**	**No of reps / training sess.**	**Total no of reps**
Vaults	Preparatory exercises	6	3-10	1152
	Vaults	5	5-10	960
	Total	11		2112
U n e	Technical elements	9	1-10	1216

	2-3 elements linking	3	5	480
	Total	12		1696
Beam	Elements	7	3-5	844
	Acrobatic elements linking	7	5-7	960
	Artistic elements	2	8	320
	Total	16		2124
Floor	Acrobatic lines on acrobatic path	15	1-5	1296
	Artistic elements	2	5	240
	1st and 2nd part	1	5	240
	Total of means	18		**1776**
Total of training means		**57**		**7708**

Table no. 6. Content of training means – competitive period

Apparatus / Content of means		No. of means	No of reps / training sess.	Total no of reps
Vaults	Preparatory exercises	5	1-3	254
	Vaults	4	5	274
	Series of competition vaults	4	2	40
	Total	12		568
Uneven bars	Warm-up technical elements	2	1	40
	1st part	1	5	38
	2nd part	1	5	38
	Integral exercise	1	3-5	94
	Correction of failed elements	1	5	100
	Total	6		310
Beam	30 seconds warm-up elements	1	3-5	60
	Integral exercise	1	5	100
	Correction of failed elements	1	5	100
	Total	3		260
Floor	Acrobatic lines on acrobatic path	1	3-5	60
	Integral exercise	1	5	100
	Correction of failed elements	1	5	100
	Total of means	3		260
Total of training means		**24**		**1398**

In tables no. 5 and 6 is detailed the content of training means in pre-competitive stage and competitive period as for the volume of means on each apparatus, number of means, optimum number of reps per training session, total number of reps and total number of training means.



Graph no. 2. Contents of total number of reps

Graph no. 2 shows the total number of reps regarding the number of reps on each apparatus, in different stages of training

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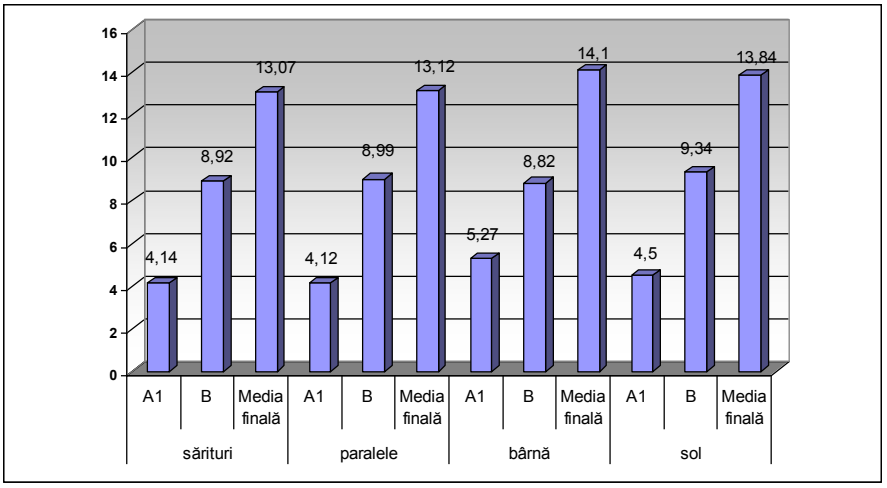
Table no. 7. School National Championship for Juniors, all-round results, 1-3.IV.2007 Buzău

Categ. Place	N.M.													Total Score
		A1	B	Final mean	A1	B	Final mean	A1	B	Final mean	A1	B	Final mean	
III.3	B.A-M.	4.000	9.000	13.000	5.000	8.850	13.850	5.300	8.800	14.100	4.600	9.400	14.000	54.950
III.15	B.B.	4.000	8.650	12.650	3.100	8.650	11.750	4.800	8.150	12.950	4.400	9.300	13.700	51.050
III.2	B.D.	4.400	9.200	13.600	4.000	9.400	13.400	5.500	9.00	14.500	4.800	9.300	14.100	55.600
III.5	D.M.	4.200	8.600	12.800	4.100	9.100	13.200	5.200	9.050	14.250	4.400	9.300	13.700	53.950
III.7	G.G.	4.000	9.000	13.000	4.100	9.250	13.350	4.800	8.350	13.150	4.300	9.350	13.650	53.150
III.1	I.L.	4.200	9.050	13.250	4.200	8.950	13.150	6.000	9.150	15.150	4.700	9.400	14.100	55.650
III.4	Ş.C.	4.200	9.000	13.200	4.400	8.750	13.150	5.300	9.300	14.600	4.300	9.350	13.650	54.600
Mean		**4.14**	**8.92**	**13.07**	**4.12**	**8.99**	**13.12**	**5.27**	**8.82**	**14.1**	**4.5**	**9.34**	**13.84**	**54.13**
S.E.M.		0.0567	0.082	0.118	0.213	0.102	0.246	0.156	0.16	0.29	0.075	0.017	0.08	0.61
S.D.		0.15	0.21	0.313	0.31	0.27	0.42	0.41	0.42	0.79	0.2	0.044	0.21	1.62
Coeff. Var.		0.036	0.024	0.023	0.136	0.031	0.049	0.078	0.048	0.056	0.044	0.01	0.015	0.03



Graph no. 3. School National Championship for Juniors, results at all-round finals, 1-3.IV.2007 Buzău

Table no. 8. School National Championship for Juniors, results at apparatus finals, 1-3.IV.2007 Buzău

N.M.								
	Place	Score	Place	Score	Place	Score	Place	Score
B.A-M.	3	12.925	1	13.850	6	14.100	4	14.000
B.B.							7	13.700
B.D.	1	13.550	2	13.400	3	14.500	1	14.100
D.M.			4	13.200	5	14.250	7	13.700
G.G.			3	13.350				
I.L.			5	13.150	1	15.150	1	14.100
Ş.C.	2	13.150	5	13.150	2	14.600		
Mean	**2**	**13.21**	**3.33**	**13.35**	**3.4**	**14.52**	**4**	**16.92**
S.E.M.	0.57	0.18	0.67	0.11	0.93	0.18	1.34	0.09
S.D.	1.0	0.32	1.63	0.26	2.07	0.4	3	0.2
Coef. Var.	0.5	0.02	0.48	0.019	0.61	0.027	0.75	0.01
N	3	3	6	6	5	5	5	5

Table no. 7 and graph no. 3 summarize the performances obtained by the female gymnasts included in the study at National Artistic Gymnastics Championship for Juniors held in Buzău, highlighting the technical training level at each apparatus by means of A1 score – exercise difficulty, B score – penalties for each execution and final score at each apparatus.

In table no. 8 are listed the results obtained in apparatus finals at National Artistic Gymnastics Championship for Juniors, held in Buzău, showing the place and the final score at apparatus.

Discussions

The subjects of the experimental group are represented by 8 junior gymnasts, aged from ten to twelve, category III , 1st and 2nd year of training, members of Junior Olympic team within the Training Center of Oneşti.

In terms of training effort periodization, the study summarizes the features of effort parameters in the basic stage, pre-competitive one, and the competitive period for junior female gymnasts' training before their participation in School National Championship, 1-3.IV.2007, Buzău.

Throughout our study conduct, junior gymnasts' training has been made in two training sessions a day, namely 10 training sessions a week, 150 minutes/training session, 1500 minutes / week (25 hours).

Regarding the work order at apparatus, the activities on uneven parallel bars and on beam were monitored in both training sessions of the same day, while the apparatus for legs mainly – vaults and floor – were alternated, one in the morning and the other one in the afternoon. All along the training period, the workout program and the apparatus order were maintained constantly, with some exceptions in special cases (injuries, preferences or other conditions).

The review of effort features during the preparatory period – basic stage- and the pre-competitive period, emphasized the fact that the preparation was performed with 40 training sessions per stage, out of which 24 sessions were carried out in the morning and 16 sessions in the afternoon; in terms of work on apparatus at vaults and on floor, this work was materialized in 20 training sessions, out of which 12 sessions in the morning and 8 sessions in the afternoon, at uneven bars and on floor with 32 training sessions, out of which 24 sessions in the morning and 8 sessions in the afternoon, the warm-up lasted 20 minutes per training session, the artistic training and the mobility development lasted 60 minutes per training session and the physical training - 30 minutes per training session.

From the analysis of effort parameters throughout the competitive period, it was noticed that the training was made in 32 preparatory training sessions, out of which 20 sessions were held in the morning and 12 sessions in the afternoon; as for the work on apparatus, at vaults were made 22 training sessions, out of which 16 sessions were held in the morning and 6 in the afternoon, at uneven bars and beam - 26 training sessions, out of which 20 in the morning and 6 in the afternoon, while on floor the target was the improvement of artistic training along 17 training sessions, out of which 11 sessions in the morning and 6 in the afternoon, with general and specific warm-up 20 minutes, specific physical training of 30 minutes per workout.

During the check-up training sessions, held either in the morning or in the evening, the number of apparatus according to the established program was no more respected; the goal was the modeling of the preparation for competition, observing all features of competition effort parameters.

Concerning the content of training means in the preparatory period – basic stage – we can notice 5 training means per workout and 840 total reps in the case of vaults, 13 training means per workout and 1344 total reps in the case of uneven parallel bars, 11 training means per workout and 1480 total reps in the case of the beam, while on the floor there were 13 training means per workout and 760 total reps; in terms of total number of training means per workout, there are 43 training means per workout and 4424 reps per stage.

As for the content of the training means throughout the preparatory period, pre-competitive stage, one can notice the following values: vaults - 11 training means per workout and 2112 total reps; uneven bars - 12 training means per workout and 1696 total reps; beam - 16 training means per workout and 2124 total reps; floor - 18 training means per workout and 1776 total reps; in terms of total amount of training means per workout, we find out 57 training means and 7708 reps per stage.

In terms of content of training means in the competitive period, the following elements can be noticed: vaults - 12 training means per workout and 568 total reps; uneven parallel bars - 6 training means per workout and 310 total reps; beam - 3 training means per workout and 260 total reps; floor - 3 training means per workout and 260 total reps; as for the total amount of training means per workouts, there are 24 training means and 1398 reps per stage.

A comparative analysis of the training stages and periods highlights the increase of means number per workout and the increase of total reps from the basic stage to the pre-competitive stage, while in the competitive stage – where the training means are represented by parts and integral exercises on apparatus - the training means number per workout and the total reps number diminish.

The assessment of gymnasts' technical training level has been made on the basis of the results obtained in competition related to the content of the qualifying program for category III concerning the difficulty requirements for each

apparatus, penalties and execution mistakes (***, 2007).

Analyzing the performances achieved in competition by the subjects of the study at the National Artistic Gymnastics Championship for Juniors, held in Buzău, we noticed the level of technical training at each apparatus, regarding the average of score A1 at vaults: 4.14 points., score B : 8.92 and final score of 13.07 ; at uneven bars, the average of score A1 is 4.12 points., score B : 8.99 points and the final score of 13.12 points ; at beam, the average pf score A1 is 5.27 points, score B is 8.82 points and the final score is 14.1 points; on floor, the average of score A1 is 4.5 points, score B is 9.34 points and the final score is 13.84 points and the average of the total score is 54.13 points.

Conclusions

1. The results of the study emphasize the influence of the training means in various stages and the dynamics of effort parameters in the training of junior female gymnasts category III.
2. The relationship of training means and effort parameters during the basic mezzo-cycles, the pre-competitive and competitive period, highlights the following matters: preparatory exercises, technical and artistic elements at each apparatus, the optimum number of reps necessary for learning and enhancing these ones within the preparatory period of the basic stage; the training means, centered around the connections of technical elements and parts of the integral exercise, the optimum number of reps needed to the improvement of these ones within the preparatory period of the pre-competitive stage; means of training modeling for competition during the check-up workouts, the optimum number of reps required for the improvement of integral executions and the increase of the capacity for effort in the competitive period.
3. The effectiveness of training effort periodization in the preparation of junior female gymnasts was highlighted by the performances achieved at School National Championship, namely the results per teams, all-around and apparatus finals.

The assurance of an optimum relationship between the features of the effort used along the preparatory period, the specificity of effort parameters in the pre-competitive stage and the turning into good account of the technical training in accordance with the parameters of competitive effort will lead to an efficient periodization of the training effort and to the achievement of better performances in competition.

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PLANNING OF SPECIFIC MEANS AND DYNAMICS OF ATHLETIC SHAPE IN PERFORMANCE WEIGHTLIFTERS' TRAINING

POTOP VLADIMIR[1], ULĂREANU MARIUS VIOREL[1]

Abstract

Purpose of the paper - planning of specific means and dynamics of athletic shape in performance weightlifters' training, for participating in Youth European Championships and Senior World Championships.

Methods and procedures. The study was conducted over a period (21.09 - 29.11.2009) formed of 10 micro-cycles, applied on a group of 7 athletes, of 20 to 24 years old, for Junior, Youth and Senior categories. The athletes' performances were monitored during the preparation stages in training sessions and competitions, using the statistical-mathematical method and plotting method.

Results

The results of the study point out the planning of the specific means of training as for the number of reps per each micro-cycle and the share of the technical and strength training means in the two mezzo-cycles of training. In terms of intensity of the specific training means, within this study were taken into account the values of 80%, 85%, 90%, 95%

[1]Ecological University of Bucharest , ROMANIA
Email: vladimir_potop@yahoo.com
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per training means in micro-cycles. Monitoring the athletes in training progress, we pointed out the significant differences between the number of reps with the intensity of technical and strength means at 80%, 85%, 90% and 95%. The effectiveness of planning the specific means and the athletic shape dynamics in the performance weightlifters training is highlighted by the performances got by the subjects of the study in the Youth European Championships and Senior World Championships, thanks to the results achieved per technical styles, their total value and the ranking.

Discussions

Regarding the planning of the technique and strength specific means applied during the performance weightlifters' training, this one was exemplified in the study throughout 10 micro-cycles in the competitive training periods of the mezzo-cycles no. 1 and 2. The review of the planning of training specific means content showed that the number of reps in mezzo-cycle no. 1 has an average of 340 reps in the case of the athletes that did not participate in the Senior World Championships and 275 reps in the case of the athletes that competed in the Senior World Championships. As for the intensity of the specific means during the training micro-cycles, one has highlighted the share of the technical and strength means at 80%, 85%, 90%, 95% and 100% during workouts. In terms of performances obtained by the study subjects in the two competitions, we noticed that the athletes achieved the following performances: 2nd and 3rd places at clean and jerk style, 5th place at total and two 6th places at snatch style in the Youth European Championships and 2nd place at snatch style, 3rd place at clean and jerk style and 4th place at total in the Senior World Championships.

Conclusions

1. The study results point out the efficiency of the specific means planning on the athletic shape dynamics during the performance weightlifters training.
2. The presentation of the planning of specific means depending on the intended objectives of the same training mezzo-cycle highlights the individualization of the training and ensures the continuity in training.
3. The intensity of application of the specific training means in the competitive mezzo-cycles show the share of the technical and strength means per each micro-cycle, with a greater stress on the strength exercises.
4. An optimum relationship of the specific training means, the number of reps per each micro-cycle and the share of effort intensity during two mezzo-cycles of competitive training points out the dynamics of the athletic form and the performances achieved in competitions.

Key words: athletic shape**,** weightlifting, means, performance, planning.

Introduction

The fast increase of weightlifting performances, a phenomenon that we are permanently witnessing, is based on the improvement of technique and training methods.

The planning represents the activity of detailed and accurate elaboration of the training and performance objectives, of the organization means, methods and forms adequate to the intended goals as well (S. Teodorescu, 2009).

The training or lesson means are formed of the assembly of physical exercises meant to provide transformations and improvements at the level of different factors of performance. The specific means have a higher and higher share within macro-cycles, namely during the first micro-cycles their presence is reduced, then they are more and more repeated, as the middle of the pre-competitive stage is getting closer. In the competitive period, the specific means are diminished, leaving the main place to the means of competitive character (A. Dragnea, S. Mate Teoderescu, 2002).

Training organization on mezzo-cycles basis allows the systematization of the training in accordance with the main objective of the training period and stage, ensuring the optimum dynamics of the loads, the combination of different means and methods of training between the factors of pedagogical impact and the recovery activities. The number and structure of the competitive mezzo-cycles in athletes' training highlight the specific character of the sport branch, the features of the competitions calendar and the classification degree and level. The combinations and total amount of loads during the micro-cycles of the mezzo-cycles depend often on the stage of the multi-annual training (V.N. Platonov, 2004).

The structure of the training process within some mezzo-cycles present topical issues in athletes' strength specific training. In their previous studies, the authors have dealt with some methodological approaches concerning the use of mezzo-cycles centered around strength development. The particular interest of the authors has been oriented towards the features of strength training within a longer training period. The analysis of specialty literature made possible to establish that this part of the sport theory and practice had been a subject matter very carefully approached by the specialists of this field. The settled goals, the structure and content of mezzo-cycles show the place of each one in different stages of training (V.V. Bojko, 1987; Y. Verhoshanskij, 1985; V.V. Marchenko, V.N. Rogozjan, 1995; Y. Matveev, 1991).

One of the basic conditions in the planning of workout loads is variety. The gradual increase of loads volume can be made at beginners and children categories, also for the ranked athletes after the transition period, when a new annual cycle of training begins (P.A. Roman, 1986).

To find correctly the main result in the strength exercises of the following mezzo-cycle, it is

a must to grant the objective grade for the special training level reached by the athlete. It is very important to understand the characteristics of recovery indicators in different exercises. At this stage is achieved the decision-making on the athlete's adaptive capacity and on its classification in accordance with the results obtained by selecting the means with best results, presented earlier (V.V. Marchenko, L.S. Dvorkin, V.N. Rogozjan, E.V. Rudenko, 1997).

The effort parameters show the growth of effort intensity from one micro-cycle to another by increasing the load, the number of series and reps; the progressive increase of effort parameters, keeping these ones at maximum level and the volume diminution before the competitive period; dynamics of effort parameters, related to the relationship between the technical and physical training (V. Potop, S.Toma Urichianu, M.V. Ulăreanu, 2010).

The analysis of weightlifters' long-term training at various levels of athletic training allows the discovery and study of individual characteristics. The data of the pedagogical control are the basis for decision-making in organizing the process of athlete's training. By applying them, the prognosis of sports results improvement becomes more accurate, the best models characteristic of both specific physical training and elaboration of the transition stage of athlete's body status are highlighted, models that serve as checkpoints in the main objectives achievement. The effectiveness of coach's work in developing the training program has significantly increased. This fact is manifested in the selection of training cycles structures, of physical exercises, their use in training sessions and loads dosing. (V.V. Marchenko, L.S. Dvorkin, V.N. Rogozjan, 1998).

Regarding the number of reps throughout two macro-cycles of training of Weightlifting Olympic team in 2008, it was found out that the equal number of reps during both training macro-cycles highlights the number of micro-cycles within the training mezzo-cycles, days of training and number of reps in each micro-cycle; the decrease of number of reps and the increase of effort intensity at maximum level from one training micro-cycle to another contributes to reaching the peak athletic shape during the competitive period in macro-cycle no.1. An optimum number of reps provided in training macro-cycle no.2 has helped to maintain the athletic shape necessary for their turning into good account during the next competition. (M.V. Ulăreanu, V. Potop, 2010).

Purpose of the paper: planning of specific means and dynamics of athletic shape in performance weightlifters' training.

Hypothesis

We consider that an optimum relationship of the specific training means, the number of reps per each micro-cycle and the share of effort intensity during two mezzo-cycles of competitive training will point out the dynamics of athletic shape and the performances achieved during competitions.

Methods of research and procedures

The study dealt with the competitive training programs throughout two training mezzo-cycles, analyzing statistically the evolution of performance parameters. The statistical processing was made in Word and „KyPlot" programs, calculating the usual statistical indices and the linear correlation test.

Subjects, protocol of conduct.

For highlighting the contents of specific training means in the planning of performance weightlifters' training, a study was conducted within the Weightlifting Olympic Team.

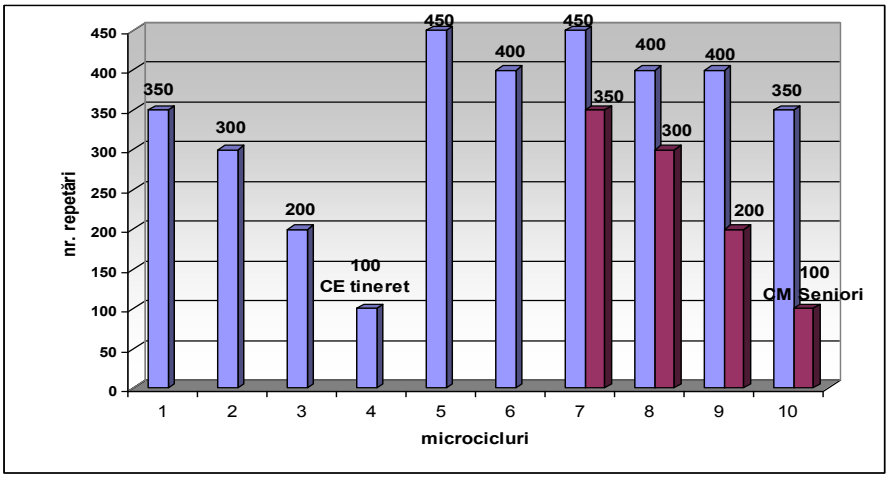
The study was carried out over the period (21.09 - 29.11.2009) formed of 10 micro-cycles, applied on a group of 7 athletes, aged from 20 to 24, juniors, youth and seniors categories.

Table no 1. Contents of specific training means

MZ	MC	Calendar of competitions	No. of reps	TECHNICS / STRENGTH	SNATCH / Clean&Jerk	SQUATS / BACK EXER.	CHEST SQ / BACK SQ.	PULLS / BENDING
Mezzo-cycle 1	1	21-27.09.2009	350	40 / 60	40 / 60	50 / 50	30 / 70	55 / 45
	2	28.09-4.10.2009	300	40 / 60	40 / 60	50 / 50	40 / 60	55 / 45
	3	5-11.10.2009	200	45 / 55	50 / 50	55 / 45	40 / 60	60 / 40
	4	12- 18.10.2009 Youth E.C. –October, 12-18. Wladyslawowo (POL)	100	50 / 50	50 / 50	100 / -	- / 100	- / -
M	5	19-25.10.2009	450	35 / 65	45 / 55	55 / 45	50 / 50	55 / 45

	6	26.10-1.11.2009	400	35 / 65	50 / 50	50 / 50	45 / 55	50 / 50
	7	2-8.11.2009	450	35 / 65	45 / 55	50 / 50	50 / 50	50 / 50
		2-8.11.2009	350	40 / 60	40 / 60	50 / 50	30 / 70	55 / 45
	8	9-15.11.2009	400	35 / 65	50 / 50	50 / 50	45 / 55	50 / 50
		9-15.11.2009	300	40 / 60	40 / 60	50 / 50	40 / 60	55 / 45
	9	16-22.11.2009	400	40 / 60	50 / 50	55 / 45	40 / 60	50 / 50
		16-22.11.2009	200	45 / 55	50 / 50	55 / 45	40 / 60	60 / 40
	10	23-29.11.2009	350	40 / 60	40 / 60	50 / 50	30 / 70	55 / 45
		World Senior Championships – November, 17-27 Goyang City (KOR)	100	50 / 50	50 / 50	100 / -	- / 100	- / -
Mean			340	39.5 / 60.5	46 / 54	56.5 / 43.,5	41.1 / 63	53.3 / 52
			275	42 / 58	45 / 55	61.5 / 38.5	39.3 / 68.5	55.6 / 55.5
SEM			35.6	1.57 / 1.57	1.45 / 1.45	4.89 / 4.89	2.46 / 4.66	1.17 / 5.43
			38.1	1.69 / 1.69	1.49 / 1.45	6.45 / 6.45	2.39 / 5.58	1.13 / 7.47
SD			112.5	4.97 / 4.97	4.59 / 4.59	15.4 / 15.4	7.4 / 14.7	3.53 / 17.1
			12+0.7	5.37 / 5.37	4.7 / 4.59	20.4 / 20.41	6.78 / 17.6	3.20 / 23.6
Coeff. Var.			0.33	0.12 / 0.08	0.09 / 0.08	0.27 / 0.35	0.18 / 0.23	0.06 / 0.33
			0.43	0.12 / 0.09	0.10 / 0.08	0.33 / 0.53	0.17 / 0.25	0.05 / 0.42
Sum			3400	395 / 605	460 / 540	565 / 435	370 / 630	480 / 520
			2750	420 / 580	450 / 540	615 / 3.85	315 / 6.85	445 / 555

Note: the values written in blue represent the number of reps of the athletes who did not participated in World Senior Championship; the values written in red represent the number of reps of the athletes in training progress for WC.



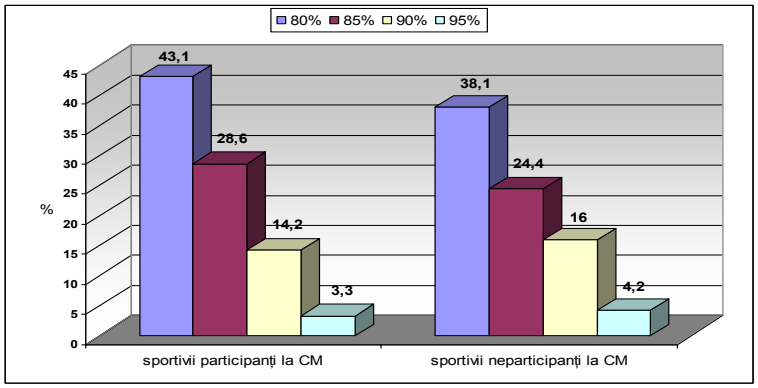
Graph no. 1. Number of reps per micro-cycles throughout training

Note: the number of reps written in red show the athletes who participated in World Senior Championships.

Table 1 and graph 1 show the contents of specific training means, regarding the number of reps per each micro-cycle, the share of technical and strength training means.

Table no. 2. Intensity of training specific means

Micro-Cycle	INTENSITY														
	TECHNIQUE - %				SQUATS - %					PULLS -%			BENDING -%		
	80	85	90	95	80	85	90	95	100	80	90	100	80	90	100
1	24	13	13	2	23		23		14	20	20				
													31	31	15
	23	14	12	5	27	27	10	6		28	28				
2	24	13	13	2	23		23			20	20				
													31	31	15
	23	14	12	5	27	27	10	6		30	20				
3	24	24	12	2	27		18			20	20				
													32	25	
	23	14	12	5	27	27	11			25	25				
4															
					35	10									
5	25	10			16		16			30	20	10			
													28	28	16
	26	15	3		24	16	10	6		40	30				
6	22	20	4		28		24		2	30	30	10			
													28	28	14
	26	15	5		25	20	10			28	28	16			
7	25	10			16		16			30	30	10			
													28	28	16
	26	15	3		24	16	10	6		30	30	10			
	24	13	13	2	23		23		14	20	20				
													31	31	15
	23	14	12	5	27	27	10	6		28	28				
8	22	20	4		30		30		10						
													28	28	14
	26	15	5		25	20	10			28	28	16			
	24	13	13	2	23		23			20	20				
													31	31	15
	23	14	12	5	27	27	10	6		30	20				
9	21	20	8	3	28		30		16	15	15				
													27	27	14
	21	27	11	2	34	22	10			28	28	16			
	24	24	12	2	27		18			20	20				
													32	25	
	23	14	12	5	27	27	11			25	25				
10	24	13	13	2	23		23		14	20	20				
													31	31	15
	23	14	12	5	27	27	10	6		28	28				
					35	10									
Mean	43.1	28.6	14.2	3.3											
	38.1	24.4	16	4.2											
SEM	4.86	3.88	3.29	1.11											
	6.36	4.34	3.62	1.14											
SD	15.3	12.2	10.4	3.52											
	20.1	13.7	11.4	3.61											
Coef. Var.	0.35	0.42	0.73	1.06											
	0.52	9.56	0.71	0.86											
Sum	431	286	142	33											
	381	244	160	42											



Graph no. 2. Average of training intensity

Table no. 3. Correlation of reps number with the intensity of technique and strength means (without the athletes who participated in World Championships)

Statistical Indices	Intensity of means 80%	Intensity of means 85%	Intensity of means 90%	Intensity of means 95%
R Coefficient of correlation	0.78	0.53	-0.09	-0.22
tStatistical	3.527 (P<0.01)	1.79 NS P>0.05	0.26 NS P>0.05	0.66 NS P>0.05
P- Value	0.007	0.11	0.79	0.52

Table no. 4. Correlation of reps number with the intensity of technique and strength means (with the athletes who participated in World Championships)

Statistical Indices	Intensity of means 80%	Intensity of means 85%	Intensity of means 90%	Intensity of means 95%
R Coefficient of correlation	0.79	0.56	0.24	-0.35
tStatistical	3.644 (P<0.01)	1.939 NS P>0.05	0.714 NS P>0.05	1.07 NS P>0.05
P- Value	0.006	0.08	0.49	0.31

Tables 3 and 4 show the correlation of the number of reps with the intensity of the technique and strength means at 80%, 85%, 90% and 95% of the athletes who participated in the Senior World Championship and of the athletes who did not compete in this Championship.

Table no.5. Youth European Championship – October , 12-18, Wladyslawowo (POL)

Full name	Birth year	Class of weight (kg)	Weight in competition	Snatch (Kg)	Clean & Jerk (kg)	Total (kg)	Ranking		
							Snatch	Clean & Jerk	Total
Olaru Gabriel	23.11.1988	56	55.74	96	135	231	9	2	5
Stoichiță Paul	10.01.1989	69	68.65	130	171	301	6	3	5
Roşu Alexandru	30.04.1987	77	76.10	142	173	315	8	7	8
Sâncrăian Gabriel	21.12.1988	85	83.55	150	170	320	6	10	7
Danciu Marius	05.12.1989	85	84.10	145	170	315	8	11	10

Table no.6. World Senior Championships – November, 17-27, Goyang City (KOR)

Full name	Birth year	Class of weight (kg)	Weight in competition	Snatch (Kg)	Clean & Jerk (kg)	Total (kg)	Ranking		
							Snatch	Clean & Jerk	Total
Miculescu Ninel	15.05.1985	69	68.92	155	178	328	2	6	4
Calancea Valeriu	20.07.1980	94	93.42	0	211	0	0	3	0

In tables no. 5 and 6 are highlighted the performances achieved by the subjects of the study at the Youth European Championship and the Senior World Championship regarding the results obtained by the subjects of the study at Youth European Championship and Senior World Championship, as for the results per technical styles, total amount of these ones and the place in ranking.

Discussions

Regarding the planning of the specific means of technique and strength applied within the training of performance weightlifters, these ones were exemplified in this study during 10 micro-cycles in the competitive training periods of the mezzo-cycles 1 and 2.

The analysis of the planning of specific training means contents showed that the number of reps in mezzo-cycle no. 1 changes with an average of 340 reps in the case of athletes who did not compete in Senior World Championships and 275 reps in the case of athletes who participated in Seniors Worlds Championship, the share of training means for the non-participating athletes is 39.53% of technique and 60.5% of strength and for the participating athletes is 42% technique and 58% strength.

In terms of intensity of the specific means during the training micro-cycles, we notice the share of the technique and strength means at 80%, 85%, 90%, 95% and 100% during the training, having an average of 43.1% at 80%, of 28.6% at 85%, 14.2% at 90% and 3.3% at 95% in the case of the athletes who did not participate in the Seniors World Championship; in the case of the athletes who participated in the World Championship, the average is 38.1% at 80%, 24.4% at 85% , 16% at 90% and 4.2% at 95%.

Concerning the correlation of the number of reps with the intensity of the technical and strength means at 80%, 85%, 90% and 95% for the athletes subject matter of the study, it can be noticed significant differences at $p<0.01$ at the intensity of 80% and insignificant differences at 85%, 90% and 95%.

Analyzing the performances obtained in competitions by the subjects of the study at Youth European Championship, it was noticed that the athletes achieved the following performances: 2nd and 3rd places at clean and jerk style, 5th place at total and two 6th places at snatch style (table no. 5).

As for the performances achieved at Senior World Championship, an improvement of the performances has been observed: the athletes obtained the 2nd place at snatch style, 3rd place an clean and jerk style and 4th place at total (table no. 6).

Regarding the efficiency of training specific means planning and the dynamics of athletic shape, these ones were materialized by the performances obtained by the subjects of the study during competitions.

Conclusions

1. The results of the study demonstrate the effectiveness of specific means planning on athletic shape dynamics in performance weightlifters' training.
2. The presentation of the specific means planning depending on the objectives had in view during the same mezzo-cycle of training highlights the individualization of the training and the ensurance of the continuity in training.
3. The planning of the specific means and the share of these ones during two competitive training mezzo-cycles varies depending on the intended goal.
4. The parameters of the effort show the increase of effort intensity from one micro-cycle to another by the growth of the load and the decrease of reps number.
5. The intensity of application of training specific means in the competitive mezzo-cycles emphasizes the share of technique and strength means per each micro-cycle, with a higher stress on the strength exercises.
6. Pointing out the significant differences between the reps number and the intensity of the technique and strength means at 80%, 85%, 90% and 95% at the athletes in training progress.
7. An optimum relationship of the specific training means, the number of reps per each micro-cycle and the share of effort intensity during two mezzo-cycles of competitive training emphasizes the dynamics of athletic shape and the performances achieved during competitions.

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THE RESULTS DYNAMICS FOR THE LITTLE GIRLS' SPRINT EVENTS IN THE NATIONAL TRACK AND FIELD CHAMPIONSHIP - INDOOR

RAȚĂ BOGDAN CONSTANTIN[1], RAȚĂ GLORIA[1], ALEXE DAN IULIAN[1], RAȚĂ MARINELA[1], SAVA ADRIAN[2]

Abstract

Objectives: This study aimed to emphasize the dynamics of time and movement speed during the 60 m – little girls I, 50 m – little girls II, and 40 m – little girls III events.

Material and methods: In order to underline the results during the qualifications and finals, we used as research methods: the study of the specialized literature, the observation, the electronic recording, the statistical-mathematical method and the chart method. The results were recorded using the Alge Timing Optic 2 electronic timing system, made by the Alge Timing Company. 24 subjects participated in this research (8 little girls I, 8 little girls II, 8 little girls III). ***The hypotheses*** started from the belief that the time and the movement speed have small oscillations between the qualifications and the finals races, and that most little girls run better in the final race than during qualifications.

The recorded and analyzed **results** emphasize the manifestation of the movement speed in the three age categories during the short sprint events conducted in the winter competition season. The results prove that in nearly all cases the children cannot improve their values in the final race, in comparison with the series.

The conclusions have emphasized the fact that the time and the movement speed, in most of the studied female runners, recorded small oscillations between qualifications and the final races, which partially confirms the first hypothesis, but also the fact that most of the little girls run slower in the final race than in the qualifications, which negates the second hypothesis.

Keywords: running, competition, little girls, speed

Introduction

"The possibility to rapidly enhance the running and movement speed" (M.V. Zațiorski, 1972), when talking about little girls III, of 8-9 years old, about little girls II of 10-11 years old, and about little girls III of 12-13 years old, is primarily dependent on the hereditary predisposition, and secondly, on the level of the general and specific training. T. Ardelean, in 1991, thinks that "the capitalization of the speed potential depends on the practical-methodical skill of each physical education teacher", but when we discuss children, me must take into account the physical and psychological fragility of their age.

The athletic result depends on respecting the training principles aiming the achievement of a large number of repetitions, avoiding the use of the same tempos and to promote the analytical approach method for avoiding the speed barrier (an idea advocated by M. Pradet, 1996, A. Duray, in 1997).

In its essence, the athletic result is the combination of great efforts during the initiation in the specific speed events motor training, and of being aware of your own competitive possibilities.

The athletic performance represents the product of a great development of the senses and of the personality, manifesting through increased adaptation possibilities to the training and competition environments.

Material and method

The analysis of the recorded time and speed during the 60 m, 50 m, and 40 m races, specific to the categories: little girls I, little girls II, and litlle girls III, aimed to establish a starting point for

[1]University „Vasile Alecsandri" of Bacău, ROMANIA
[2]Ph.D. candidate at the University of Pitești, ROMANIA
Email: rbogy75@yahoo.com
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knowing the manifestation values during the indoor national championship, and, implicitly, for choosing criteria during selections.

The hypotheses we set to verify in this study started from the belief that the time and the movement speed have small oscillations between the qualifications and the finals races, and that most girls run better in the final race than during qualifications. In this study, we used as research methods: the study of the specialized literature, the observation, the electronic recording, the statistical-mathematical method and the chart method. For this research, we chose 24 female sprinters as subjects (8 little girls I, 8 little girls II, and 8 little girls III). The recordings were made in March 26-27, at the ***Bucharest Track and Field Hall.***

The results were recorded using the Alge Timing Optic 2 electronic timing system. They were centralized, entabulated, and analyzed.

Results

In the National Track and Field Championship - Indoor, during the sprint events, 45 little girls I participated in the 60 m, 39 little girls II in the 50 m, and 20 little girls III in the 40 m, coming from different Romanian sportive clubs and associations.

Our study comprised only the girls ranked among the first in the finals. Because all types of manifestation of the speed are trained "through competition demands that imply a capture and a quick process of information, as well as high movement and action speeds" (K.H. Bauersfeld, 1988), we considered that a parallel presentation of the results recorded for the three age categories can open a door for knowing the children's evolution, and can ensure a real information on the possibilities of these age categories.

The results were recorded during the National Track and Field Championship, for Children I, II, III, organized in Bucharest by the Romanian Track and Field Federation. In this competition 382 children participated, of which 176 girls and 206 boys.

The analysis and presentation of the results was made separately, for the time, and for the movement speed.

Analysis of the recorded time in the girls I, II, and III

The time recorded during the qualifications series and during finals, in the little girls I, II, and III, for the 60 m, 50 m, and 40 m events, can be found in Table 1.

- ***the time in the 60 m run*** made by the eight female finalists was between 8.20 and 8.62 seconds, with an average value of 8.48 seconds in the series, and between 8.19 and 8.64 seconds with an average value of 8.49 seconds in the finals. The participants obtaining the first three times during the series succeeded this feat also in the finals, but only the first place winner had improved her time in the finals with 0.01 seconds, the other two runners having scored lower values, with 0.05 seconds. Four of the eight contestants ran better in the finals, while four of them recorded time values below the ones in the series.

- ***the time in the 50 m run*** made by the eight female finalists was between 7.48 and 8.02 seconds, with an average value of 7.77 seconds in the series, and between 7.50 and 8.26 seconds with an average value of 7.89 seconds in the finals. Two of the contestants who recorded the first three time values in the series could not win the first three places in the finals. The winner of the first place in the series, with a time of 7.48 seconds, succeeded, without improving her performance, to come also in the first place, in the finals. The second place winner in the finals, with a result of 7.75 seconds, improved her time with 0.03 seconds in comparison with the series, where she was credited with the third place, while the third place winner, with a result of 7.77 seconds, increased her performance from the series, with 0.18 seconds. Only one contestant managed to record a better time in the final race than the one in the series.

Table 1. The time during the sprint race – little girls

LITTLE GIRLS I					LITTLE GIRLS II				LITTLE GIRLS III			
No.	I	V	60 m (s)		I	V	50 m (s)		I	V	40 m (s)	
			series	finals			series	finals			series	finals
1	BC	13	8.20	8.19	PAI	11	7.48	7.50	ARI	9	6.98	6.91
2	BM	12	8.28	8.23	UAD	10	7.72	7.75	BML	9	6.92	6.91
3	VAl	13	8.49	8.54	ABG	11	7.91	7.77	AIR	8	6.88	7.01
4	CAI	13	8.54	8.55	LCC	11	7.74	7.83	BL	9	7.33	7.20

5	CAP	13	8.60	8.55	LMV	11	7.71	7.84	PM	9	7.16	7.29
6	PIM	13	8.62	8.61	UMAP	11	7.89	7.96	DIM	9	7.34	7.43
7	MD	13	8.53	8.63	BVE	11	7.66	8.22	DLM	9	7.47	7.58
8	B.A.	13	8.61	8.64	PL	11	8.02	8.26	BAI	8	7.69	7.71
Av.		**12.88**	**8.48**	**8.49**	**Av.**	**10.88**	**7.77**	**7.89**	**Av.**	**8.75**	**7.22**	**7.26**
S		**0.35**	**0.16**	**0.18**	**S**	**0.35**	**0.17**	**0.25**	**S**	**0.46**	**0.29**	**0.30**
Max. val.		**13**	**8.62**	**8.64**	**Max. val.**	**11**	**8.02**	**8.26**	**Max. val.**	**9**	**7.69**	**7.71**
Min. val.		**12**	**8.2**	**8.19**	**Min. val.**	**10**	**7.48**	**7.5**	**Min. val.**	**8**	**6.88**	**6.91**

- ***the time in the 40 m little girls III,*** made by the eight female finalists was between 6.88 and 7.69 seconds, with an average value of 7.22 seconds in the series, and between 6.91 and 7.71 seconds with an average value of 7.26 seconds in the finals.

The contestants who recorded the first three time values in the series won also the first three places in the finals. The first place winner in the finals, even if during the series she came third, as time was concerned, managed to improve her performance with 0.07 seconds, finishing the race in 6.91 seconds, thus being declared the national indoor champion. The second place winner in the finals recorded the same time as the first place winner, 6.91 seconds, improving her time with 0.01 seconds than the series, keeping her position from the series. The third place winner, with a time of 7.01 seconds, records an improvement of 0.13 seconds, although during the series she obtained the best result in the competition (6.88 seconds). Two of the eight contestants managed to run faster in the final race than in the series, while the other six ran slower, which proves the instability at this age category.

Analysis of the movement speed in the little girls I, II, and III

As it can be seen, the movement speed in the three events is different, because the studied subjects are different, both as age and as training level.

The movement speed recorded during the qualifications series and during finals, in the little girls I, II, and III, for the 60 m, 50 m, and 40 m events, can be found in Table 2.

The speed in the 60 m little girls III, made by the eight female finalists was between 7.31 and 6.96 m/s, with an average value of 7.07 m/s in the series, and between 7.32 and 6.94 m/s with an average value of 7.06 m/s in the finals. As we can see, for the average values recorded during the series and the finals, the difference is positive, of 0.01 m/s. The first two contestants managed to run in the final race with 0.01 m/s and 0.05 m/s faster, while the third ran with 0.04 m/s slower. The speed was, in the final race, better for four of the eight contestants, in comparison with the qualifications.

The speed in the 50 m little girls III, made by the eight female finalists was between 6.68 and 6.23 m/s, with an average value of 6.44 m/s in the series, and between 6.66 and 6.05 m/s with an average value of 6.34 m/s in the finals. The contestants who ran with a speed between 6.43 m/s and 6.66 m/s obtained a medal, and climbed the podium in the indoor championships finals. The movement difference, which can be considered small, of 0.02 m/s, made nevertheless possible for a girl to obtain a medal from a different metal, an aspect which underlines the importance of the length and frequency of the running step.

The speed in the 40 mlittle girls III, made by the eight female finalists was between 5.81 and 5.20 m/s, with an average value of 5.54 m/s in the series, and between 5.78 and 5.18 m/s with an average value of 5.52 m/s in the finals.

The contestants who were situated in the first three places, ran during the series with a speed between 5.73 and 5.81 m/s, and during the finals with a speed between 5.70 and 5.78 m/s. As we can see, the movement speed average value dropped in the finals, with 0.03 m/s, in comparison with the series.

Table 2. The speed during the sprint race – little girls

LITTLE GIRLS I					LITTLE GIRLS II				LITTLE GIRLS III			
No.	I	V	60 m (m/s)		I	V	50 m (m/s)		I	V	40 m (m/s)	
			series	finals			series	finals			series	finals
1	BC	13	7.31	7.32	PAI	11	6.68	6.66	ARI	9	5.73	5.78
2	BM	12	7.24	7.29	UAD	10	6.47	6.45	BML	9	5.78	5.78
3	VAl	13	7.06	7.02	ABG	11	6.32	6.43	AIR	8	5.81	5.70
4	CAI	13	7.02	7.01	LCC	11	6.45	6.38	BL	9	5.45	5.55
5	CAP	13	6.97	7.01	LMV	11	6.48	6.37	PM	9	5.58	5.48
6	PIM	13	6.96	6.96	UMAP	11	6.33	6.28	DIM	9	5.44	5.38
7	MD	13	7.03	6.95	BVE	11	6.52	6.08	DLM	9	5.35	5.33
8	B.A.	13	6.96	6.94	PL	11	6.23	6.05	BAI	8	5.20	5.18
Av.		**12.88**	**7.07**	**7.06**	**Av.**	**10.88**	**6.44**	**6.34**	**Av.**	**8.75**	**5.54**	**5.52**
S		**0.35**	**0.13**	**0.15**	**S**	**0.35**	**0.14**	**0.20**	**S**	**0.46**	**0.22**	**0.22**
Max. val.		**13**	**7.31**	**7.32**	**Max. val.**	**11**	**6.68**	**6.66**	**Max. val.**	**9**	**5.81**	**5.78**
Min. val.		**12**	**6.96**	**6.94**	**Min. val.**	**10**	**6.23**	**6.05**	**Min. val.**	**8**	**5.2**	**5.18**

Discussions

As we can see in Chart 1, between the individual results from the series and the finals, there are no large differences in the three events, for the runners placed in the first three positions.

The comparison between the times (Chart 2) recorded during the 60 m and 50 m, shows that for the 10 m of difference in length between the two events, there are time differences of 0.71 seconds in the series, and 0.55 seconds in the finals. Also, between the 50 m and the 40 m events, for the same 10 m difference, there are time differences of 0.60 seconds in the series, and 0.63 seconds in the finals.

We would like to emphasize the fact that the difference is sustained also by the age difference between the three groups of athletes.

Chart 1 - The dynamics of the first three time results from the series and finals

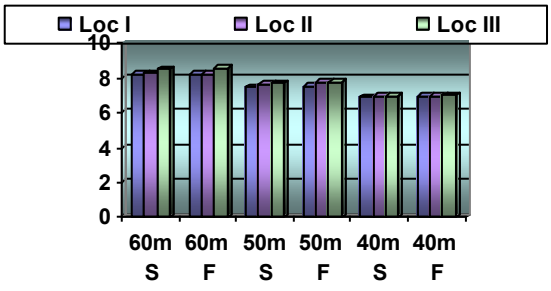
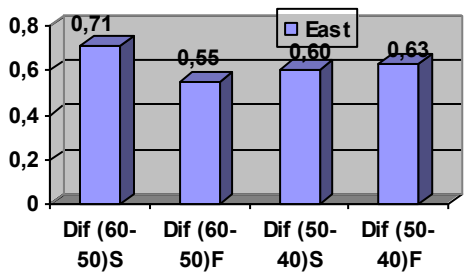


Chart 2 - The difference between the average time values between the events



There are no large differences between the individual results in the series and the finals of the runners placed in the first three positions, as it can be seen in Chart 3.

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The comparison between the speeds (Chart 4) recorded during the 60 m and 50 m, shows that for the 10 m of difference in length between the two events, there are speed differences of 0.63 m/s in the series, and 0.72 m/s in the finals. Also, between the 50 m and the 40 m events, for the same 10 m difference in length, there are speed differences of 0.90 m/s in the series, and 0.82 m/s in the finals.

In a study conducted on children, in 2007, B.C. Rață (2008, page 44) found a value of the arithmetical means for the movement speed of 5.82 m/s, in one group.

Chart 3 - The dynamics of the first three movement speed results from the series and finals

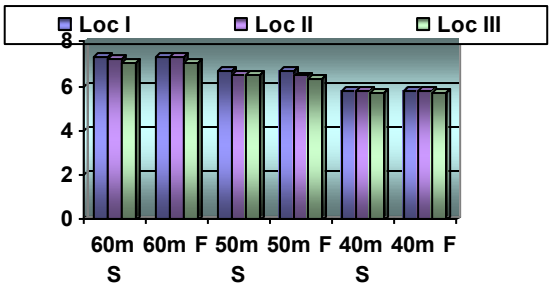
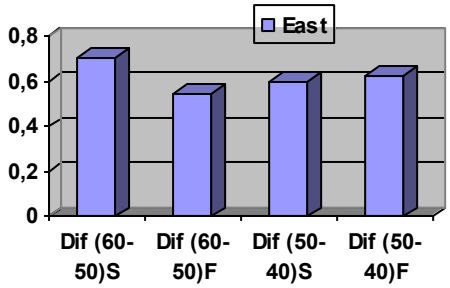


Chart 4 - The difference between the average speed values between the events



Conclusions

The analysis of this study allowed the following conclusions:

1. The time and the movement speed, in most of the studied female runners, recorded small oscillations between qualifications and the finals races, which partially confirm the first hypothesis.

2. Most of the girls run slower in the final race than in the qualifications, which negates the second hypothesis.

3. The time recorded by the winners, in the two races, for the 60 m, is better in the finals (8.19s) than in the series (8.20s), for the 50 m is better in the series (7.48s) than in the finals (7.50), for the 40 m events is better in the finals (6.91s) than the series (6.98s).

4. The speed recorded the same dynamics as the time, having a value for the 60 m run better in the finals (7.32m/s) than in the series (7.31m/s), for the 50 m run better in the series (6.68 m/s) than in the finals (6.66 m/s), for the 40 m run better in the finals (5.78 m/s) than in the series (7.73m/s).

5. The average values for the speed and time can constitute a criterion in the selection process for the track and field events, and can be a training parameter.

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TECHNICAL TRAINING IN THE PRACTICE OF BEGINNER HANDBALL PLAYERS

RIZESCU CONSTANTIN[1], GEORGESCU ADRIAN[1], GHERVAN PETRU[2]

Abstract
Purpose. The complexity of the training system of sports games is further exacerbated by the diversity of specific motor skills, sports technique, which manifests itself in various conditions, in relation to opponents and teammates. Technical training should be conducted fairly and efficiently from beginners level support activities based on practical and theoretical and methodological knowledge (A. Nicu, 1993).
Theoretical and methodological issues. The training is done to improve the technical training of athlete's motoric behavior, resulting in multiple possibilities to solve the ever-changing during the game. The diversity of technical executions sports games have some common features of organization learning, the priorities established methods of learning technology. And the composition of the groups planning the training process for beginners' theoretical and practical issues must be respected at this level, so we only shape the sport fair and effective technical execution in accordance with age specific game model.
Conclusions. Knowledge of and compliance with technical and theoretical training covering it, based on the respect differences in age and level of training requirements will lead to the formation of youth took place traditionally a fair and effective technique, with significant scope for development in the future.
Key words: technical, technical training, planning, preparation process.

Introduction

In sports games, the complexity of the training system is further exacerbated by the diversity of specific motor skills which manifests itself in various conditions, in relation to opponents and teammates. It has been observed a rapid and spectacular evolution of the handball game, the level of performances accomplished in the actual stage is very high and can only be reached by the players of whose capacity of performance is specifically high and in continuous performance. The quality of the training process of children and juniors, gathered in the mass basis of the performance handball, represents a decisive factor of the assurance of a superior performance capacity of handball players, at the level of the actual game requirements and in the perspective of its evolution. (I. Kunst-Ghermănescu şi colab., 1983; C. Rizescu, 2005). It is important at the beginner level to combine the selection requirements with the necessity of the accomplishment of a training process joined in the limits of some corresponding coordinates of age and sex particularities, which must lead to the achievement of priority objectives specific of the level.

The technical training applied in accordance with the issues and objectives specific of the training level, contributes decisively to the correct assimilation of the base technique, as a favorable premises for the achievement of technical art at (C. Rizescu, 2008). When this thing is supported also by a solid physical, general and specific training there are conditions for which sportsmen to deal with success to the level of the actual handball exigencies. The technical training will be approached at the same time with the other components of the practice, but especially with the physical training and then with the tactic one, because the mutual conditioning between them leads to technical art and to the rise of sports performances. (D. Colibaba-Evulet , I.Bota ,1998).

The training of technical skills in various tactical situations, in relation to the physical and psychical development of sportsmen, is the path which needs to be followed in order to improve performances. At this we add the quality of the training process, the professional capacity of the trainer, the material base and the management of activity (I. Kunst- Ghermanescu si Colab., 1983). All these happen in the context of the tendencies and development directions of the games, because of the modifications of rules imposed by the growth of its dynamism attractions and beauty.

The technical training must be realized correctly and efficiently from the beginner level having at its base the support of practical activities and of the theoretical – methodical knowledge (A. Nicu, 1993).

Theoretical and methodological issues

The technical training is represented by the total of the adopted measurements in the training process, as regards to the leading, organizing and the methodology used for the purpose of assimilating the technique specific to sports branch. (A. Dragnea, 1996; D. Colibaba-Evulet, I. Bota, 1998). We can say without mistaking that the technique is the one which differentiates a sport from the other.

N.G. Ozolin (1972) states that the sports technique represents " the ways of executing a

[1]Facultatea de Educaţie Fizică şi Sport Constanţa, ROMANIA
[2]Facultatea de Educaţie Fizică şi Sport Suceava, ROMANIA
Email: rizescu_costi@yahoo.com
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physical exercise ". Also D. Harre (1973) appreciates that the technique is "a special system of movements which execute themselves simultaneously or successively conducted for the purpose of the rational organization of the modifications of internal and external forces, so that to allow the reaching of superior performances."

From the Romanian specialists I. Siclovan (1977), defines the technique as being "the total of actions and moving procedures, which through their form and specific content, assures the possibility of practicing a sports branch or sporting event, in accordance with the stipulations of rules in force; also it consists the technique of the respective sport". A. Dragnea (1996) sustains that the technique represents "a system of motric structures specific to each sports branch done rationally and economically, as to obtain a maximum efficiency in competitions" .

A definition of technique, with reference to sports games was given by L. Teodorescu (1975), where "the technique represents an ensemble of specific procedures as form and content (known as technical procedures), used with the purpose of practicing with a maximum efficiency a sports game, in accordance with the requirements of the competition game process" .

The importance of technique results from the fact that it assures the economy and efficiency in executing the movement. This thing is conditioned by the level of development of motric qualities and it is in tight connection with the tactical, psychological and theoretical training. The assurance of the physical support represents the essential condition for the assimilation of techniques at the beginner level. The initial baggage of skills and motric experience of each child, are those which influence the level of technical training. There are sports branches which need an exacting training, such as those with complex manifestations of precision and expressivity (gymnastics, eurhythmics, figure skating, synchronized swimming). But there are also sports in which the technique must favor the accomplishment of a maximum efficiency, in running speeds, or the movement economy, in endurance sports. (A. Nicu, 1993). In sports games and combat sports, the technique is the one which influences the favorable solution of complex situations appeared in their unfolding. The training process at the beginner groups will pursue the achievement of large basis of motric skills compared to those advanced where the specialization will become for more narrow (T. Bompa, 2002).

The purpose of technical training is to improve the motric behavior of sportsmen, which determines multiple possibilities of solving always changing situations.

Learning in sports constitutes a complex process, which requires special methodical measurements and a lot of professional competence from trainers. The development of the ability of acting of a sports person represents a process of learning from a psychological point of view. This process is characterized by the laws and stages of learning the motric actions and acts, with some specific differences determined by the particularities of sports branches.

Referring to motric learning, M. Epuran (1976) points out that there is a common connection between these two types of learning and the intelligent one especially that in behavioral acts there are "situations which claim a logic appreciation of situations", learning assumes the accomplishment of volunteer movements which lead to the achievement of some operational motric skills.

In the characterization of learning analysis of sports technique, A. Dragnea (1996) supports that it " takes place in three types that cause as many types of technical skills", namely: perceptual motric learning, motric learning and motric intelligent learning .

We are primarily talking about perceptual-motor learning, which is to change the behavior depending on concrete conditions in training and competitions, through several attempts to obtain synchronization between image format and effectiveness of action. The answer given by an athlete leads to new sensor-motor coordination, increase accuracy and fine coordination or already known schemes. Setting motor responses in relation to external data considered stimulating activities result in perceptual-motor learning, or sensor-motor one. Of all information provided during learning, only a particular part is considered by the sensory system. Selective processing is due to their production source of stimuli, which is the movement itself, its proper conduct in this situation is conditioned by the adverse reaction, which compare the execution of the image - the proposed program. Thus human learning perceptual-motor type is also a learning process of high intellectual intelligence. is required.

The second type is motor learning, resulting in the formation of habits based on sensory components, kinesthetic or proprioceptive, in which the end of a movement is the signal for triggering the next movement (cycling, rowing, swimming). Motor learning is the acquisition of behaviors defined by sports performance, this type of learning has a special specific, because performance is characterized by execution, by its quality, especially in technical sports.

The third type is represented by the smart-motor learning, which takes place in ever-changing conditions, with active and aggressive opponents, characteristic of heuristic sports, creative (combat sports and games). By the intelligent-motor learning we correctly define the process of learning motor acts because besides abilities, skills, habits, it includes notions and concepts. This type of complex

learning changes behaviors mainly motric in the basis of intelligent actions ordered by situational awareness.

In intelligent learning intellectual processes of thought and memory predominate. It uses superior mechanisms of the human intellect. Intelligence involves learning its fundamental characteristics. These features are: conscious, conceptual, forward-looking, resolutive, creative, problematical, heuristical, algorithmical, operational learning etc. It should be noted that human learning is based on word, so learning involves through its characteristics the ability to work with symbols and meanings.

Motric intelligence provides a good level of achievement of motric learning and sports performance. The share of elements involved in motric learning is different by the nature of their activities and components. Among the three forms of specific motric learning, there is not achieved a clearly defined border, this being difficult, the field is stretched as wide, targeting intrinsic theories and methods but also a number of related theoretical disciplines (experimental psychology, neurological sciences, physics, IT) and related applied disciplines (engineering, psychotherapy).

Sports activity in general and particularly training technique provides a specific area of knowledge of motricity, in its conduct rising a multitude of theoretical and practical issues that are still poorly defined.

For learning techniques we will go through learning stages of any act, action or motric skill.

According to the opinions of specialists in the field, sports technical learning stages are (G. Cârstea, 1993; A. Dragnea, 2009):

1. The information and formation of movement representation stage, when the athlete creates the foundation design and learning process that are to be learned based on explanations and intuitive means.
2. Coarse or poorly differentiated stage movement, characteristic of the first practical execution, where the main information comes from the instructions received verbally from the coach.
3. Fine coordination and consolidation techniques stage, where correct movements usually are performed in standard conditions or rather different, the execution has pace, precision and amplitude being made with raised indices of speed, strength and endurance.
4. Improvement and excess learning of techniques stage; it performs with superior efficiency indices in the most varied conditions.

Knowing the theory of learning in sports, we should solve the increasing efficiency in terms of its multitude of tehnical procedures of playing handball.

The diversity of technical executions in sports, has some common features of organization learning, established in the methodical priorities of learning technique (A. Dragnea, 1996; A. Dragnea, Mate S. Teodorescu, 2002; C. Rizescu, 2008);

- the establishment of the technical training (those processes that will form the subject of training) at each echelon training - beginners, advanced, performance.
- regardless of their training in thorough assimilation of technical procedures we will consider as much as possible the options and inclinations of athletes for some technical executions.
- at all levels of education, learning technology will be in close compliance with the complex requirements of the competition.
- We will always limit the tendency to "technical flourishes" in some executions, provided they did not have an aplicability in competitions.
- individualization of training is the most effective for learning, strengthening and improvement of sports technique.
- analytical practice is important and always will be effective if followed by repetitions in contests or similar conditions.
- the setting by the coach of drive systems used for technical training in accordance with the features of athletes, preparedness and training objectives.
- the regular evaluation of technical training, using evidence and specific control rules.

We underline the importance accorded to the teaching sports techniques of phenomena of positive transfer and interference (negative transfer) of motric skills, so of the techniques in sports games. Both transfer and interference (negative transfer) shall meet in the process of training and consolidation of motor skills.

The transfer is a particular problem of learning and is the influence of a following activity or one that preceded it.

M. Epuran (1976) defines transfer as "an improvement in learning a task due to previous learning of a task". Learning can be transferred through the common elements between the old and new. At the driving skills, the transfer has numerous variants such as effector and integrator-collector motric type or has cognitive effect. Transfer mechanism is explained by elements of methodical nature, of organizational learning, physiological or psychological nature.

Transfer occurs when made between old and new skills proposed for learning are components, similar items. This transfer is not a simple association where the old components are embedded in the new skill. The transfer is based on extensive analysis, comparison and conscious generalization conscious of the motric experience.

Transfer exercises a favorable influence on the process of acquiring new skills (process),

considerably shortening the time required for repetition, the new skills become more stable with multiple possibilities of application in practice.

Through interference (negative transfer) we understand unfortunate overlap, inadequate of components like the old skills, over the new acquired skill. This interference alters new skill and it's a difficult learning process.

The transfer may take place in reverse. In this case some elements of the new skills overlap an old skill insufficiently set. Interference creates injury to sports activity and therefore should be avoided wherever possible.

Factors favoring interference are quite numerous. The coach's duty is to avoid the ones whom he knows. Knowing them helps the coaches in the judicious planning of homework, in choosing the most effective means, in the general organization of educational process, etc.

Factors that most often influence interference are:

- development and unilateral physical training;
- low level of motric skills;
- motric baggage sprung from a narrow specialization;
- motor skills wrongly learned or poorly consolidated;
- misunderstanding the purpose of the action to be taken the and structure proposed for learning;
- methodological errors in educational planning process;
- programming themes that can facilitate processes like interference;
- failure of necessary breaks between certain components that may interfere;
- the lack of analysis and comparison between similar actions in structure, etc.

Training in handball game is characterized by the simultaneous presence of all components of training, observing the requirement of modeling training in accordance with the structure and nature of the game. Their share varies by level of education and training periods. In the junior echelons and handball performance share component is closely linked to competitive schedule (P. Ghervan, 2003; I. Mihaila, 2006; E. Başturea, 2007).

Reaching sportive shape determines shares of training components varied from one period to another or even within the same period. The stability of a relationship between training components is met at beginner groups of children.

Setting share training components to groups of children is made taking into consideration three elements:

a) motricity of each group and the improvement achieved in each component,

b) work load in certain periods of school

c) the physical and climatic conditions of work;

We present the share of training components (physical, technical and tactical), as a percentage of the total training at all levels of the mass base of performance handball in Table 1.

We find that technical training is dealing with the largest weight training for children and juniors. However its content in children and advanced beginners includes only the basic technique (fundamental) to be acquired correctly, strengthened and even improved. Although it contains fewer procedures, the workload is high, being necessary to use a system of varied and diverse ways.

The game model of children is much more simplified, and learning and improving basic technique included in these models are allowed to acquire further technical performance handball.

The means used for technical training will be attractive like structures representing different situations of the game, to use executions as technical skills, increased efficiency in bilateral game. The complexity of technical means will gradually increase at the juniors I level ensuring similarity with the game. Characteristically of junior high technique is to acquire mastery of execution, achieved through an intense analytical work. This will be alternated with training permanent global executions by introducing complex technical exercise in conditions close game or even bilaterally.

At beginners will be selected means for technical training which have to meet the children's age particularities, race and competitive desire. We forget that at this age the game is still one of the priorities of work, consequently the means technical training will include in adittion specific exercises, dynamic and preparatory games, and relay races.

In handball, the periodization training is a methodical activity of high responsibility for children and junior high. If at the junior level and performance handball the periodization is done in close accordance with the competition, in children timing and stages pursue the objectives of improving the training components (C. Rizescu, 2008). In each period and stage we aim at fulfilling the educational intermediate objectives leading to the final objectives planned for the year.

The periodization of training children must be made in accordance with the structure of the school year. It will be taken into account that during a school year there are periods with greater professional load - semi-final test and verification, and decongestant - beginnings of the semester and school holidays. Scheduling training during these stages is different; they become distinct phases of training.

Methodological and organizational requirements specific of preparing children will affect programming at this level. The lack of

competitive schedule at beginners, will guide the preparation of training components to improve the shape and not get sports shape. Also, training will be done in accordance with the priorities established for each level of education. Due to generally low stability in the number of these groups, new selected children will prepare individualized training programs to reach the same level of training. All these considerations will influence children's periodization and programming the training of beginners and advanced (junior IV) and partly on the performance of children (Junior III).

Knowing the age particularities of the forming groups, and also the analysis and interpretation of availability from a physical, technical, tactical and mental point of view will be the basis of a correct conception of education for children and juniors.

Regarding the planning documents, the requirement is the composition of semester calendar plans, similar in structure as planning physical education lessons in school education. Calendar plans will contain mandatory general training objectives (performance and instructive - educational), training objectives and tasks components, and also a minimal stages.

In making the educational process planning for groups of beginner children we will consider the following aspect (C. Rizescu, 2008):

- game design of Romanian handball school;
- FRH specific models of selection for beginners;
- the general objectives of training for groups of beginners;
- periodization training stages;
- establishment of primary and secondary tasks for each stage.

Given the fact that in handball, at the beginner children level we do not meet an official competitive calendar and the structure of a training macrocycle will have specific issues. The macrocycle training for beginners is to be confused with a preparatory period that covers one school year. The preparatory period will be divided in turn into several stages or mezocycles, with different duration, which can be mezocycles of base and accommodation.

Conclusions

We can make the assessment that technical training and basic technical training handball game is considered a priority at the base of mass handball performance. This is amplified by the multiple possibilities offered by the age of 10-11 in the process of learning motor skills, so of technical procedures. The importance of technical training at this age is recognized by most professionals working in handball performance.

Making an investigation among active coaches who activate at the junior level regarding the importance of technical training and content of game model at beginners, revealed the following (C. Rizescu, 2008):

1. All respondents gave to technical and physical training components, a share of over 40% in preparation, of whom 60.60% believe that technical training should cover half of the training process. Also over 87% of specialists consider 1-2 years are sufficient to achieve specific objectives for children beginners' level.
2. 69.69% of the respondents agree with the current game model, specifically of beginners, considering that for putting it in practice there are required three (54.54%) and 4 (33.33%) weekly trainings.

Table 1: Weight training components at the echelon base table of handball performance
(Adapted by I. Kunst-Ghermănescu et.al., 1983)

	Physical training	Technical training	Tactical trainig
Beginner children	40%	50%	10%
Advanced children – jun.IV	35%	50%	15%
Performance children – jun III	35%	45%	20%
Juniori II	30%	45%	25%
juniori I	25%	40%	35%

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THE STRESSES RELATED TO RECUPERATING FROM ADDICTION

SHADDAD MOHAMMED[1], SOBEH BARAA[2]

Abstract

Objective: The research aims to design an educational program for the basic positions and some judo sport flinging skills also to acquaint the effect of the educational program on the level of some physical fitness elements, alleviating the stresses related to recuperating from addiction, the level of practical practice of basic positions and some judo sport flinging skills.

Procedures: Using pre and post test, the experimental approach was applied on a sample group of 20 males recuperating from addiction. The sample group was chosen according to age category. They aged 20 to 25 years old. They were selected at Al-Matar Hospital for Mental Health and were trained at Cairo Sports Club. Levels of some physical fitness were pre-measured according to the physical fitness standards and the performance of basic positions and judo flinging skills was post-tested. According to standards, the levels of stresses related to recuperating from addiction were pre and post tested whether they were physical, emotional, social, or mental stresses. The proposed educational program was applied for a period of 20 weeks two training sessions per week. The session of training was (45- 60) minutes.

Results: According to the analysis of the results, and in favor of post measurements there were significant statistical differences between pre and post levels of some physical fitness elements, some emotional, social, physical stresses related to recuperating from addiction, levels of performance of the basic positions and some judo flinging skills while there were no presence of significant statistical differences regarding the mental side.

Conclusion: The importance of practicing judo by personnel recuperating from addiction at sanatoriums and mental health hospitals because of its positive effects on reducing the levels of stresses related to recuperating from addiction whether emotional, social or physical stresses.

Key words: Judo sport - stress - recuperating from addiction.

Introduction

Addiction affects the Freedom and maturity of the young men adversely. It is considered to have a great danger on the health and welfare of the human being as a whole, the independence and stability of the countries and the dignity and aspirations of millions of people. It is important to consider the effective role of Egypt in developing the Arab youth to achieve the desirous development in the Arab World. The task and responsibility of the medical treatment institutions in Egypt must not be limited to curing those who fell in addiction, but the re-qualification program must include how to protect against addiction relapse. (S.W. Mosad, 2004)

The problem of addiction relapse is not considered as an individual problem that belongs to the recovered person only but it is a social problem

[1]JudoTraining Dept., Faculty of Physical Education, HelwanUniversity, EGYPT
[2] Combat and Individual Sports Dept., Faculty of Physical Education HelwanUniversity, EGYPT
Email: dr.ayats@hotmail.com
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related to the course of the human civilization too. (H. Mohamed, A. Mahmoud, 2005).

The limitation of the medical treatment to save the addicted person from the withdrawal symptoms that he faces as a result of quitting addiction is considered a stage through which the symptoms are treated to reduce the feeling of them. The basic problem for the recovered person will remain as how to deal with the intellectual whisper and conscience and longing to addiction. (H. Mohamed, 2005).

After finishing his treatment and during the stage of recovery there are several stresses such as psychological, physical, mental and social stresses which face the addicted person and may make him relapse. They emerge by abusing drugs throughout the period of addiction because of the inability to sleep, health disturbance, the lack of appetite, less ability for concentration, hesitant thinking and the inability to make decisions. (A. Ayat, 2005).

Recovering form addicting drugs is considered as a stage of the treatment stages that has special attention by those who are surrounding the addicted person but stages of the treatment are affected by hindering factors of the treatment such as the severe anxiety, nervousness, frustration and depression. (A. Mustafa , 2003).

Also the recovered person from addiction suffers from personal disputes, social withdrawal, social inconsistency with the society, leaving education and family decline that affect him passively when playing his role in the family and in the society. (S. Mustafa, 2000).

From this point there is a necessary need for reinsertion of the recovered person in the society, as this reinsertion contributes in improving willingness of the recovered person for facing the stresses falling upon him. (A. Roberts, 1997; I. Miller, 1998).

And that the theoretical heritage represented in the researches related to recovering from addiction, as a main pivot for the study that tends to be rare. (R. Edwar ,1998).

Considering the seriousness of the relapse problem, after recovering as a result of the stresses falling on the recovered person, specialists in the field of addiction regarded the necessity of providing the re-qualifying services and providing the necessary resources for the treatment and adaptability to have the capabilities of reinsertion in the society, restoring the dignity of the youth who abused drugs formerly (S. Mosaad , 2004).

The two researchers view that the sports support, through the re-qualification programs delineated for helping the recovered person to achieve the utmost to cope well with himself, adapt to the environment, improve the health represent one of the modern means of adaptability. So the recent study will basically focus on using the educational program for the judo sport in a trial to alleviate the stresses of the recovered persons from addiction after finishing the treatment course, those persons having trustful intention to recover from addiction, through raising the level of physical fitness elements, considering the basic focus that allow player to practice the basic positions and some flinging skills in the judo sport. (I. Yasser 2005)

Accordingly, the physical education especially the judo sport- that is the core of the study affects the general health of the recuperated and recovered persons positively through the active participation of the recovered person that activates him to assume and perform his responsibilities towards his health by changing his negative ideas and his negative behavior regarding his heath ,

Hence judo sport tries through its practices to translate the known healthy facts into proper healthy behaviors, so the physical, the mental and the psychological and social sufficiency is verified, as the person will be educated and prepared through physical activity that he practices by the direction and supervision of the specialists by developing the elements of the physical fitness and some judo skills, through providing the recovered persons during exercises with following the healthy habits in their lives like organizing the sleeping time, rest time, work time and studying times in addition directing and promoting the information and health Knowledge. For example, the development of the physical fitness elements will improve the different functions of the different body systems such as the circular, respiratory, muscular , nervous systems that in its turn improves the level of the physical health, consequently alleviating the body stresses falling on the recovered person. In addition, the skills of the judo and the situations of the different games will serve to develop the mental capabilities of the person, encouraging and motivating him, especially when facing the competing person or his rival, trying to understand his tactics when playing and how to face him. Also during the practice the person will try to concentrate on winning and achieving the best possible level, which all depend on the nervous system.

Also judo sport contributes to developing the ability for the disciplined way of thinking, which in turn serves in developing the mental capabilities, thus reducing the mental pressures of the recuperated persons

Also the objectives of practicing this physical activity (judo sport) include pleasure, happiness, satisfaction, and satisfying the trends, this becomes clear when the recovered person knows or learns a new useful skill of judo, also his happiness will increase when he attains high level of performance while practicing this skill. This happiness will compensate the recovered person for some features of failure in his previous life, that will serve in reducing the psychological pressures which

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fall on him, and will help him in recovering the psychological balance leading to improve the psychological heath and alleviating the level of the psychology stresses.

Practicing the judo sport helps in acquiring good behavior, several experiences in the field of aspects of obedience, order and the commitment, also practicing the judo sport helps in acquiring good behavior patterns, order and commitment also acquiring the virtuosi moral qualities, also practicing a good sport enhances good relations between the peers giving them more ability to accept the difficult situations in a forgiving way, so practicing the judo sport helps in developing the social aspects consequently reducing the social pressures falling on the recovered person. So the recovered person must not be contented with viewing the prayers when practicing the sports but must do the actual practice of it, that assures the Chinese wise saying) If I hear I will forget, if I see I will remember, if I do I will know (A. Bana, 2007)

Thus the recovered person must change and develop his behaviors not only through readiness but also through the way of the direct learning.

Objectives of the study:

Designing an educational program for judo to identify:

1- The level of developing some physical fitness elements for the recovered persons from addiction.

2- The extent of performing some basic positions or posts or sets and some finging skills.

3- The extent of reducing the physical , mental, social and psychological stresses

- Hypotheses of the study:-

1- There are statistical differences between the pre and the post measurement among the experimental group in the level of some physical fitness factors in favor of the post measurement.

2- There are statistical differences between the pre and the post measurements for the experimental group in the level of performing the basic posts and some flinging skills in favor of the post measurement.

3- There are statistical differences for extent of reducing the physical, mental. Physcolgical and social stresses , post and pre measurements in favor of the post measurements for the experimental group.

Methods:

- the researcher used the experimental methodology that examines the effect of the independent variable (the educational program for the judo sport) on the dependent variable) the stresses related to the cases of recovered persons from addiction, and of the physical fitness elements and some flinging skills in the judo sport on one sample, the pre and the post measurements were made for such sample.

Research Community: persons recuperated from addiction.

Research Sample:

The sample of the study has been selected by the intentional method - the number of the recovered persons was 20 males selected at Al-matar Hospital.

Conditions of selecting the sample:-

1- Selected males aged between (20- 25) years old
2- They must have true intention for recovery
3- Their weights ranged (65-80 k.g.).
4- They must be free of cardiac diseases , chronic diseases or any physical hindrances.
5-The recovered persons must not suffer from psychological or mental disease.
6- They must quit using drugs.
7- They must hold higher education.

- The homogeneity in the variables of (length, Weight) were found as it appeared that the values of curvature coefficient were restricted between (-,09) – (0.40) values are restricted between (+3 and – 3) that indicates the homogeneity of the sample.

Tools and Equipment:

According to the requirements of the present research the two researchers used the following tools:-

1- The form of meeting with the recovered persons.

2- List of stresses

(Arabic language is the verbal formula for the questions of list of stresses. The explanation of the question will be by the public language for those who will be examined). Also the main dimensions for the questions of the list of stresses will be determined in order to include:

- Physical stresses related to the recovered persons from addiction
- Mental stresses related to the recovered persons from addiction
- Psychological stresses related to the recovered persons from addiction
- Social stresses related to the recovered persons from addiction

3- Measurements:-

- Measuring the weights by using a medical scale and Measuring the length by using resta meter.

* The physical tests:

- testing the movement speed.
- Testing hand hold strength for measuring the muscular strength for the holding of two hands by the manometer device

– Testing the strength of the back and the legs muscles to measure the muscular strength of the back and feet by the denam-meter device.
- Testing the wide jumping from stability using the measurement tap.
- Testing the pass by moving over the marks for measuring the dynamic balance using a stop watch.
- Testing the ability of endurance (sitting from the position of Kneeling with bending the two knees.
- Testing the fitness, lying down from the standing position using a stop watch.
- Testing flexibility. The bride using the measurement tap .

* Testing skills:

Evaluating the performance skills for the basic positions of the judo sport (Ukemi),
1- the back drop (Ushiro Ukemi),
2- the front drop(Mai – Marara - Ukemi),
3- the left side drop the (Hadari Yoko Ukemi),
4-(Migi Yoko Ukemi)).
Evaluating the performance skills of some flinging skills of Judo :
5-(Ippon – Seoi- Nage)
6-(Uki –Goshi)
7-(O- Soto- Gari)

The tests were applied on the reconnaissance- experimental sample of the thesis, the evaluation took place by the evaluators of the of performance level of the recovered persons through recording 3 trials, and calculating the average of them.

Reconnaissance test:

- The reconnaissance study were conducted in the period from (1-8-2010) till (9-8-2010)

Calculating the reliability:- This study has been applied to another sample group of 10 persons different from the basic research sample of the recovered persons. The group was divided into 2 groups of 5 persons. One group consisted of those who were recovered from addiction, and the other group did not use drugs before.

- The reliability of distinction on the sample of the research of reconnaissance was calculated as the value of (T) of the table = (2, 13) and the value of the calculated (t) of the physical test ranged between (6.08)- (103.69) – the value of the calculated (t) of the skills test ranged between (3,43-)- (32.25) , the value of the calculated (t) of the stresses list ranged between and of the pressure list (23.25) -(69,81) that indicates higher reliability for the tests.

Calculating Stability

- The correlation coefficient for the physical fitness elements was calculated by calculating the correlation coefficient between the first and the second application with the difference of 7 days between the distinguished group and the non distinguished group, the value of (R the table) at the level (0.05 = 0.805) the value of the calculated (R) ranged between(0.83) - (0.99) for the physical tests, this value of the skill tests ranged between (0.78) – (0.95)and ranged between for the physical, mental, psychological and social stresses from (0.99) –(81) demonstrating that the test is stable.

Pre measurement:- was done for the experimental group
in the variables (physical, skill, stress level in (14/15-08/2010

Basic Experiment of Research:

Applying the basis experiment of the research was done in the period from 21/08/2010 to 01/01/2011, two times a week (Saturday and Tuesday) for twenty weeks- in Zamalak Sports Club, session: (ranging from 45 from 60 minutes) The program included:
1- Steps of program building.
2- Steps of program application.

First: Steps of program building.

• The objective of the program:- identifying effect of using the educational program of judo on the extent of the development of the physical fitness elements and the extent of acquisition of the basic positions and some flinging skills of judo and the extent of alleviating the physical, mental, physiological, social stresses within the recuperated person from addiction.
• Fundaments of delineating the program:-
1- Program to achieve the objective for which it was delineated.
2- Program to be adapted to age stage.
3- Program periods to be determined and distributed as well as distributing the training loads on them.
4- Observing the rest and intervals between the exercises and groups.
5- Gradation in the load

Second: Steps of program application

Depending on the researches and references aiming at preparing and applying the educational programs in judo, the two researchers prepared and applied the program.

The load was distributed on the educational sessions as the load ranged between (average 50% - above average from 70 – 80 %) in (40) sessions, provided the load tension of first (20) sessions attain (50%) , session time(45) minutes, to reach a total duration of minutes (20 x 45min = 900 min), the first (20) sessions were distributed to (8) sessions (8x 45min =360 m) with the purpose of developing the physical fitness elements and (12) sessions (12 x 45min =540 min) to be distributed as follows: (12 x 25min = 300min) in order to develop the physical fitness elements (12x 15min =180min) in order to educate the perfect basic positions in Judo Sport, (12 x 5min = 60 min) in order to cool the body down, for the other (20) sessions so the load tension ranged between (50 % - 70 - 80 %), the two researchers observed the distribution of the gradual

load strength through the weeks with ratio of (1-2) in addition to observing the graduation in increasing the load, the session time reached (60min), so total of the sessions duration of minutes (20 x 60= 1200min) the session time was distributed as follows:- (20 x 15min= 300min) in order to develop the physical fitness elements, (20 x 40min = 800min) in order to teach the perfect skills of flinging which is the research subject, (20x 5min = 100min) to cool the body down, the relative importance of each element of the physical fitness elements related to judo sport is determined according to main research sample,(10 % of the element of leg muscles strength , 25% of the element of the two arms strength, 15 % of agility 10 % of flexibility , 10% of the element of balance of 15 % of bearing element (muscle and circular), 15 % of movement speed). Learning and perfection of the basic positions and flinging skills which is subject of the research of judo sport passing throughout the three educational stages.

The program sessions were conducted in the determined period at Zamalak Sports Club.

Post measurements:

The post measurements of the experimental group in physical, skills, and stresses level were taken on 02/01/2011.

Results:

Table 1: significance of the pre and post measurements of the experimental group at the level of some physical fitness elements.

S/N	Variables	Pre Measurement M ±SD	Post Measurement M ±SD	Percentage of improvement
1	Pushing a medical ball	3.27±9.54	4.16± 0.03	27.22%
2	Wide jumping	170.05 ± 4.99	184.05±8.01	8.33%
3	Feet muscles strength	104.71 ±1. 14	109.75±1.32	4.81%
4	Back Muscles Strength	100.45 ± 2.54	10.56± 1.04	8.10%
5	The strength of the right hand handling	30.60 ± 2. 14	37.95± 1.12	24.02%
6	The strength of the left hand handling	28.20 ± 1.11	32.90 ± 0.85	16.66%
7	Movement speed	10.19± 1.11	8.40 ± 0.22	17.57%
8	Circular and Respiratory System	13.61 ± 0.42	11.50± 0.30	15.50%
9	Fitness	8.10 ± 0.79	14.45± 9.09	78.39%
10	Flexibility	49.65 ± 1.76	5.44± 44.00	11.38%
11	Muscular tolerance	48.95± 7.50	67.80 ± 4.12	38.51%
12	Balance	69.35± 2.48	74.78 ± 1.11	7.86%

The level of significance is 0.05 % (1.73)

1- The first hypothesis appeared to be correct.

Table 2: the Significance of the pre and post measurements of the experimental group in the skill level of the basic positions and some shooting skills

S/N	Variables	Pre Measurement M ±SD	Post Measurement M ±SD	Percentage of improvement
1	(Ushiro Ukemi)	3.45 ± 0.51	0.32 ±9.33	90.75%
2	(Mai–Marara-Ukemi)	3.60 ± 0.50	0.33 ±0.10	90.83%
3	(Hadari-Yoko-Ukemi)	3.75 ± 0.44	0.33 ±0.10	91.20%
4	(Migi-YokoUkemi)	3.70 ± 0.47	0.29 ± 7.18	92.16%
5	(Ippon–Seoi- Nage)	8.20 ± 0.77	1.10 ±0.15	86.60%
6	(Uki –Goshi)	7.85 ± 0.75	1.10 ±0.15	85.99%
7	(O- Soto- Gari)	8.35 ± 0.67	1.10 ±0.19	86.83%

The level of significance is 0.05 % (1.73)

2-The second hypothesis appeared to be correct

Table 3: Significance of differences between the pre and post measurements of the experimental group in the pressure level

S/N	Variables	Pre Measurement M ±SD	Post Measurement M ±SD	Percentage of improvement
1	Physical stresses	10.65 ±1.31	7.78 ±1.07	26.95%

2	Mental stresses	13.75 ±1.20	13.50 ± 1.28	1.81%
3	Psychological stresses	11.95 ±1.36	10.00 ± 2.15	16.32%
4	Social stresses	12.70 ±1.26	8.56 ± 1.97	32.60%

The level of significance is 0.05 % (1.73)

3-The third hypothesis appeared to be correct in alleviating the physical, psychological social stresses but it was not verified in alleviating the mental stresses

Discussion

From Table 1, it is shown that there are statistical differences between the average of the pre and post measurements in favor of the post measurement in the level of developing some of the physical fitness elements related to judo sport of addiction- recovered individuals as the ratio of improvement for the element of the legs muscles strength attainted 4.81% as a result of the relative distribution for developing the element of the legs muscles strength in the program that attained 10 %. While the program was increasingly concerned with developing the element of two arms strength as its relative distribution in program attained 25 % because of selecting the skills of flinging as a pivot for the program. In addition, the interest of element of circular and muscular tolerance (circular system) was of 15 % in the program in order to increase the efficiency of the vascular system and muscles after the stage of treatment of the recuperated individuals. The improvement in developing the agility element attained the highest percentage of improvement as it was 78.39 % as a result of program concerning of program with adding exercises aiming at changing the state of the recuperated person from static to dynamic condition. In addition, the exercises play a role in breaking barrier of worry regarding the training place and sensing of such place throughout the body movement in order to change the positions of body the fact affects positively the adaptability to the place and sensing of body during the movement. The relative distribution of agility element in the program was 15 %. The ratio of the improvement for the element of dynamic speed attained 17.57 %. The relative importance of the dynamic speed exercises in the program was 15 % to observe the requirements of the flinging movements requiring speed during the performance. The improvement in the elasticity and flexibility elements was 11 % and this percentage was a result of the effect of the exercises used in developing the elasticity and flexibility taking into consideration that in the recuperated individuals whose age (20-25) it is difficult to increase the elasticity significantly. Its relative significance of the elasticity and flexibility in the program was 10 %. The improvement of the balance element attained 7.8 % and its relative significance in the program 10 %. Therefore, the first hypothesis appeared to be correct.

From the results of table 2, it is shown that there are statistical differences between the average of the pre and post measurement in favor of the post measurements in the level of the performance of the basic positions and some flinging skills.

The percentage of the improvement of the basic positions ranged from (90.75 % to 92.16 %). the raised improvement of the main and basic positions is due to its easy performance, while the flinging skills are distinguished to be difficult in the performance. So the second hypothesis appeared to be correct

From table 3, it is shown that the recuperated individuals from addiction that suffer from physical, psychological and social stresses can alleviate the severity of such stresses by practicing judo sport. It is shown that there are statistical differences between the pre and post measurements in favor of the post measurements. As the highest parentages of improvement are alleviating the severity of the social stresses and they attained (32.60 %) this can be explained that it is reinsertion of the recuperated person with the social environment of healthy people can achieve the recuperated person concerning establishing him as a successful person by participating in the training and communicating with the couches, activating with the program. This participation in turn contributes in adaptability to the environment and alleviating the social stresses. In addition, the percentage of improvement of the physical stresses attained (26.95%) that is not little compared to the period of program that is 20 weeks practicing two times a week provided that the session time is 60 minutes.

In addition, the percentage of the improvement of the psychological stresses attained (16.32%). Therefore, it is worthy to point out that the psychological stresses are related to the emotional condition so there is an improvement occurring to alleviate the severity of the stresses that are correlated to a situation of the addiction case by finishing this case, and readapting the recuperated person by practicing the judo sport that contributed to improve the positive psychological abilities and then alleviating the severity of the psychosocial stresses.

There are no statistical differences in the level of the severity of the mental stresses between the pre and post measurements, this can be a result of the continuity of the recuperated person during

the addiction period by abusing the addicted drugs for a long time the fact that affect the nervous system and the desire of the addicted person not to practice the mental activity and thinking which have effect on reducing the competence of the mental skills.

Lack of participation in matches and satisfaction with learning the skills affect the percentage of improvement in the mental stresses greatly. So it is verified that correctness of the third hypothesis in alleviating the physical, psychological social stresses and its not verified in alleviating the mental stresses.

Some current study results regarding alleviating the severity of the stresses are associated with the results reached by the previous researches (A. Roberts, 1997; A. Ayat, 2005) in the terms of the seriousness the stresses and their effect on the addicted person in his stage of being cured and recuperated from the addiction in addition to the necessity of helping them in order to face the relapse and alleviating the severity of theses stresses throughout adaptability programs.

By displaying and discussing the research results, it is shown that the educational program of the judo sport of the recuperated persons from the addiction affects alleviating the stresses fallen upon the recuperated persons.

Conclusion

1- The importance of practicing judo within recuperating from addiction sanatoriums and mental hospitals in the stage of readaptability and reinsertion, because of their positive effects on the reduction of the level of some stresses associated with recuperating from addiction, whether they are emotional , social or physical.

2- It is necessary to train sports specialists in order to work in the main departments of addiction at the addiction sanatoriums and hospitals

3- Encouraging and intensifying the studies and researches related to the recuperated individuals from addiction in order to protect them from returning to it.

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EFFECT OF A RESISTANCE TRAINING PROGRAM ON GH, IGF-1, LACTATE AND DIGITAL LEVEL AMONG FEMALE SWIMMERS

SHOSHA NADIA[1]

Abstract

Purpose. Resistance training is an important stimulus for the muscular tissue. It is described to influence and to be influenced by the hormonal and metabolic state, the purpose of the present study was to prospectively elucidate the effect of resistance training program on growth hormone (GH), the insulin-like growth factor-1(IGF-1), lactate (LA), maximal oxygen uptake (VO2max), pulse rate, muscle strength, and skill performance

[1]Faculty of Physical Education, Zagazig University, EGYPT
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Methods
After introduction and teaching of the training technique, the participants underwent a two hours resistance-training program, three times per week, for 12 weeks. The program was performed indoors at loom's temperature of 20°C and consisted of callisthenic exercises and rubber-tubing exercises
Results. The results of the present study showed an increase in GH and IGF-1 level; while LA level was decreased after the training program. Pulse rate was decreased and VO2max was increased. Besides, the training program had a positive effect on skill performance.
Conclusions. Our study showed that a resistance training program positively affected the players' fitness and skill performance, increased the muscular strength and provoked an increased GH and IGF-1. It is recommended to use a resistance-training program to increase the physical performance of female.

Key words: growth hormone, Insulin like Growth Factor-1, lactate, maximal oxygen uptake, muscle strength, pulse rate, resistant training, skill performance.

Introduction

The benefits of regular resistance training include; increased muscle strength, endurance and size, increased bone density and strength, reduced body fat, lowered heart rate, and decreased blood pressure after exercise (R. Winett, R.N. Carpinelli, 2001; E. Izdebska et al., 2004). Furthermore, studies have showed that resistance training improves balance, and enhances performance of everyday tasks (M. Cizmic et al., 2003; H. Valkeinen, 2006).

Physical exercise involves increased requirements on pulmonary, cardio-vascular and central nervous system, which result in greater neuroendocrine response. Thus, dynamic exercise has been reported to induce hormonal responses, including an elevation of growth hormone (GH) (W.J. Kracmcr et al., 2001), and IGFI (E. Kiive et al., 2004).

Hormones play important roles in providing energy to the muscle and nerves. They are also involved in replacing that energy.

In addition, they play roles in repairing and building tissues. Growth hormone facilitate the conversion of trigly cerides that stored in the liver to free fatty acids and glycerol that the blood can carry to the muscles and promotes muscle growth (M.A. AL-Cott, 2002) .

The GH is crucial in body anabolism as well as in energy production. Body growth is the generally known role of Gil. However, it has multiple biochemical actions as well The GH influences the metabolism of proteins, carbohydrates and lipids. Most of the growth and metabolic effects of GH are mediated by a peptide hormone, insulin-like growth factor-1 (1GF-1), and there is an interactive effect between them (Z. Laron, 2001). IGF-1 plays an important role in the GH/IGF-1 system which influences and is influenced by physical exercise (T. Radosavljevic et al., 2003).

The amount of Lactic acid that accumulates in muscles is determined by the balance between its rate of production and its rate of removal. these two rates are generally in equilibrium during exercise of low to moderate intensity.

There Fore, Little or no additional Lactic acid accumulates in the muscle. At faster speeds the rate of production will exceed the rate of removal so that additional Lactic acid will accumulate in muscle Fabens. The rate of Lactic acid production in muscle Fabens depends on:

-Swimming speed -rate of oxygen consumption and-type of muscle Fabens. Blood lactate (LA), is an end product of anaerobic glycol sis. Increased amounts of LA can cause fatigue during exercise.

Tests of strength can be used to evaluate the physical fitness, the potential capacity for sport and athletic performance, and suitability for the demands of specific vocations.

There is an increasing interest in studying the hormones related to GH/1GF-I axis.

Presumably because, during recent years, the problems with GH doping have increased (A.E. Rigamonti et al., 2005; M. Healy et al., 2003).

The purpose of the present study was to investigate the effect of resistance training program on GH, IGF-1, LA, pulse rate, V02 max, the muscular strength (hand grip, arm, back, leg, and abdominal), and skill performance in female swimming.

Material and methods

Objects:

The study group consisted of ten physical-educations about ten swimmers from zamalek female swimmers team. The mean age was 18.2 ± 1.4 years, the mean weight was 65.2 ± 3.6 kg, and the mean height was 166.4 ± 3.8 cm. All participants were in good health with no physical or psychic diseases. No medication was used by any of them throughout the program. The study was carefully explained and informed was given by all subjects. The study was performed at the Zamalik sport Club.

Method:

After introduction and teaching of the training technique, the participants underwent a two hours resistance-training program, three times per week, for 12 weeks. The program was performed

indoors at room's temperature of 20°C and consisted of callisthenic exercises and rubber-tubing exercises see below.

Table 1: The components of the Callisthenic exercises

Upper body exercises	Arm exercises	Abdominal exercises	Back exercises	Lower body exercises
Straight leg push up	Upright dips	Hanging knee raise	Knee press	Quadriceps lift
Elevated upper body push up	Bench dips	Curl-up	Back lift	Gluteal and hamstring lift
Pull up		Supported leg raise		Calf raise

Rubber-tubing exercises, /.s *a way to develop strength by* the use of rubber tubing. It provides resistance.

Measurement of muscle strength:

A dynamometer was used to measure the muscle strength (grip, arms, back, leg and abdominal muscles strength).

Blood samples:

Five ml blood sample was collected at standardized time (09.00 - 10.00 am) after 8-hour fasting time. The first sample was taken at the first training day.

Another blood sample was collected at the last training day. Blood samples were centrifuged for 10 minutes at 4500xg.

Serum was collected and frozen at -70°C until analysis. Lactate level was measured by using Accusport. GH and IGF-1 were measured with the use of gamma counter and commercial kits (manufactured by Diagnostic System Laboratories Inc.).

The theoretical sensitivity or minimum detection limit was 0.08 and 0.12 ng/ml for growth and IGF-1, respectively. The intra-assay precision was determined from the mean or 10 replicates each.

Physiological measurement:

Pulse rate at rest was counted before and after the training program. V02 max was connecting steady state pulse rate to the specific workload (kgm)

Skill performance:

All participants underwent a skill performance tests, including Ari-Seoi-Noge, Hane-Goshi, Uchi-Mata, before and after the training program.

Statistics:

The SPSS program was used. Mean and standard deviation were calculated. Student's t-test was used for continuous data. As the sample was small, non -parametric method was used. Statistical significance was considered at $p< 0.0$

The Results

- The obtained date showed that.
- Pulse rate, V02 max, lactate: A significant decrease in pulse rate and in lactate together with a significant increase in V02 max was found after.

Table 2: Pulse rate, V02 max and lactate before and after the 12-week resistance exercise-training program.

Parameters	Before m±SD	After m±SD	t-test	p-value
Pulse rate beats /min	73.2-fc9.50	66,4 ±2.1	24,00	< 0.05
V02 max ml/kg/min	47.6 ±2.9	51.2 ±2.7	29,19	< 0.05
Lactate mmol/L	1.4 ±0.9	0.8 ±0.13	38.18	<0.05

min = minute, V02 = Maximal oxygen uptake, m = mean, SD = standard deviation

- **GH, IGF-1:** A significant increase in GH and IGF-1 was found after the resistance exercise-training program, compared to the value before the training program, table 3.

Table 3: GH and IGF1 before and after the 12-week resistance exercise-training program.

Para meters	Before m±SD	After m±SD	p-vahie
GH ng/ml	0.42 ±0.6 &	1.9 ±0.8	<0.05
IGF-1 ng/ml	82.1 ±7.4	130.0 ±8.4	<0.05

m = mean, SD = standard deviation, GH == Growth Hormone, IGF-1 = Insulin-like Growth Factor 1, in = mean, SD = standard deviate

Muscle strength: (Hand-grip strength, arm strength, leg strength, back strength and abdominal strength) increased significantly.

Table 4: Handgrip, arm, leg, back and abdominal strength before and after the 12-week resistance exercise-training program

Parameters	Before m±SD	After m±SD	p-value
Handgrip Newton /kg	42.3 ±3.7 -r	45.8 ±3.1	<0-05
Arm Newton /kg	25.4 ±1.1	32.1 ±1.2	<0.05
Leg Newton /kg	73.9 ±4.8	78.7 ±5.2	<0.05
Back Newton /kg	54.1 ±3.6	58.4 ±4.2	<0.05
Abdominal Newton /kg	35.7 ±2.7	39.4 ±2.61	< 0.05

m = mean, SD = standard deviation.

Significant improvement of the Digital Level, table 5.

Table 5: Digital Level Scores before and after the 12-week resistance exercise-training program.

	Before	After	t-test
Variables	m±SD	m±SD	
100 m free Style	61.96 ±3.45	59.84 ±3.22	<3.72

Results' Discussion

This prospective study showed significant decrease in pulse rate after the resistance exercise-training program, compared to the values before. This was previously stated by Kamath et al, whose application of the frequency analysis of heart rate variability during exercise has shown that the sympathetic frequency curve is decreased (M.V. Kamath et al., 1991). A rational explanation is that the pre-training general predominance of the sympathetic tonus over the parasympathetic tonus (vagal) was changed by the training, leading to a predominance of the vagal tonus (T. Doering et al., 2003).

In the present study, lactate concentration decreased significantly after the resistance-training

program, compared to pre-program levels- This finding may seem to contradict the finding of Robergs and Roberts who showed that exercise causes increased lactale levels. However, they also pointed out that in well-trained altimeters lactate is reduced, at rest and after exercise, compared to untrained subjects (R. Robergs, S. Roberts, 1997). In which Lactate accumulates and formation exceeds pyruvate oxidation. During • exercise lactate is eliminated in liver, heart, and resting and working muscle.

Muscle, elimination depends on plasma concentration, fiber type, and fiber conditions. Training was described to diminish glycogenolysis and lactate production through its influence on hormonal response, mitochondrial oxidative capacity and Training also increases lactate clearance. Thus, the plasma lactatet level is a finely balanced result of the interplay between many factors of importance for endurance exercise (B. Stallknecht et al., 1998).

The obtained data of the present study showed a significant elevation in V02 max after the resistance-training program. This finding coincides with the report published by de Mello Meirelles et al who reviewed the literature considering the acute effects of resistance exercise on energy expenditures (C. de Mello Meirelles, P.S. Chagas Gomes, 2004). The authors concluded that resistance exercise includes an acute increase in energy expenditure, through the energy cost of training exercise session itself and through the excess post-exercise oxygen consumption.

The hormonal response depends on several factors, such as the type, duration or intensity of exercise and the physical state of the subject. Other factors, such as increased core temperature during exercise have also been reported to influence the hormonal response, suggesting a thermal effect for exercise-induced hormonal stimulation (T. Vigas, J. CeIko, J. Koska, 2000). The elevation in GH and 1GF-1 levels after the 12 weeks resistance-training program is in accordance to the results of other studies. Similar findings were reported by Craig ct al (1989) who in a prospective study of young men found that 12 weeks of resistance training increases basal GH concentrations by 45% ($p< 0.05$) and that resistance exercise training doubles the post exercise GH concentrations (B.W. Craig, R. Brown, J. Everhart, 1989). Exercise intensity above lactate threshold and for a minimum of 10 minutes was speculated to elicit the greatest stimulus to the secretion of GH and to amplify the pulsatile release of GH at rest, leading to increase in the 24-hour GH secretion (R.J. Godfrey et al., 2003).

GH has well-known influences on biolysis (J. Jorgcnsen et al., 2003). The GH increases free fatty acids and inhibit glucose uptake by peripheral tissues- Thus, conserving blood glucose which causes a greater stimulation of muscle glycogen synthesis through the accompanying increase in IGF-1 and rapid increase in skeletal muscle lipid catabolism (S.R. Rioom et al., 1976)

GH stimulates the release of IGF-I, which in turn mediates many of the effects of GH at the tissue level. IGF-1 is produced by the liver as well as by the muscles and has anabolic effects. Its concentration is related to the concentration of growth hormone. IGF-1 gives rise to an increase in muscle bulk. Additionally, GH has insulin-like effects, increasing the uptake of amino acids and their incorporation into muscle protein (O. Rutherford, 1999).

Measurement of muscle strength is a well-known method of monitoring improvement after resistance exercise-training programs (L. Gettman, 1988). All participants in the present study showed significant increase of the muscle strength in all areas tested (hand grip, arm, back, leg and abdominal muscles) after the 12-week training period. Additionally, there was a significant increase in skill performance tests. Similar improvements have been reported by other authors (R.V. Breed, W.B. Young, 2003).

Conclusion

The present study showed that a resistance training program positively affected the players' fitness and skill performance, increased the muscular strength and provoked an increased GH and IGP-1. Resistance training program can be recommended to increase the physical performance of female swimmers.

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EXPLOSIVE FORCE DEVELOPMENT IN FOOTBALL PLAYERS 12-13 YEARS OF AGE

STĂNCULESCU GEORGE[1], MELENCO IONEL[1], POPA CRISTIAN[1]

Abstract

The paper aims to apply some workouts for Improving the explosive force, to observe how the techniques have evolved some indices over 4 months at a group of children aged 12.5 years footballers. We want to see how the workouts containing exercises for improved explosive force may improve physical indices at this age. Also believe that improving the physical parameters in football can be done by developing specific training for explosive strength.

Hypothesis

We believe that based on specific training to improve explosive strength indices can significantly increase the

[1]Faculty of Physical Education and Sport, University Ovidius Constanta, ROMANIA
Email: stanculescu_george@yahoo.com
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level of physical football to a group of 12-13 years.

Methods

The experiment was conducted in a group of children born in 1998. Group selection was made in 2008, and the children an experience of over 600 training. In this experiment, 18 players have participated (experimental group). Throughout the period of the experiment in January 2011 - April 2011 were conducted two training sessions each week that contained specific exercises to develop explosive force.

Conclusions

After applying the football training drills to improve explosive strength of soccer players aged 12-13 years, we found an improvement in the physical indices. Therefore propose that the football training these exercises are introduced to improve the physical indices that age group.

Keywords: children, football explosive force, physical indices.

Introduction

For V. Zaţiorschi (1968) is based on explosive force "time for the force to increase to half its maximum value." Some authors define as the ability to show maximum values of force in the smallest unit of time, and believes that it has an important role in obtaining performance-based sports acyclic movements. C. Bosco (1995) states that explosive strength is the ability of muscle to develop high degrees of force in very little time.

The main condition for sports performance is strength training. In this sense we can say that power determines the speed of movements, speed of the player, the intensity with which the ball is hit. Insufficient force correct execution delay, accelerate fatigue and affect the accuracy gestures (G. Stanculescu, I. Melenco, 2003). Hitting the ball with the foot is apparently a natural momentum that even non-specialized individuals, and it hardly repress (I. Ionescu, 1995; V. Stanculescu, 1999). Precision strikes or passes depends on the surface of contact between foot and ball. It will be even greater as this area is higher (P. Luhtanen, 1989). Correlation of football revealed the technical and physical training of the current is given by the increasing physical load that is the game that requires skill, technical capabilities to achieve a speed-strength-increasing force (C. Ferrante, 2000). At a high volume of sophisticated technical means, trends and increase tactical solutions. A mental condition of the technical action gives the stringent requirement of actual football, so the game speed. Attitude and speed that trend there are psychological element (I. Ionescu, 1995).

Hypothesis

We believe that if we apply in specific training programs to explosive strength and technology base will significantly increase the level of physical indicators and techniques to a group of players 12-13ani.

Methods

The experiment took place at Middlesbrough Football Club in the group of children aged 12.5 years. Children have over 600 active sessions. This experiment involved 18 players (experimental group). Throughout the period of the experiment in January 2011 - July 2011, were made by four specific training week.

Mentioned that training took place outdoors on the ground covered and the running track. During the conduct of research, to observe the evolution of athletes and veracity of the proposed exercises to explosive strength of legs and technique, athletes were tested both in initial testing, intermediate and final the following parameters: explosive force sqoat jump, counter movement jump, Standing Long Jump, technical (maintenance ball across the pitch with a fixed, flat area with lace Shot) the training I used:

Exercises for developing explosive strength. Were performed in two workouts a week. (15 minutes / training);

- squat-jumps of thrust-jumps;

-jumps on two legs with different number of jumps;
-jumping over various obstacles on two legs; successive leg-jumping;
-jumps on two legs performed on stage; successive leg-jumps performed on stage;
-jumping separation performed on stage with alternative change legs.

Exercises to develop technique. Were performed in four workouts a week. (40-50 minutes / training);

- Exercises to develop coordination, 10-15 min. / training;
- The governance of the ball by foot (5-10min. training)
- Ways to improve the sense and ball control, (5 minutes each workout)
- Hitting the ball across (10-15 min / coach)
- Taking the ball (10-15 minutes / coach)
- Games with few players (3 for 3, 4 against 4, 5 against 5) on small plots.

All these exercises were included in the specific structure of exercises aimed at improving the physical and technical indicators, in this case technical strength and explosive football player. If I followed the technical exercises exercises to be executed with speed and precision.

Table No. 1 Initial Testing - Explosive Force

Nr. **Name**	sqoat jump		contra movement jump		Standing long jump
	Mb	Ml	Mb	Ml	

1	**E. C.**	356	379	313	338	204
2	**G. A.**	330	404	346	424	203
3	**R. V.**	308	363	365	397	208
4	**M. C.**	333	354	309	417	201
5	**A. A.**	332	443	310	394	203
6	**S. C.**	310	320	330	350	193
7	**T. O.**	430	520	410	500	210
8	**P. M.**	337	390	272	379	203
9	**N. D.**	337	365	281	380	196
10	**C. A.**	246	315	278	293	170
11	**Z. M.**	311	359	264	324	176
12	**M. A.**	252	286	250	300	193
13	**C. D.**	248	267	291	297	171
14	**B. C.**	304	296	319	359	185
15	**G. C.**	318	404	298	378	190
16	**B. D.**	235	326	254	300	179
17	**D. R.**	280	323	334	386	204
18	**L. D.**	313	366	255	311	171
	X+ DS	**310+ 46,86**	**360+ 60,44**	**304,38+42,36**	**362,61+54,79**	**192,22+ 13,66**
	CV	15,11	16,78	13,91	15,11	7,10

Table No. 2 Test Intermediate Explosive Force

Nr	**Name**	sqoat jump		contra movement		Standing long j
		Mb	Ml	Mb	Ml	
1	**E. C.**	407	461	376	420	208
2	**G. A.**	343	421	346	408	202
3	**R. V.**	348	411	364	367	215
4	**M. C.**	323	401	386	403	223
5	**A. A.**	384	370	356	414	215
6	**S. C.**	318	350	355	376	197
7	**T. O.**	444	524	424	521	235
8	**P. M.**	340	397	292	387	210
9	**N. D.**	350	372	379	437	206
10	**C. A.**	382	420	319	484	158
11	**Z. M.**	264	302	255	297	170
12	**M. A.**	263	296	252	302	198
13	**C. D.**	304	348	278	340	165
14	**B. C.**	340	375	339	390	180
15	**G. C.**	308	355	326	350	180
16	**B. D.**	265	344	264	298	172
17	**D. R.**	305	356	346	401	208
18	**L. D.**	329	374	270	318	175
	X+ DS	**333,05+48,84**	**382,05+54,22**	**329,27+50,57**	**384,05+61,61**	**195,38+ 21,96**
	CV	14,66	14,19	15,35	16,04	11,24
	t initial	**2,52**	**1,92**	**3,52**	**1,75**	1,32
	p	0,025	0,05	0,005	0,05	

Table No. 3 Final Testing - Explosive Force

Nr.	Name	sqoat jump		contra movement		Standin
1		Mb	Ml	Mb	Ml	
2	E. C.	361	480	361	478	214
3	G. A.	365	414	374	433	202
4	R. V.	360	421	354	386	208
5	M. C.	329	435	342	375	226
6	A. A.	342	420	360	427	228
7	S. C.	330	377	362	393	202
8	T. O.	433	555	415	559	220
9	P. M.	343	407	299	411	213
10	N. D.	354	411	352	380	195
11	C. A.	337	355	292	338	180
12	Z. M.	245	344	266	333	175
13	M. A.	288	330	277	332	202
14	C. D.	315	376	298	374	170
15	B. C.	354	387	377	408	184
16	G. C.	321	381	346	382	184
17	B. D.	270	352	270	304	175
18	D. R.	338	376	354	360	200
	L. D.	290	354	310	372	184
	X+ DS	331,94+41,79	398,61+53,69	333,83+42,26	391,38+58,84	197,88+18,09
	CV	12,59	13,53	12,65	15,03	9,14
	t init.	**2,57**	**3,97**	**5,64**	**2,90**	**2,58**
	p	0,025	0,0005	0,0005	0,005	0,01
	t inter.	0,18	**2,62**	0,83	0,63	1,22
	p		0,01			

Technical parameters
Table no. 4 Initial Testing

No	Name	Keeping the ball no. repetitions in 60	Step-across fixed area	Shot with lace fixed area
1	E. C.	60	5	6
2	G. A.	54	4	6
3	R. V.	63	5	6
4	M. C.	54	4	6
5	A. A.	45	4	5
6	S. C.	43	4	5
7	T. O.	39	4	5
8	P. M.	33	3	5
9	N. D.	80	6	6
10	C. A.	78	6	5
11	Z. M.	67	4	4
12	M. A.	68	4	4
13	C. D.	45	4	3
14	B. C.	44	3	3
15	G. C.	41	4	3
16	B. D.	42	3	3
17	D. R.	81	6	6
18	L. D.	77	5	5

	X± DS	**56,33±15,82**	**4,33±0,97**	**4,77±1,16**
	CV	**28,08**	**22,38**	**24,40**

Technical Parameter
Table No. 5 Intermediate testing

No	**Name**	Keeping the ball no. repetitions in 60	Step-across fixed area	Shot with lace fixed area
1	**E. C.**	85	7	7
2	**G. A.**	70	6	6
3	**R. V.**	83	7	7
4	**M. C.**	77	6	6
5	**A. A.**	80	5	6
6	**S. C.**	78	5	5
7	**T. O.**	56	5	5
8	**P. M.**	39	5	5
9	**N. D.**	100	7	6
10	**C. A.**	95	7	6
11	**Z. M.**	77	5	5
12	**M. A.**	78	6	4
13	**C. D.**	55	5	4
14	**B. C.**	53	5	5
15	**G. C.**	54	5	4
16	**B. D.**	55	4	4
17	**D. R.**	105	7	7
18	**L. D.**	85	6	6
	X± DS	**73,61±18,17**	**5,72±0,95**	**5,44±1,04**
	CV	**24,68**	**16,74**	**19,14**
	t	**8,51 ***	**11,74 ***	**4,76 ***
	p	**0,0005**	**0,0005**	**0,0005**

Technical Parameters
Table No. 6 Final Test

No	**Name**	Keeping the ball no. repetitions in 60	Step-across fixed area	Shot with lace fixed area
1	**E. C.**	110	8	7
2	**G. A.**	80	6	6
3	**R. V.**	88	7	7
4	**M. C.**	85	7	6
5	**A. A.**	106	7	7
6	**S. C.**	88	6	7
7	**T. O.**	63	6	5
8	**P. M.**	42	6	5
9	**N. D.**	120	8	7
10	**C. A.**	117	8	7
11	**Z. M.**	85	7	6
12	**M. A.**	84	6	7
13	**C. D.**	64	6	5
14	**B. C.**	61	7	6
15	**G. C.**	65	6	6
16	**B. D.**	75	6	6
17	**D. R.**	120	8	7

18	**L. D.**	90	7	7
	X±	**85,72±22,29**	**6,77±0,80**	**6,33±0,76**
	CV	**26,00**	**11,92**	**12,11**
	t inter	**7,03 ***	**7,00 ***	**4,18 ***
	p	**0,0005**	**0,0005**	**0,0005**
	t iniț	**8,91 ****	**16,84 ****	**6,01 ****
	p	**0,0005**	**0,0005**	**0,0005**

Discussions

Tests explosive force to jump squat hands basin (Table no. 2), as shown in the table. 2, calculating the statistical average performance of the initial and intermediate testing, shows a value of "t" of 2.52 (significant, p <0.025). Statistical calculation of average performance of the initial and final testing, shows a value of "t" of 2.57 (significant, p <0.025). In terms of media obtained from intermediate and final testing we see that the value of t is statistically insignificant 0.18, p <0.05. The counter movement jump hands on the basin (Table no. 2), as shown in the table. 2, calculating the statistical average performance of the initial and intermediate testing, shows a value of "t" of 3.52 (significant, p <0.005). Statistical calculation of average performance of the initial and intermediate testing, shows a value of "t" of 5.64 (significant, p <0.0005). In terms of media obtained from intermediate and final testing we see that the value of t is 0.83 (insignificant, p> 0.05).

The counter movement jump free hand as shown in the table. 2, statistical calculation of the average performance of the initial and intermediate testing, shows a value of "t" of 1.75 (significant, p <0.05). Statistical calculation of average performance of the initial and intermediate testing, shows a value of "t" of 2.90 (significant, p <0.005). In terms of media obtained from intermediate and final testing we see that the value of t is 0.63 (insignificant, p> 0.05). Analyzing the coefficient of variability values that are between 10 and 20%, we can say that the two samples we have an average homogeneity of the results obtained by the subjects. Standing long jump to statistically calculate the average performance of the initial and intermediate testing shows a value of "t" 1.32 (not statistically significant, p> 0.05). Analyzing the coefficient of variability values that are between 10 and 20%, we can say that this evidence, we have an average homogeneity of the results obtained by the subjects. Statistical calculation of average performance of the initial and intermediate testing, shows a value of "t" of 2.58 (statistically significant, p <0.01).

In terms of media obtained from intermediate and final testing we see that the value of t is 1.22 (not statistically significant, p> 0.05) (table no. 3) Analyzing the coefficient of variation, which is 9.14 we can say that this sample we have a great homogeneity of the results obtained by the subjects. In the sample keeping the ball, look at the table no. 5 shows a significant improvement between initial testing and testing of intermediate (t = 8.51, p <0.0005). Comparing the results obtained by the subjects between the initial and final testing we noted that "t" has a value of 8.91, p <0.0005, which shows significant progress between the two tests. Also, if we compare the results between the intermediate and final testing we see that the value of t of 7.03 indicates a statistically significant difference at p <0.0005, thus obtaining subjects significantly better at final testing. Coefficient of variability values over 20% shows a small homogeneity of the results obtained by subjects in all tests. The test sample of step with fixed across the area, look at the table no. 5 shows a significant improvement between initial testing and testing of intermediate (t = 11.74, p <0.0005). Coefficient of variation values of 22.38 in initial testing shows a small homogeneity of the results obtained by the subjects. Coefficient of variation values of 16.74%, shows a mean homogeneity results by testing subjects in between. Comparing the results obtained by the subjects between the initial and final testing we noted that "t" has a value of 16.84, p <0.00005, which shows significant progress between the two tests. Also, if we compare the results between the intermediate and final testing of t we see that the value of 7.00 indicates a statistically significant difference at p <0.005, subjects thus achieving significantly better results in final testing. Coefficient of variation values of 11.92%, shows a homogeneous average results achieved by the final test subjects. The test sample shot with lace in fixed area, look at the table no. 5 shows a significant improvement between initial testing and testing of intermediate (t = 4.76, p <0.0005). Coefficient of variation values of 24.40 in our initial testing indicates a lack of homogeneity of results obtained by the subjects. Coefficient of variation values of 19.14%, shows a mean homogeneity results by testing subjects in between. Comparing the results obtained by the subjects between the initial and final testing we noted that "t" has a value of 6.01, p <0.00005, which shows significant progress between the two tests. Also, if we compare the results in final testing (Table no. 6) and note that the value of term t of 4.18 indicates a statistically significant difference at p <0.0005, thus

obtaining subjects significantly better at final testing. Coefficient of variation values of 12.11%, shows a homogeneous average results achieved by the final test subjects. As can be seen in the graphs presented above development to final testing results are significant both to the initial testing and testing from the application of intermediate specific exercises to improve speed and strength to the group of children where they applied working specific.

Conclusions

Following application of the training football specific explosive strength and technique in soccer players aged 12-13 years, we found an improvement in physical and technical indices. Therefore propose that in football training to introduce these exercises to improve physical and technical indicators in this age group.

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DEVELOPMENT OF BACK MUSCLES STRENGTH BY ALTERNATING GRIPS DURING THE SAME EXERCISE IN PERFORMANCE BODYBUILDING

TIMNEA OLIVIA[1], POTOP VLADIMIR[1], ULĂREANU MARIUS VIOREL[1]

Abstract

Purpose. The main purpose of the study is to point out the back muscles strength development by using different grips during the same exercise in performance bodybuilding.

Methods and procedures. The study was conducted over a period of one mezzo-cycle of training (March 2010), in three stages, each one containing four training sessions a week applied on a subject 34 years old, former amateur bodybuilder, motivated to compete at local or even national level in the future. The athlete's progresses were monitored during the training session, by means of statistical-mathematical and plotting methods. For highlighting the subject's evolution in terms of pectoral muscles development, we have used control tests and trials of the anthropometrical data and trials for the assessment of back muscles strength. The methodical procedure of grips alternation during the same exercise was applied for the development of back muscles strength, using means for back development with different grips, at distance, close and in supination positions.

Results. The study results present the development of the anthropometric measurements of the somatic indicators involved in training. These ones emphasize the efficiency of strength exercises for the development of back muscles strength, by using different grips during the same exercise. In order to check up the back muscles strength development, control trials were applied, monitoring the number of reps depending on the load used both during the initial testing and the final one. For pointing out the dynamics of back muscles development, we showed the relationship of reps number and weights used for each exercise, depending on the grips used.

Discussions. In terms of contents of the means for development of back muscles strength, a program of exercises using different grips during the same exercise on different machines was exemplified in this study. Regarding the somatic development following up the application of the exercises program, the following matters have been noticed: a decrease of the body weight by 5kg and of the waist by 1.5cm; an increase of the thoracic amplitude by 2.5cm and an increase of arms perimeter by 0.5cm. As for the results of the control trials of back muscles strength, we noticed an increase by 3 reps at pull-ups and by 5 reps at pull-downs with a load of 80kg. The analysis of the results of back muscles strength during the employed program pointed out an increase of reps number, depending on the grip used, the loads used and the muscle groups involved in the exercise.

Conclusions. The alternation of grips during the same exercise for back muscles strength development during the bodybuilding workout leads to the increase of muscular strength and muscular mass.

The efficient use of methodical procedures through the variation of effort parameters during the back strength workouts contributes to the development of muscle strength and to the definition of the muscle groups involved in effort.

An optimum relationship of the reps number and the weights employed for each set by using various grips will highlight the level of development of back muscles strength along the same exercise.

[1]Ecological University of Bucharest, ROMANIA
Email: vladimir_potop@yahoo.com
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Key words: bodybuilding, evaluation, back strength, means, training

Introduction

The bodybuilding is a very creative sport, in which the athlete and the coach handle the sets, reps and speed of the training in order to reach the highest level of exhaustion, followed by a period of rest and recovery (A. Muraru, 2008); it is the process of muscles development through a combination of weights workouts, increased calories consumption and rest. The achievement of sports performance would not be possible if the athlete does not „hold" in his genetic code a certain motor quantity and quality.

More than in other sports disciplines and branches, the bodybuilding highlights both human body aesthetic posture and motor skills.

The development of each individual's motor skills is a biological, morphological, physiological, biochemical progress, resulting in improvement of tissue structures and in increase of functional capacities of the cardiovascular, enzymatic systems, of the respiratory system, as all of them are carriers of oxygen at muscle tissue level. The human body expresses its strength by making efforts in which the mechanical work is present or not. The effort done is meant to win, maintain or surrender depending on the resistance that must be overcome. It is necessary to distinguish between muscle strength and power. Strength is overcoming resistance without depending on time, while the power refers to the mechanical work done in unit time (C. Bota, B. Prodescu, 1997).

The mechanical work is proportional to the size of the strength that makes this work and to the length of the way on which is moved that body. Thus, if an athlete raises a barbell of 20kp, he performs a mechanical work two times higher than if he lifts a 10 kp barbell and vice versa. However, if the same athlete lifts a barbell up to 2 m high, he makes a mechanical work two times higher than if he lifts the barbell only 1 m high (D. Gavrilescu, 2010).

The volume, the amount of work done includes training duration, the number of kilograms or tons/ weights lifted in a session or training stage, also the number of reps and sets per exercise or training session. In strength training, the intensity is expressed as a percentage on weight or on a maximum rep (1RM). The intensity is a function of nervous stimuli strength used in the training session. The load must relate to the type of strength developed and, most importantly, to the specific combination of the sport, resulting from the amalgamation of strength and speed or of strength and endurance (T.O. Bompa, 2002).

Different types of efforts are made in the course of bodybuilding exercises, which tend – as essential elements - to guide the practitioner in and to the proper competitive orientation. As the bodybuilding is a complex sports branch, the efforts of isometric type (isometric contractions - the muscle shortens under a passive stress) are combined with the isotonic ones (isotonic contractions – the muscle does not change its size, but only its stress status).

Strength is the human ability (biological and mental) to overcome an exterior resistance measured in kilograms, by means of weightlifting and dynamometry. From physiological and bio-chemical point of view, the exercising of muscle strength involves: the activity of a number as large as possible of motor units, the frequency of the associated nervous impulses, the degree of synchronization of different motor units and the bio-chemical and structural features of the muscles engaged in effort.

In the light of modern biochemistry and physiology data, reaching the functional muscle hypertrophy in athletes, throughout the strength workouts, requires the following elements (A. Demeter, 1981): intense biological excitant, adequate infusion of proteins and presence of endogenous anabolic hormones in the quantities needed.

For the major part of sports, the relative importance of strength related to the other factors does not represent safety. A sport is based on continuous observation and development of strength/power: at one extreme can be found the sports in which these factors have a major importance, at the other extreme are situated the sports that do not attach importance to these ones. Consequently, these sports can be named limited power/strength sports or *dependent* sports, sports *associate*d with strength/power and *independent* sports from the point of view of strength/power (*** 2006).

Due to the accumulation of various theoretical data carried over the years of experience and testing, a group of specialists in the art of harmonious sculpturing of the body, headed by the renowned scientist Joe Weider, specialist of bodybuilding working technique, have laid the foundations of Weider work system, based on a set of training principles for developing both each muscle group separately and the whole body as well.
(D. Hîtru, 2002).

The work for strength development primarily supposes determining the type of strength involved by the competitive activity of the respective event or branch. After analyzing the competitive activity, the involved type of strength is established and then the methods to be used are determined. In all these methods is necessary to establish the basic parameters: *intensity, volume of work, breaks and tempo.*

The training for strength and the training for static contractions are designed to produce maximum possible overload to each targeted muscle or muscle groups. After years of experimentation and research it has been found that the most effective way to maximize overload is to use sets of partial strength exercises.

The use of the most powerful set for most of exercises means to use the"last centimeters of the grip"

that you have. Thus, one can exercise with a maximum load without being exposed to injuries (***, 2007)

Methodological procedures for strength development (A. Dragnea, S. Mate-Teodorescu, 2002):

1. Weights lifting procedure: it is achieved by progressive increase of the load, by increasing or decreasing weights, by increasing the load *"step by step"* and *"in full swing"*.
2. Isometric procedure: it is the procedure used for developing the muscle mass; the contraction duration is 9-12 seconds; the pauses between reps are 90-120 seconds.
3. Circuit procedure –it is the most common method to develop the motor skills; it is created for the development of the main muscle groups, for the development of strength under endurance conditions inclusively. The exercises used in the circuit must be known to the athlete and must be accessible in terms of volume, intensity and complexity of the physical effort; the sequence of exercises must engage in efforts all major muscle groups of the human body. It is not recommended to make 2 successive exercises for the same muscle group. The difficulty of exercises must be increased progressively. The dosage of physical effort in this type of exercises must be strictly individualized – individual records.

Depending on the number of exercises used in the circuit, we have:

- Short circuits – 6-7 exercises;
- Average circuits – 8-9 exercises;
- Long circuits - 10-12 exercises.

4. Procedure of rapid isotonic contractions – it is used for developing the explosive strength, namely strength under speed conditions (it is recommended for vascularity and for muscular definition).
5. Procedure of efforts repeated up to overflowing – it involves a large number of reps with average weights; the efficiency of this procedure is obvious after the installation of the real fatigue. It is a very good procedure for novice bodybuilders, as it represents the foundation of muscle development.
6. Power-training procedure – is used to develop explosive strength; it is recommended for obtaining the competitive vascularity and muscle definition. It consists of 3 exercise groups:

- group 1 – exercises with average weights;
- group 2 - exercises with maximum weights;
- group 3 – aerobic exercises.

A work program includes 12 exercises divided into 3 groups, each one including 4 exercises. After the execution of a group of exercises, the break is 3-5 minutes long.

Purpose of the study: highlighting the development of back muscles strength, by alternating different grips during the same exercise in performance bodybuilding.

Study hypotheses:

Alternative grips during the same exercise meant to develop the back muscles strength in bodybuilding workouts will lead to the increase of muscle strength and muscle mass.

The effective use of methodical procedures by varying the effort parameters during the back strength workouts will contribute to the development of muscle strength and to the definition of muscle groups involved in the effort.

An optimum relationship provided between the number of reps and the loads used for each set, by using different grips, will highlight the development of back muscles strength during the same exercise.

Place of study conduct, subjects

In order to point out the content of training means by grips alternation, for back strength development in performance bodybuilding, we have conducted a study of case in the sports club „Tonik Fitness Club" of Bucharest; the subject of the study is 34 years old, former amateur bodybuilder, motivated to participate in zonal or even national competitions in the future.

The study was conducted over a period of one training mezzo-cycle (March 2010), four training sessions a week.

Methods of research:

-*Bibliographic study* – theoretical documentation of the book

-*Observation method* – observation of subjects' performances during training sessions;

-*Method of experimental study* – method for confirming or invalidating the study hypotheses

-*Statistical and mathematical method* – used for calculating the main statistical indices: X – arithmetical mean, Am – standard deviation, S – standard deviation; Cv% - coefficient of variability, r – coefficient of correlation and t – significance of correlation

- *Plotting method* – it contributed to a more efficient interpretation of study results.

Control tests and trials:

A. Anthropometric measurements: Size (cm); Weight (kg); Thoracic perimeter (cm): inspiration, expiration and thoracic amplitude; arms perimeter (cm): right and left.

B. Control trials:

1.Cable machine pull-downs with large grip 80kg, assessed by maximum number of reps.

2.Bar pull-downs with alternated grips, assessed by number of reps with weights (10kg, 15kg, 20kg).

Training program applied for back strength development

For the development of back muscles strength, we have used the methodical procedure of grips alternation during the same exercise. This procedure is meant to increase the muscle mass.

Exercises used during the workouts:

1. Exercises with large grip:

- Bar pull-downs with large grip: *4 sets 8 reps, using weights (10kg, 15kg, 20kg);*

- Cable-machine pull-downs with large grip: *4 sets 10 reps (40kg, 80kg, 104kg, 120kg);*
- Seated row with large grip: *4 sets 25 reps (41kg, 57kg, 73kg, 89kg);*
- „Smith" machine pull-downs with large grip: *3 sets 20, 40, 60 reps (73kg, 65kg, 56kg).*
- Bar behind neck pull-downs with large grip: *4 sets 8 reps, using weights (10kg, 15kg, 20kg);*
- Press behind neck pull-downs with large grip: *4 sets 10 reps (40kg, 56kg, 81kg, 96kg);*
- Cable machine row in horizontal plane with large grip: *4 sets 25 reps (40kg, 48kg, 56kg, 64kg).*

Figure no. 1. Bar and cable machine pull-downs with large grip

2. Exercises with close grip

- Chest bar pull-downs with close grip: *4 sets 8 reps, using weights (10kg, 15kg, 20kg);*
- Handles cable machine pull-downs: *4 sets 10 reps (40kg, 80kg, 104kg, 120kg);*
- „Smith" machine pull-downs with large parallel grip: *4 sets 10 reps (40kg, 56kg, 80kg, 96kg)*
- Seated row with close grip: *4 sets 25 reps (41kg, 49kg, 57kg, 65kg);*
- Handles cable machine row in horizontal plane: *3 sets 30, 60, 90 reps (64kg, 56kg, 48kg);*

Figure no. 2. Bar and cable machine pull-downs with close grip

3. Exercises with grip in supine position

- Bar pull-downs with grip in supine position: *4 sets 8 reps, using weights (10kg, 15kg, 20kg);*
- Cable machine pull-downs with grip in supine position: *4 sets 10 reps (40kg, 80kg, 104kg, 120kg);*
- Seated row with grip in supine position: *4 sets 25 reps (41kg, 49kg, 57kg, 65kg);*
- Cable machine row in horizontal plane with grip in supine position: *3 sets 30, 60, 90 reps (64kg, 56kg, 48kg);*

Figure no. 3. Pull-downs with grip, in supine position

RESULTS OF THE STUDY AND THEIR INTERPRETATION

Table no. 1. Anthropometrical measurements

No.	Full name	Age (years)	Weight (kg)		Size (cm)	Waist (cm)	
			Initial	Final		Initial	Final
1	B.V.	35	80	75	166	89	87.5

Table no.2. Anthropometrical measurements - thoracic perimeter

No.	Full name	Thoracic perimeter (cm)						Arms perimeter (cm)			
		Expiration		Inspiration		Elasticity		Right		Left	
		Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	R.V.	106	105	112	114.5	6	9.5	42	42.5	41.5	42

In tables no. 1, 2 and 3 are summarized the results of anthropometrical measurements, highlighting the following somatic indices: size, weight, waist, thoracic perimeter and arms perimeter.

Table no. 3. Results of control trials for back muscles strength

Full name	Bar pull-downs (max no of reps)		Cable pull-downs with 80kg (max no of reps)	
	Initial	Final	Initial	Final
B.V.	21	24	31	36

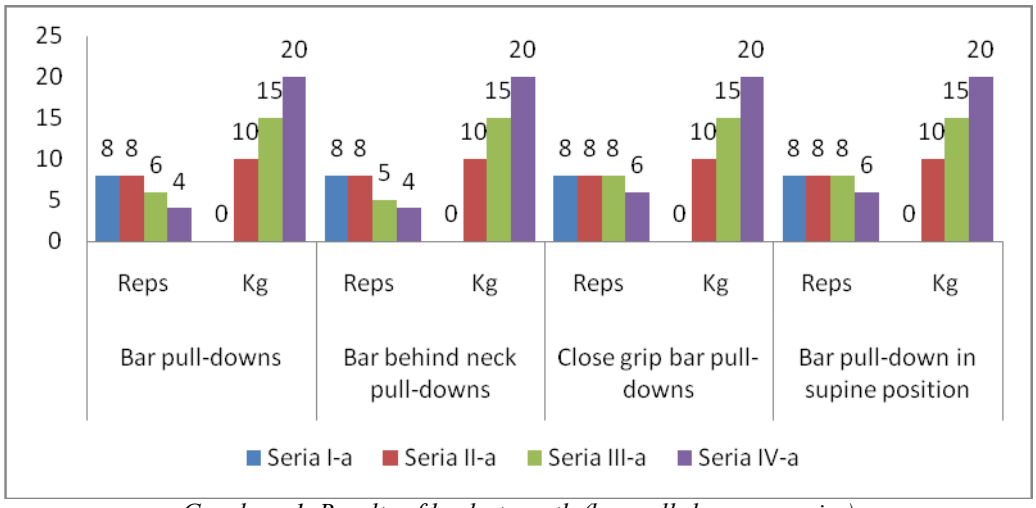
In table no. 3 are summarized the results of control trials meant to evaluate the back muscles strength.

Table no. 4. Results of back strength (bar pull-downs exercise)

	Bar pull-downs		Bar behind neck pull-downs		Close grip bar pull-downs		Bar pull-down in supine position	
	Reps	Kg	Reps	Kg	Reps	Kg	Reps	Kg
1st set	8	-	8	-	8	-	8	-
2nd set	8	10	8	10	8	10	8	10
3rd set	6	15	5	15	8	15	8	15
4th set	4	20	4	20	6	20	6	20
Statist. indices								
Mean	6.5	15	6.25	15	7.5	15	7.5	15
SEM	0.95	2.8	1.03	2.88	0.5	2.88	0.5	2.88
SD	1.91	5	2.06	5	1	5	1	5
Variance	3.6	25	4.25	25	1	25	1	25
Coeff. Var	0.29	0.3	0.32	0.33	0.13	0.33	0.33	0.33

In table no. 4. and graph no. 1 are listed the results of back muscles strength at bar pull-downs exercise, showing the number of pull-downs and the weights used during sets.

In table no. 5 and graph no. 2 are summarized the results of back muscles strength during the cable machine pull-downs exercise, using large grips; they show the number of reps and the weights applied in each set and exercise.

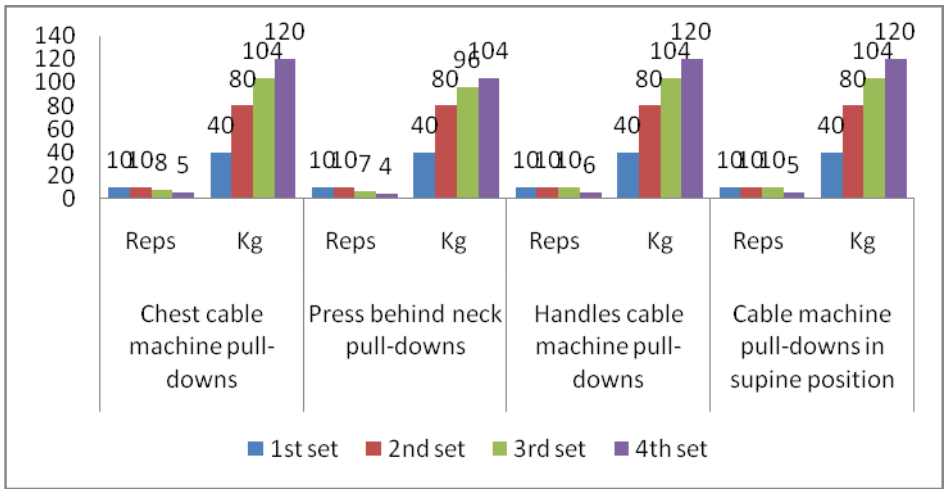


Graph no.1. Results of back strength (bar pull-downs exercise)

Table no. 5. Results of back strength (cable machine pull-downs exercise)

	Chest cable machine pull-downs		Press behind neck pull-downs		Handles cable machine pull-downs		Cable machine pull-downs in supine position	
	Reps	Kg	Reps	Kg	Reps	Kg	Reps	Kg
1st set	10	40	10	40	10	40	10	40
2nd set	10	80	10	80	10	80	10	80

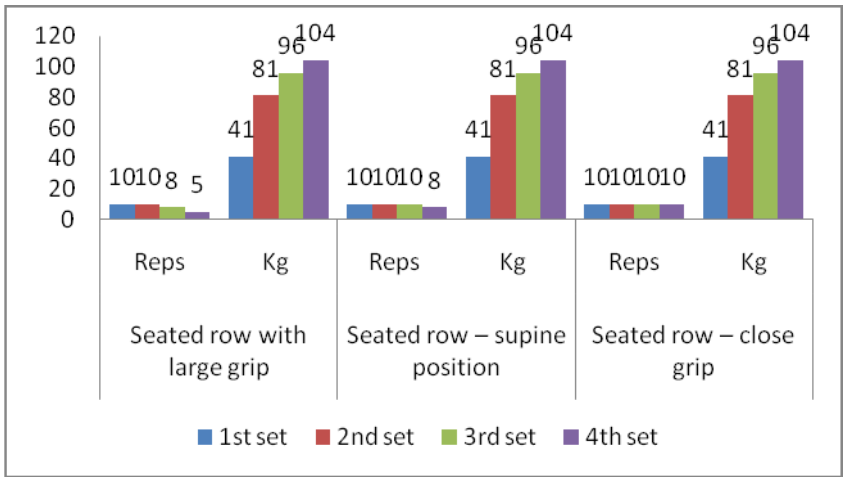
3rd set	8	104	7	96	10	104	10	104
4th set	5	120	4	104	6	120	5	120
Statist. indices								
Mean	8.25	86	7.75	80	9	86	8.75	86
SEM	1.18	17.3	1.43	14.2	1	17.4	1.25	17.3
SD	2.36	34.7	2.87	28.4	2	34.7	2.5	34.7
Variance	5.58	1210.6	8.25	810.6	4	1210.6	6.25	1210.6
Coeff. Var	0.28	0.41	0.37	0.35	0.22	0.41	0.28	0.41



Graph no. 2. Results of back strength (cable machine pull-downs exercise)

Table no. 6. Results of back strength (seated row exercise)

	Seated row with large grip		Seated row – supine position		Seated row – close grip	
	Reps	Kg	Reps	Kg	Reps	Kg
1st set	10	41	10	41	10	41
2nd set	10	81	10	81	10	81
3rd set	8	96	10	96	10	96
4th set	5	104	8	104	10	104
Statist. indices						
Mean	8.25	80.5	9.5	80.5	10.0	80.5
SEM	1.18	14.0	0.5	14.0	0.0	14.0
SD	2.36	28.0	1.0	28.0	0.0	28.0
Variance	5.58	784.3	1.0	784.3	0.0	784.3
Coeff. Var	28.6	34.7	10.5	34.7	0.0	34.7

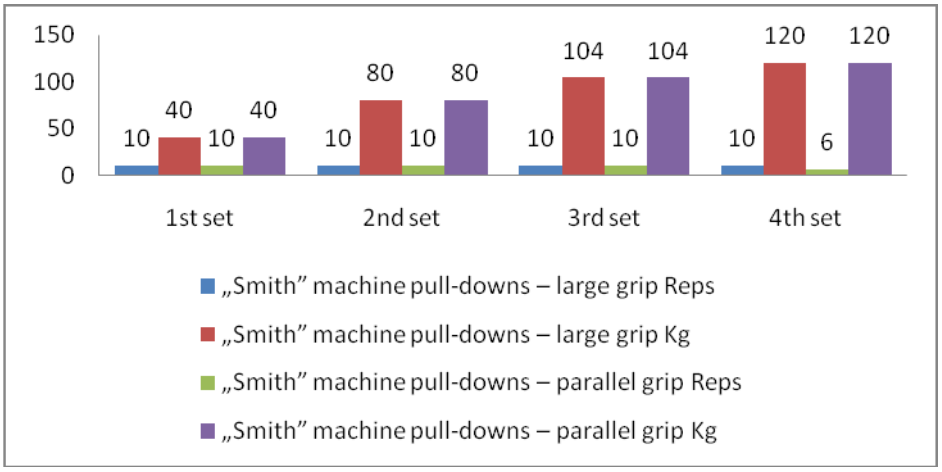


Graph no. 3. Results of back strength (seated row exercise)

In table no. 6 and graph no. 3 are summarized the results of back muscles strength during seated row exercise, using various grips; it shows the number of reps and the weights applied for each set and exercise.

Table no. 7. Results of back strength („Smith" machine tractions exercise)

	„Smith" machine pull-downs – large grip		„Smith" machine pull-downs – parallel grip	
	Reps	Kg	Reps	Kg
1st set	10	40	10	40
2nd set	10	80	10	80
3rd set	10	104	10	104
4th set	10	120	6	120
Statist. indices				
Mean	10	86	9	86
SEM	0	17.4	1	17.4
SD	0	34.7	2	34.7
Variance	0	1210.6	4	1210.6
Coeff. Var	0	0.41	0.22	0.41



Graph no. 4. Results of back strength („Smith" machine pull-downs exercise)

In table no. 7 and graph no. 4 are presented the results of back muscles strength in Smith machine pull-downs exercise, by means of various grips, emphasizing the number of reps and the weights applied in each set and exercise.

Discussions

To highlight the content of training means by alternating grips for back strength development in performance bodybuilding, a case study was conducted in the sports club "Tonik Fitness Club" of Bucharest, applied to an athlete aged 34, practitioner of amateur bodybuilding for the last 4 years.

Regarding the development of back muscle strength, the methodical procedure of grip alternations during the same exercise has been used to increase muscle mass.

Analyzing the training program during workouts, it was noticed that the alternation of grips throughout the same exercise was used in the case of: bar pull-downs, cable machine pull-downs, seated row and „Smith" machine pull-downs.

To check the development of back muscle strength, control trials have been applied, paying attention to the number of reps depending on the load used both during the initial test and final test.

In terms of anthropometric measurements results, we notice a weight of 80kg at initial testing and a decrease by 5 kg at the final testing; the waist is 89cm at initial testing and a decrease by 1.5cm at final testing, with a size of 166cm.

Regarding the control tests results on the development of back muscles strength, it can be noticed that in the case of bar pull-downs were performed 21 repetitions at initial testing with an increase by 3 pull-downs in final testing; in the case of cable machine pull-downs with 80kg load, 31 reps were performed at the initial testing with an increase of five reps in the final testing.

The analysis of the means used during workouts showed that 4 sets have been executed at each exercise, *at bar pull-downs* there were used weights of 10kg,15kg and 20kg; depending on the grip applied, the number of reps increased or decreased, and their average ranged from 6.25 to 7.5 reps per exercise with a load of 15kg.

As for the results of back muscles strength at the *cable machine pull-downs exercise*, we noticed that 4 sets of 10 reps/ set were executed, using a gradually increasing load of 40kg, 80kg, 104kg and 120kg; depending on the grip applied, the number of reps increased or decreased, their average ranging from 7.75 to 9.0 reps per exercise, with a load of 80-86kg.

Concerning the results of back strength at *chair seated row* exercise, it was noticed that three grips were used (large, supine and close), performing 4 sets of 10 reps / set; depending on the grip applied, the number of reps ranged from 8.25 to 10 per exercise, with a load of 85kg.

As for the results of back strength at *"Smith" machine pull-downs* exercise, the average of reps number was 10 reps and a load of 86kg per exercise.

Conclusions

The study highlights the development of back muscle strength by using different grips in the same exercise in performance bodybuilding.

The alternation of grips during the same exercise meant to develop the back muscles strength in bodybuilding workouts will lead to the increase of muscle strength and muscle mass.

The increase or the decrease of reps number depending on the grip and weight used, the effective use of methodical procedures by varying the effort parameters during the back strength workouts will contribute to muscle strength development and to the definition of muscle groups involved in the effort.

An optimum relationship provided between the number of reps and the loads used for each set, by using different grips, will highlight the development of back muscle strength during the same exercise.

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STUDY ON ROWERS' TRAINING LEVEL ASSESSMENT 18 MONTHS BEFORE THEIR PARTICIPATION IN THE OLYMPIC GAMES LONDON 2012. CASE STUDY, NATIONAL INDOOR ROWING CHAMPIONSHIPS, SENIORS, 18.02.2011

SANDA TOMA URICHIANU[1]

Abstract
Background. During 2004-2008 the leap of the individually evaluated rowers or in teams has been quite low. The objective of obtaining medals for rowing at Beijing was not achieved. Male athletes still have not qualified for this great event but the female athletes obtained two olimpic medals including one gold(2-) and one bronze(8+).It is noted that among the nine girls with medals, six have been established („of old age")
meaning that they started training with 18 months before the Olimpic Games. The author presents the results of a contest at the start of the Olimpic cycle for male and female athletes.
Objectives. The scientific argument is the initial training level analysis of the two categories of female rowers: the established and the dedicated holders. At the same time we will determine the degree of training of athletes at the beginning of this cycle.
Organizing and conducting the study. The Senior National Championship on ergometer is the most important contest at the start of the cycle, 18 months before the Games London 2012 Olympics. Athletes are presented after a three-week stage of general physical training in the mountains, followed by three weeks of training on the ergometer.
Subjects. Study groups consist of six established female rowers,6 female rowers that are dedicated holders, and 6 male rowers that are also dedicated holders.They all are components of the Romanian national team and Olympic team.
Results. It reveals the level of training that the two groups are formed and the existing value-difference in sports, and also the assessment of statistical indicators and a possible prediction of the seasons results.
Conclusions. Ensuring a good relationships between the established female rowers and the dedicaded holders female rowers that could holdtogether the two values at a higher competitive benefits.
Keywords: ergometer, rowing, competition, cycle training.

Introduction

Nowadays the sports performance has reached unexpected levels that can not be maintained or exceeded without an adequate knowledge of effort methodology that represents the starting line in high performance. The algorithm for competitive training has an increasing dynamics, complexity and diversity, with a structure meant to expand the knowledge area by introducing new elements that bring a plus to the evolution in competition, by combining and adapting them to the requirements of performance achievement.

The continuous growth of the results in sports and the need to increase the training efforts (A. Nicu, 1999) involves a high standard of morphological potential, warranty of achieving higher performances.

The performances needed at present to win medals in the major international competitions can be achieved only after a well directed and planned selection, started since preschool age and regarded not as a momentary action but as an evolutionary process. The means and methods used in rowing activity should be structured so as to serve the detection of rowers' functional reserves (I. Dospinescu, 2006), enabling us to know and to have some possibilities of prognosis (D. Deliu, 2007) on their development at the final stages of sports training.

All sports show off a large range of performance requirements, some of them specific to the respective sport and others common for all sports. Rowing requires high levels of individual or team efforts, throughout the competition–5:20-7:10 minutes for covering a distance of 2,000 m.

The progress of knowledge regarding the physiology of exercise and the physiology specific to sport, as well as the new knowledge of training methodology (M. Epuran, 2005) are very important tools for sports training and for establishment of its objectives. At the present moment, the coaches are offered real information and values from practice, with which objective assessments can be made in all stages of training.

It must be said that perfect and universally valid testing systems do not exist (A. Gagea, 2000), because each athlete is an individuality, and these individualities, in exchange, form a team of unquestionable value. The coach must know in which way and how much to test each rower. Recent studies show that in fact the progress is increasingly indebted to accessories technology and to sport training process.

Performance does not arise from an agglomeration of facts and events, but is a product of the effects determined by the concentric action (A. Gagea, 2000) of some objective and subjective factors. In sport science, an important step forwards was made through the inventory and then the measurement of these indices, making use of various procedures of objectification and interpretation.

[1]Ecological University of Bucharest, Faculty of Physical Education and Sport, ROMANIA
Email: sanda.toma@yahoo.com
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Therefore, performance sport represents a pedagogical process by methodology, an educational act, through its structural principles and the effects captured in behavioral plane, in athlete's attitude. The inventory of indices (C. Malis, 2008) that contribute constantly to sports performance achievement is an open operation whereas observations and profound insights into this problem may show an increase of those ones.

To further enhance the performances, the investigation of any aspect that could help coaches and methodologists in their work with the athletes should not be neglected.

These factors are very numerous and it is not possible to make a complete list of them virtually. In the same time, the majority of factors are closely related together, influencing each other.

Of course, we can talk about and we can analyze a lot of factors that have a high importance in the successful rowing, but according to the Romanian rowing technicians the priority issues in reaching performances of international value are represented by the achievement of training quantitative indices of high quality and by a selection of human material, all these confirming the requirements of performance rowing (S. Urichianu-Toma, 2010).

We believe that not only quantitative training indicators are important for performance rowing, but also the indicators of active recovery after exercise and the rate of progress derived from the native talent of the athlete. In connection with the talent, we notice the fact that the specialty literature is concerned not only about athlete's talent but also about coach's talent, as a „sine qua non" condition for performance.

Athletic performance represents a Fuzzy type function (A. Gagea, 2000) of a multitude of factors such as: value of biological material, sports training exercise, material investment to provide sports training stages in terms of using the latest scientific concepts of training and recovery, by means of an effective management.

Purpose and objectives. The aim of the study is to identify the shortest paths to high performance, with low costs and consumption, achieving an increased rate of promotion and high performances, avoiding the risk factors. The scientific argument is represented by the analysis of the initial training level of two groups of female athletes, consecrated and titular ones in individual and crew events. At the same time, we shall determine the athletes' training level at the beginning of this macro-cycle.

Subjects. The groups of study are formed of consecrated athletes ("old") and titular athletes ("young"). All the female athletes are members of the Romanian Olympic Rowing Team.

Place of the research. The research was conducted at National Sports Complex (CSN) Snagov, in the village of Silistea Snagovului

Methods. The following methods of research have been used for this study:

- Method of observation
- Method of documentation
- Statistical-mathematical method

Study organization and conduct. The National Indoor Rowing Championships for seniors is the most important competition at the beginning of a macro-cycle, 18 months before the Olympic Games of London 2012. The athletes compete after a three weeks stage of general physical training in the mountains, followed by three weeks of indoor rowing.

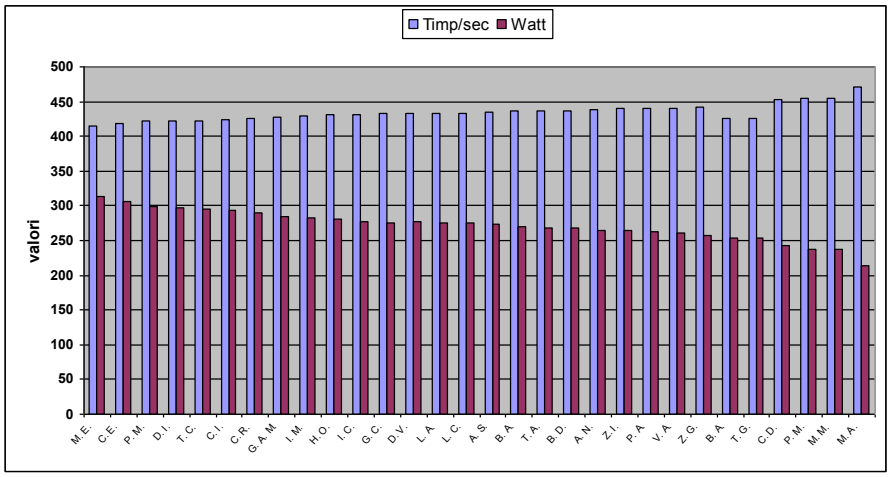
Interpretation of performances

Table no. 1. **Women seniors' individual results**

No.	Full name	Club	Time /min	Time/sec	Watt
1	M. E.	CSA Steaua	06:54.8	414.8	314
2	C. E.	CS Olimpia	06:58.4	418.4	306
3	P. M.	CSM Iasi	07:01.6	421.6	299
4	D. I.	CSM Iasi	07:02.1	422.1	298
5	T. C.	CS Dinamo	07:02.8	422.8	296
6	C. I.	CS Dinamo	07:04.4	424.4	293
7	C. R.	CSA Steaua	07:06.4	426.4	289
8	G. A. M.	CS Dinamo	07:08.2	428.2	285
9	I. M.	CSA Steaua	07:09.3	429.3	283
10	H. O.	CS Olimpia	07:11.1	431.1	280
11	I. C.	CS Dinamo	07:11.7	431.7	278
12	G. C.	CS Olimpia	07:12.7	432.7	276
13	D. V.	CSM Calarasi	07:12.7	432.7	277
14	L. A.	CS Olimpia	07:12.8	432.8	276
15	L. C.	CS Dinamo	07:13.7	433.7	275
16	A. S.	CSA Steaua	07:14.5	434.5	273
17	B. A.	CS Dinamo	07:16.0	436.0	270

18	T. A.	CS Dinamo	07:16.7	436.7	269
19	B. D.	CS Farul Constanta	07:17.1	437.1	268
20	A. N.	CS Dinamo	07:18.9	438.9	265
21	Z. I.	CSA Steaua	07:19.4	439.4	264
22	P. A.	CS Dinamo	07:20.2	440.2	263
23	V. A.	CS Dinamo	07:21.0	441.0	261
24	Z. G.	CSM Iasi	07:22.7	442.7	258
25	B. A.	CS Olimpia	07:25.0	425.0	254
26	T. G.	CS Dinamo	07:25.8	425.8	253
27	C. D.	CS Farul Constanta	07:32.2	452.2	242
28	P. M.	CSA Steaua	07:34.6	454.6	238
29	M. M.	CS Farul Constanta	07:34.9	454.9	238
30	M. A.	CS Dinamo	07:51.1	471.1	214
X- arithmetical mean				437.42	271.83
Em- average error				2.19	3.9
S- standard deviation				12.04	21.8
Cv- coeff. Variab.				2.77	8.05
r-coeff.correlation				0.90	
t Statistical				11.169	
P				P<0.001	

In table no. 1 are summarized the time values recorded in the National Indoor Rowing Championships for Seniors. We mention that the results are recorded in minutes, seconds and watts, finals. The standard deviation is 12.04 for time and 21.8 for the power expressed in watts. The coefficient of variability is 2.77 for time and 8.05 for power at a P<0.001.



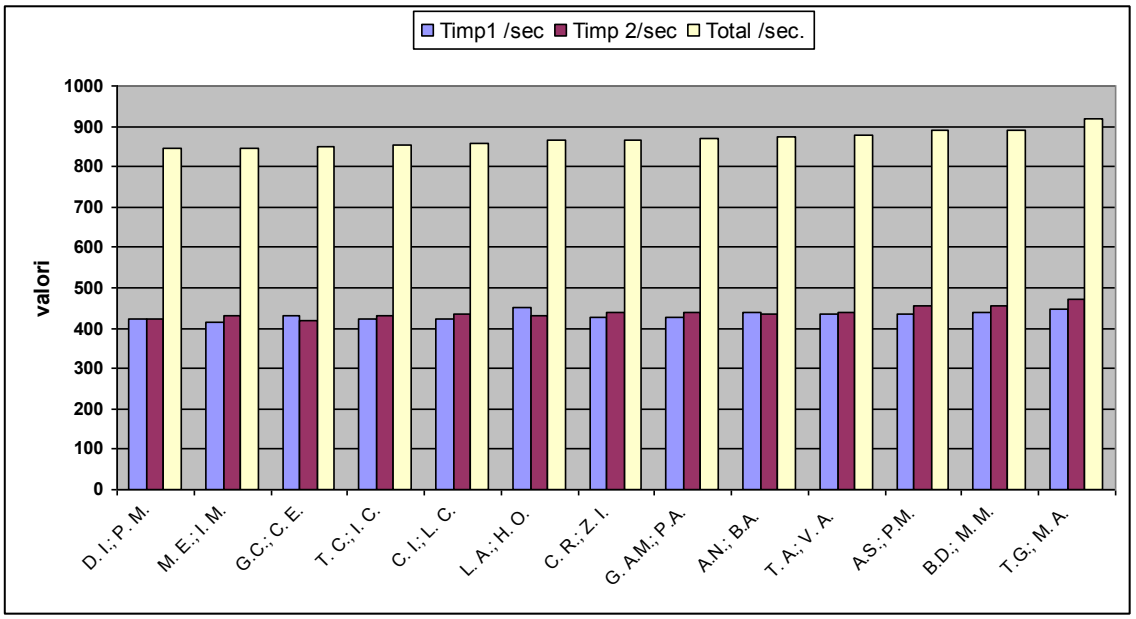
Graph no.1.

Graph no.1 highlights the homogeneity in the training of Senior team and the fact that the first half of athletes have very similar values. We notice that between the ranked athlete M.E., whose result is 6:54.8 min/414,8 sec. and the power is 314 watts and the last athlete in the ranking, M.A. whose result is 7:51.1min/471.1sec and the power is 214 watts.

Table no. 2. Women seniors' results per crews

No	Full name	Club	Time 1/ min.	Time1 /sec	Time 2 /min.	Time /sec	Total/ min	Total /sec.
1	D. I.; P. M.	CSM Iasi	07:02.1	422.1	07:01.6	421.6	14:03,7	843.7
2	M. E.; I. M.	CSA Steaua Buc	06:54.8	414.8	07:09.3	429.3	14:04.1	844.1
3	G.C.; C. E.	CS Olimpia Buc	07:12.7	432.7	06:58.4	418.4	14:11.1	851.1
4	T. C.; I. C.	CS Dinamo Buc	07:02.8	422,8	07:11.7	431.7	14:14.5	854.5

5	C. I.; L. C.	CS Dinamo Buc	07:04.4	424.4	07:13.7	433.7	14:18.1	858.1
6	L. A.; H. O.	CS Olimpia Buc	07:12.8	452.8	07:11.1	431.1	14:23.9	863.9
7	C. R.; Z. I.	CSA Steaua Buc	07:06.4	426.4	07:19.4	439.4	14:25.8	865.8
8	G. A.M.; P.A.	CS Dinamo Buc	07:08.2	428.2	07:20.2	440.2	14:28.4	868.4
9	A.N.; B.A.	CS Dinamo Buc	07:18.9	438.9	07:16.0	436.0	14:34.9	874.9
10	T. A.; V. A.	CS Dinamo Buc	07:16.7	436.7	07:21.0	441.0	14:37.7	877.7
11	A.S.; P.M.	CSA Steaua Buc	07:14.5	434.5	07:34.6	454.6	14:49.1	889.1
12	B.D.; M. M.	CS Farul C-ta	07:17.1	437.1	07:34.9	454.9	14:52.0	892.0
13	T.G.; M. A.	CS Dinamo Buc	07:25.8	445.8	07:51.1	471.1	15:16.9	916.9
X- arithmetical mean				432.09		438.69		869.24
Em- average error				2.89		4.01		5.81
S- standard deviation				10.4		14.4		20.9
Cv- coeff. Variab.				2.41		3.29		2.41



Graph no. 2. **Results of Women Crew - seniors**

In graph no.2 can be noticed the athletes' results in double crew. The close values of the crew results give homogeneity and a small difference between the first and last crew. The most valuable double crew, D.I. and P.M., recorded 14:03.7min/843.7sec while the last ranked time is 15:16.9min/916.9sec, achieved by the athletes T.G. and M.A.

Interpretation of results

The study reveals the training level of the two formed groups and the athletes' existing difference of value, the assessment of statistical indices and a possible prediction of the season results. There is a natural development with improvements in performance for most subjects.

The indoor rowing (ergometer machine trial) is one of the most important events in athletes' testing. The specialty literature motivates a high

degree of correlation between ergometer machine trial and the tests on water, in boats.

As group indices, one must notice the fact that the athletes are in the period of performance growing, which could anticipate the interpretation of results in the competitions to come.

We are tempted to interpret some of the qualitative data of the initial stage training process without, however, ascribing a certain predictive power to them. Thus, during each of the two trials we observed significant oscillations, probably due to the small training stage of subjects in this time of the year. The objectivity of indoor rowing trial on a distance of 2000m seems to be questionable, however the specialty literature reveals that the ergometer machine trial has the highest correlation coefficient in relation to specific testing in shells in the case of consecrated athletes.

Conclusions. Ensuring a relationship between consecrated and titular athletes' training can hold together the two values at the level of a high competitive performance. The specifics of this sports branch practice requires specific and nonspecific ways and means which lead to high performance. The classic technologies combined with the new, modern ones, aided by teams of technicians (coaches, doctors, biochemists, therapists, masseurs, ship carpenters, etc.), bring to the forefront of theorists the necessity of qualitative and quantitative changes. All this complex mechanism applied so far can be modified and refined, with real possibilities for achieving high value performances in the major competitions.

We believe that the ability to prepare and compete is a complex factor in achieving performance in rowing. Work physical capacity is a major factor in rowing. Large testing actions are needed to form a group of athletes with potential for high performance rowing practice, because it is likely that only a small percentage among the tested persons meet the requirements.

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STUDY ON THE NUMBER OF STUDENTS INVOLVED IN A SPORTS ACTIVITY IN PRIMARY SCHOOL AND GYMNASIUM, IN ALBA IULIA

BELIZNA COSTEL[1]

Abstract
This study concerns the number of students in the primary school and gymnasium, involved in a sports activity, and aims at determining the dinamic in practising sports and the implication of the parents and teachers. The questionary method was used in order to achieve results and it contained 6 questions and was applied on 3999 pupils. Once the answers were given and analised, the hypothesis was not confirmed. The number of children practising higher performance sports is decreasing and fewer people are doing sport for their health nowadays: 20 - 30 % persons in the 8th grade have a medical excuse and the parents and the teachers don't take interest in including children in this kind of physical activities. Also, not even the highschool years didn't bring an increasing interest in sports.
Key words: activity, students, included

Introduction

The limitation of practicing physical exercises to the activities comprised in sports classes and sometimes extra class activities materializes in restraining the benefits that physical exercises can offer our health, balanced development, disproof of defective attitudes, accomplishment of relaxation and re-creation (Ghid metodologic, 2006). Human health mostly depends on one's implication in sports activities, which are fairly considered to be elements that sustain and build up the organism (Ghid metodologic, 2007).

Involving children in practicing sports for health and for high performance represents the product of parents', teachers', trainers' and doctors' impulse creation (Ghid metodologic, 2006). The foreknowledge of the number of children involved is a way of appreciating health and education and that's the reason that determined this study. Guiding children to practicing sports represents a necessity imposed by the very features of nowadays society creation (Ghid metodologic, 2007)..

This study tries to answer one of society's present problems, namely "involving children" in a sports activity, a habit-forming activity, with multiple valences.

The objectives of the study:

This fact-finding study of the theme has had the following objectives:

- Knowledge of the dynamic of the number of children involved in practicing physical exercises, within a well organized activity, outside school;
- Highlighting the factors that subscribe to including students in sports activities;
- Identifying the number of students that are actually practicing sports for their health, on one hand, and the number of those who are medically excused, on the other hand.

The hypothesis of the research:

The knowledge of the dynamic of the number of children involved in practicing physical exercises is the initial point in identifying the positive factors in children's activity.

Beginning with the presumption that the sports activity is an activity that has healthy effects on the development of human behavior, we framed the following hypothesis:

- The number of students involved in higher sports activities is increasing from one grade to another;
- More and more children are practicing sports activities for their health;
- The parents and the trainers are preoccupied with including children in sports activities;
- Children's interest in sports activities is increasing in the final grades;

The knowledge of these aspects may be a starting point in guiding and including more and more students in practicing physical exercises.

Research procedures and methods:

The subjects:

The research was realized on 3999 students in Alba Iulia, with the real help of elementary teachers, sports teachers and principals (School no. 2 - 298 students, School no. 6 - 689 students, School no.1 - 970 students, School no. 3-718 students," Mihai Eminescu "School - 475 students, School no. 9 - 725 students, and "Korea, Closca si Crisan"

[1] „1 Decembrie 1918" University, Alba-Iulia, ROMANIA
Email: costelbelizna@email.ro
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College -126 students).

The methods:

In order to accomplish and to check-up the study we have been using the questionnaire based on 6 questions with simple, exact answers. The questionnaire contains appreciation indicators (High school/School..., Grade..., No. of students...), and questions (How many students are practicing unpaid high performance sports?, How many students are practicing sports especially for their health?, How many students are medically excused?, How many students were encouraged by their parents towards high performance sports?, How many students were selected by a specialized teacher?).

The results - the refinement, the analysis, the interpretation and the graphic representation:

The answers given to the questions of the questionnaire, by those 3999 students, were grouped on grades and can be found in the chart below:

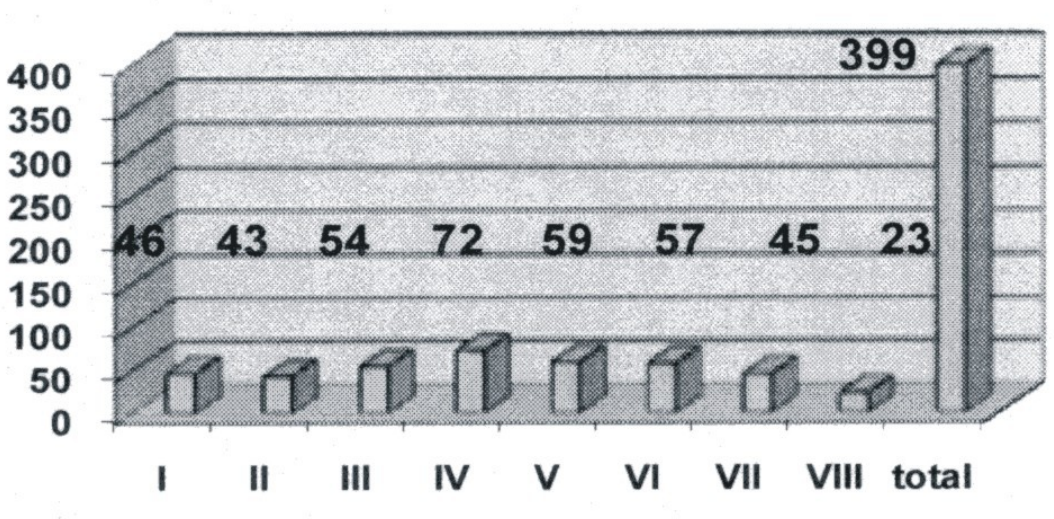
Tab. 1 Number of students according to grades and questions

Grade	No. of students according to grades and questions						
	Sun	1	2	3	4	5	6
1st	586	46	29	0	8	26	24
2nd	484	43	27	2	5	22	32
3rd	496	54	26	6	9	33	50
4th	559	72	33	3	11	31	67
5 th	496	59	48	5	36	17	60
6 th	450	57	25	7	39	16	52
7 th	464	45	16	1	21	21	45
8 th	464	23	10	3	57	8	24
Sun	3999	399	214	27	186	174	354

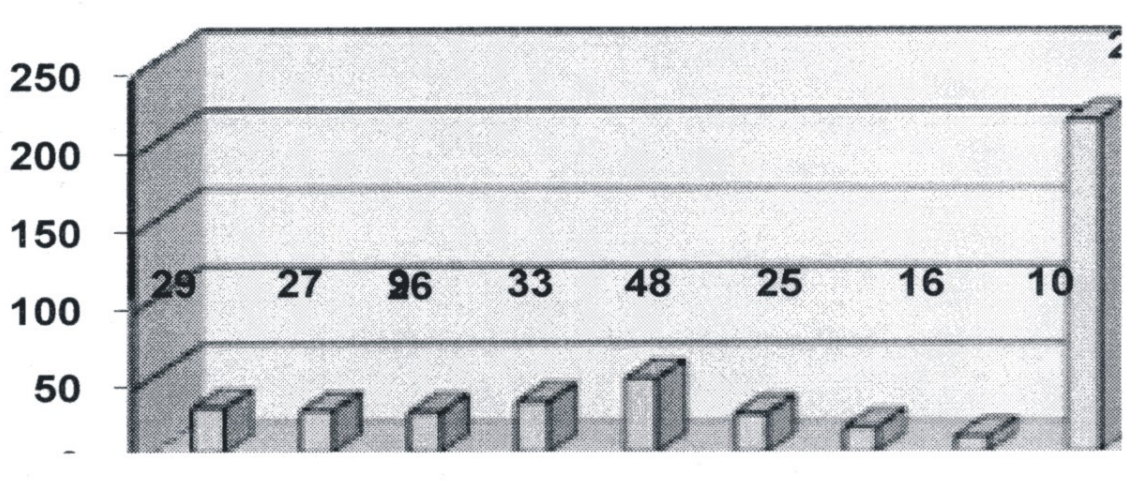
Analyzing the answers given to the questions, one can notice the following aspects:

- Question no. 1 - How many students are practicing unpaid high performance sports? 399 students (9, 97%), graph no.l, answered that they are practicing this kind of sports. The highest number of students included here is in the 4th grade, and the lowest number is in the 8th grade. Actually, the number and the percent is lower, compared to the great number of students, and it rests mainly with the sports teacher's not inferring in guiding children with qualities towards high performance sports, as well as the absence of the affirmation perspective due to material basis, and also the popularization of high performance sections, which was never done.

Graph 1 - The number of students involved in unpaid high performance sports activities



Graph no. 2 — The number of students involved in paid high performance sports activities



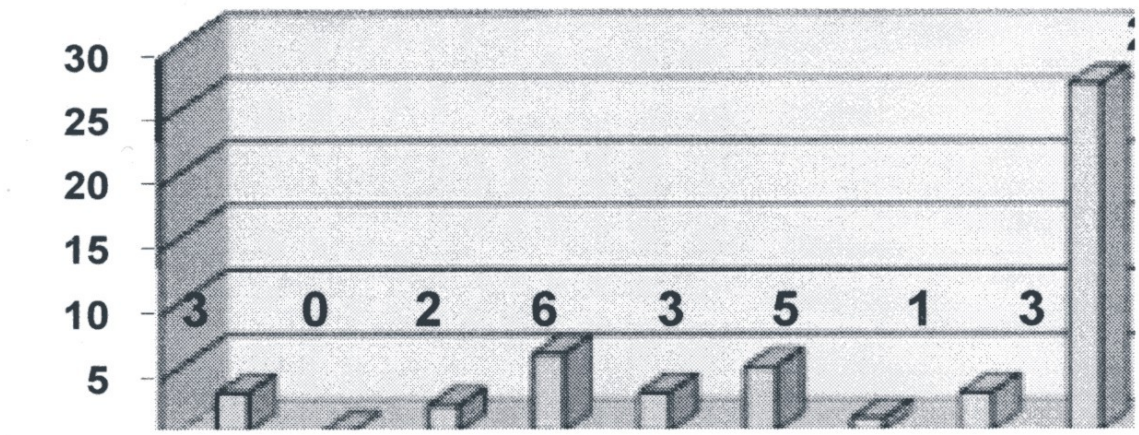
➢ Question no. 2 - How many students are initiating themselves in paid sports? 214 students (5, 35%), represented in graph no.2, are initiating themselves in sports, and they are paying a *tax* for it. Again, one can notice a low percent of the children doing this, because of their families' financial possibilities. The highest number is in the 5th grade, and it is getting low in the 8l grade. Comparing the number of students that are practicing paid and unpaid high performance sports, we can determine that the unpaid kind is bigger.

➢ Question no. 3 - How many students are practicing sports especially for their health? (Graph no. 3) 23 students, meaning 0, 5% are doing so. The extreme low percent, compared to the necessities is determined by spending most of the time in front of the computer, or going out with friends. This percent highlights the fact that our teenagers are not aware of the importance of the physical activities for their health.

➢ Question no. 4 - How many children are medically excused? (Graph no. 4) 185 students, that is 4, 62% are medically excused. The number of this kind of children is pretty high, taking into consideration the fact that they are dealing with serious health problems. We can record that the concern for physical and psychical development, by guiding children to practicing sports, is almost inexistent. More tragic is the fact that parents ignore this aspect, and teachers are not enough involved. Physical activity for health is especially practiced by children having health problems, and which are guided towards regenerating exercises and physical reconstruction. One can easily notice that from the 1st to the 4th grade, the number of

➢ the medically excused students is lower, due to the elementary teachers, who often turn Mathematics and Romanian classes into sports classes. In this way, parents don't have to get a medical excuse for their children. Beginning with the 5th grade the percent of medically excused students is growing progressively, and in some schools it's getting to 20% - 30%.

Graph no. 3 - The number of students practicing sports for their health



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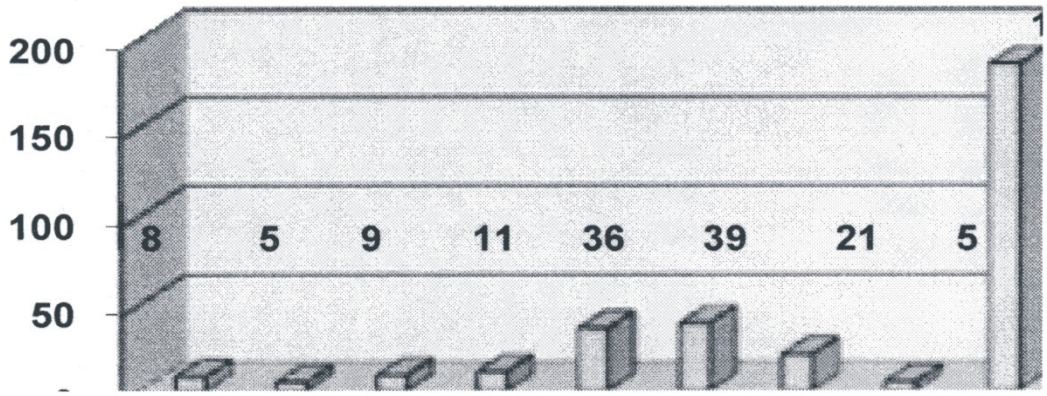
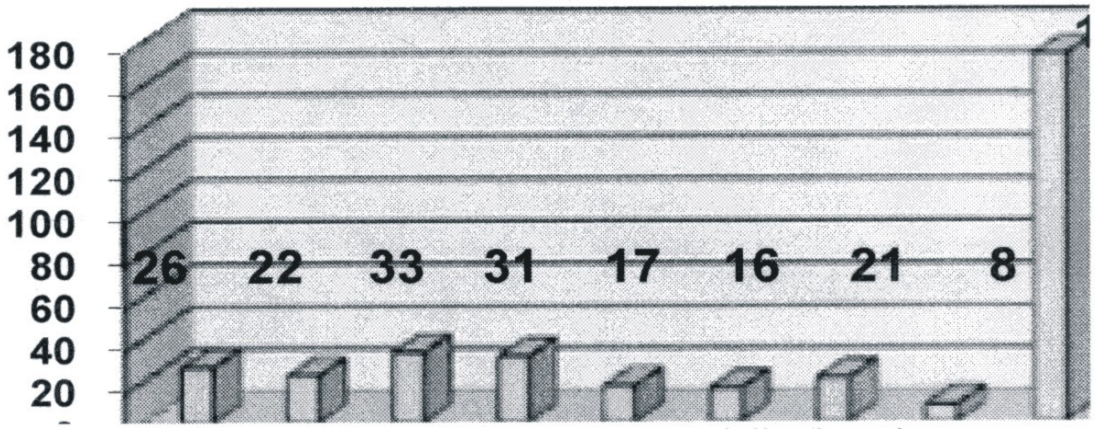
Graph no. 4 - The number of medically excused students



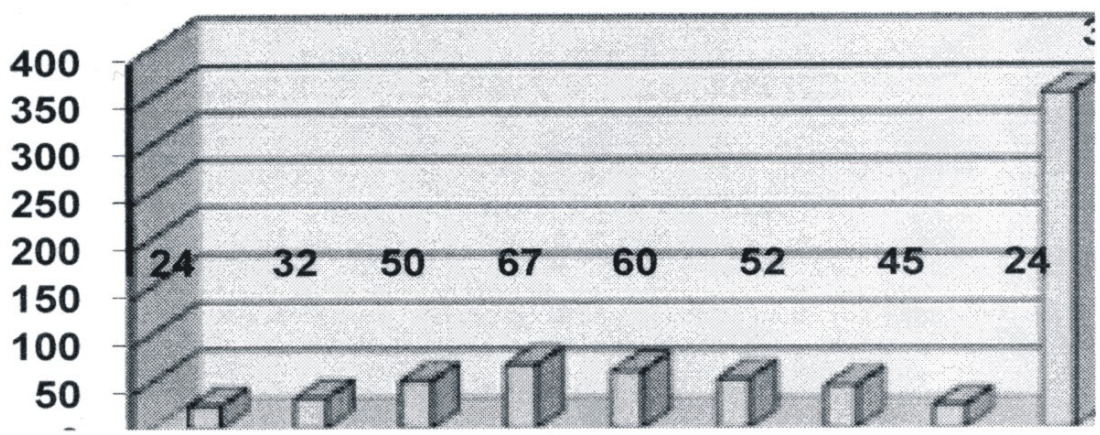
➢ Question no. 5 - How many students were encouraged by their parents towards high performance sports? Graph no. 5; only 174 students, that is 4,3% were encouraged by their parents in doing high performance sports. We learn from here that very few students have their parents support, and the cause is the fact that the parents don't notice the child's aptitudes for sports, and they are not working with the sports teacher in order to be informed. There are also situations when parents are encouraging and sustaining their children in practicing high performance sports, they wish for this very much, but, on the other hand, as time passes they discover that their children don't have the requested physical qualities. There also can be found the situation when what parents desire doesn't correspond to what children desire. Another situation is that of the children discovered by their teachers, guided towards a high performance sports, but parents' options are different, in the way of guiding them towards other domains. In the 5th and the 6th grade we can find most of the children guided towards the high performance sports.

➢ Question no. 6 - How many students were selected by a specialized teacher? (Graph no.6) the answer shows that 354 students, i.e. 8, 8% were selected by a specialized teacher. The number of this kind of students is so low because teachers are not involving themselves in discovering talents, also because of the deficient material basis, and the lack of local competitions, where children could reveal their qualities. One can also notice that most of the children involved in performance groups selected by specialized people.

Graph no. 5 - The number of students guided by their parents towards high performance sports



Graph no. 6 - The number of students selected by a specialized teacher



The conclusions and the premises of the longitudinal, fact finding study

Analyzing the answers we could learn the following conclusions:

1. The hypothesis *that from one grade to another the number of students involved in high performance sports activities is growing,* was half confirmed, because it is getting low in the 7th and the 8th grade. The 9,97% percent of the children practicing unpaid high performance sports, is pretty low, and is mainly due to: uninvolved sports teachers in guiding them, the absence of the affirmation perspective, due to a defective material basis, and also, the popularization of high performance sections, which was never done. The 5, 25% percent of the children practicing paid high performance sports is low, due to the lack of financial possibilities of the families. One can notice that the highest number is in the 5l grade, and it is getting low in the 8th grade. Comparing the number of those who are practicing paid high performance sports and those who are practicing unpaid high performance sports, we can say that the ones who don't pay predominates.
2. The hypothesis that *more and more children are practicing physical exercises for their health, and fewer are medically excused,* was infirmed. The 0,57% percent of the children that are doing sports for their health is extremely low, related to nowadays necessities, which are determined by spending most of the time at home, preparing homework, or playing on the computer. This aspect reveals the fact that our children are not aware of the importance of the physical exercises as health is concerned. The 4, 62% percent of the medically excused students is high, and is progressively growing in the 8th grade, getting to 20% - 30% percent in some schools. The causes that determine this may be found in: unattractive activities, the excessive protection of the parents, the lack of education in what health is concerned, etc.;
3. The hypothesis that *parents and specialized teachers are preoccupied with including children in sports activities* was not continued, the 3, 4% percent ot the students guided by their parents towards high performance sports, is very low, a little bit higher in the 5th and the 6th grade. The number of 354 children, representing a percent of 8, 8% children selected by a specialized teacher to practice a high performance sports, is also low. This often happens because teachers are not involved in discovering talents, a defective material basis, the lack of local competitions where children can reveal their talents.
4. The final hypothesis that *in the final grades students' interest in sports activities is growing* was also infirmed. This aspect underlines that at this age, children usually have other concerns.

We may conclude by saying that everyone who is responsible with attracting children in sports activities and physical exercises for their health - parents, teachers and other relevant factors, needs an impulse.

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STUDY ON DEVELOPMENT OF FORCE THROUGH ATHLETICS SPECIFIC MEANS AT SEVENTH CLASS

CICMA IOAN TEODOR[1], MEREUȚĂ CLAUDIU[1]

Abstract
Purpose. The purpose of this paper is to present and apply a series of specific athletics methods and means, to force development and demonstrate them efficiency in achieving some purposes and objectives of the school physical education, namely the development indicators of the driving qualities force growing, and to contribute to research activities enrichment, of the physical education and school sport domain.
Methods. Driving qualities are features of body, concreting in to perform ability actions, of moving with some speed, force, resistance and skill indices (S.F.R.S.).There was used circuits with intervals, with repetitions, weightlifter method, power-training method and isometric contraction.
Results. The results of study shows that the methods used has succeeded growth indices of the force development**.**
Conclusions. The hypotheses was checked and the intended purpose was reached because of rigorous and scientific activity planning, in cicle of lessons what was precise drawn up. Using appropriate means and following the results of initial and final tests was observed an increase of the indices of force development.
Key words: force, development, means, athletism.

Introduction

As the instructive-educational process, physical education is a social activity designed and carried out to improve physical development, and driving capacity of the practitioners of physical exercises, depending of the age and sex, social integration requirements, specific at one profession, etc.

Physical education is available an extremely large number of physical exercises, adapted and differentiated from al subsystems and variables, assuming that the practice systematic, continuous and by the well defined scientific rules of these exercises **(**C., Albu si colab., 2000).

Physical education carry on in among young school generation is the best organized subsystem, its level, existing teachers with specialized training in teaching physical education, as a compulsory discipline, specific programs, various forms of organization and practice physical exercises by the students and their performance evaluation, based on fixed criteria and samples **(**C.,Filip si colab., 2002)

Physical education and sports, represents

and constitute a constant and continuous, for all the factors responsible for the education of the young generation.

Physical education activities follow developing and improving the physical side (biometrical), of the personality, but favourably influence and performance activities **(**N., Ionescu, V., Mazilu, 2005).

Ideal of physical education in school allow determines of the educational goals, them concretising on a different planes and levels general prescriptions of the ideal (E., Scarlat, 1981).

The purpose of the physical education in schools, it is the development of individual personality, in accordance with society requirements from acquisition of autonomy, efficiency and balance with the natural and social environment, it can be defined in two ways, namely:

-- strategic, which ensures on long term of development area on long term;

-- practical, which basically sets up the main actions in a defined historical period (E., Scarlat, M. B., Scarlat, 2002).

School physical education aims, represents the materialization of the objectives in all their aspects, namely: somatic, functional, physical-motoric, cognitive, affective and social (E.,Scarlat, P., Dragomir, M., Hondrilă, I., Mironescu, 2008).

The purposes can be concretizing in a variety of objectives, what targeting influence personality whole.

The current stage, leads to the terms of efficiency, development, evolution, progress, in all spheres of social activity.

Locating this terms to the content of physical education class, stem part of the most important basic requirements, to be met, to conduct an effective physical education class.

Content

It is well known and demonstrated that only by measuring and then judging, can be the size of a phenomenon or activity application, that is intended to be studied, controlled, especially directed towards an finality.

Hypotheses, are temporary solutions to problems of scientific research.

The assumptions of this paper are as fallows:

-- If the action may reveal an increase to level of develop of driving quality, force,

[1]Faculty of Physical Education and Sport, Galați University, ROMÂNIA
Email: cicmadoru@yahoo.com
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materialized by the results obtained by students, to control samples.

-- If the difference between the methods and means used, between control group and experimental group, will to obtain an improvement to the indices of force development and other driving qualities, because without the development of other basic driving qualities we can not approach only one development, in this case, the force.

Deep knowledge of morpho-functional and psychological particularities of each child, of each group, or classes with we work, represent the only way to allow point out for the two mistakes, more frequent in physical education and sports activities, namely over-taxed body through over-exaggerated efforts, on the one hand and excessive caution, because of that the training is maintained at a lower level of student possibilities, on the other hand.

Secondary education is a new step, upper primary education, fact witch determines by the student's adaptation efforts, especially in the new system of organization, witch without exception, consisting in transition from mode teaching all school disciplines, to one teacher , to separate disciplines teaching by several teachers.

Secondary education finalities, may be classified as:

-- insurance for all students to a standard comparable to European Education;

-- formation at the students of the ability to communicate effectively in real situation, using the romanian language, mother language, foreign languages and various specialized languages;

-- formation and developing of adaptation and integration capacity in community;

-- formation of positive attitudes in relation with the social environment; of tolerance, responsibility and solidarity;

-- ensuring optimal educational and vocational orientation in relation to the students aspiration and skills;

-- formation of the capacities and motivations necessary learning in the a changing society conditions;

Realization of the objectives of school physical education, is possible only if it systematically follow final completion some finalities of the primary importance for the motor training, such as motor skills development.

In the professional activity of a any citizen, especially in the athletic training, development level reached by driving qualities has a great importance.

We can say that entire motor actions variety make by individual, in the daily activity or sports, is carried out properly or less correct, directly related to the degrees development of the motor skills.

Motor actions make mainly on account of four basic motor skills namely: speed, skill, strength and endurance and on account some manifestation forms of their.(Gh. Mitra, Al. Mogoş 1977)

Of driving qualities own them and specific certain parameters, through witch we can determine the value and contribution to the achievement of each driving qualities at realization of a different driving actions.

Thus, for determine the value of force, used as a standard parameter – load, for speed – movements rapidity, for resistance – action duration, and for skill – complexity and precision of action.(E. Firea 1979)

Objectification of the process for developing to the driving qualities, determine one a more precise ordering of the teacher, oblige him to continue searching, to find the most effective means and forms of activities organization, ensure a greater efficiency in achieving planned objectives.

In any school, even those who do not have a optimal material basis, on any time, motor skills development, can be done in the level of curricula requirements.

Driving qualities, are divided into three main categories, namely:

-- basic motor qualities: speed, skill, force and resistance, some authors adding mobility and flexibility;

-- specific motor qualities: are those involved with priority in the practice sports branches and contests;

-- special or intermediate motor qualities: mobility and flexibility.(Gh. Mitra, Al. Mogoş 1977)

"Driving qualities are features of body, materialized in the ability to perform movement actions, with some indices of speed, force, resistance and skill."(E. Firea 1979)

Driving qualities are native character, whose initial manifestation level, depends on the genetic hereditary fund.

Force, easier perfectly driving qualities, can be taught systematically from nine, ten ears, having a upward trend and a maximum possibility for improvement.

Force is a body's ability to overcome resistance, by muscular effort or possibility to lift, to transport, to overcome, to pull some weight on muscle contraction.(Gh. Mitra, Al. Mogoş 1977)

Muscular force, is one of the most important driving qualities, frequently required in motor activities, there are no movement that can be done without force, without it, the possibilities for learning motor qualities, are practically nonexistent.

Force, like other motor qualities otherwise, involves a several forms of manifestation, forms that can be classified as by the numbers of muscles fibbers involved:

-- general force, in witch participate of most important muscular groups of the body;

-- specific force (segmentary), in witch participates by contraction, to overcome a resistance, only one or a several muscles groups;

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After muscle contraction character, the force can be classified into:

a). static force (isometric), witch by contraction muscle fibber length does not change, engaged in making motors action or act;

b). dynamic force (isotonic), witch by contraction, length of muscles fibbers involved in the effort, changes;

c). joint force, combined, when to overcome resistance, be effect dynamic and static contractions in report with drivers acts and action those;

Force development method.

First, we work to increase force of all muscle groups, involved in fixing and maintaining in good posture, of a segments as whole body, in this sense, one drive priority, giving to the development of back and abdominal muscles.

To develop the force we use two main groups of exercises, namely:

a). exercises witch defeats their body weight (push-up's, jumping, climbing, exercises to develop force abdominal and back muscles);

b). Overcoming external resistance exercises, using different objects with different weights (dumbbells, sand bangs, sticks, resistance to a partner, different devices such as: gymnastics bank, weightlifting, etc.).

The experiment was conducted during as 1 october 2010 – 2 mars 2011.

The tasks of this work were:

-- information and documentation on the subject;

-- choice of the school unit and the group of students witch experiment was performed;

-- establish a representative set of control samples witch to be verified the research hypotheses;

-- "harvesting" and noting the results obtained at initial testing;

-- sustain the final testing and evaluating results;

-- processing and interpretation data, of statistical and mathematical terms;

-- graphic representation;

-- presentation of conclusions and recommendations.

Research methods and techniques

Research methods and techniques used in this paper were documentation, references study, observation, experimental study, methods of data processing and interpretation (statistical-mathematical and graphical).

The statistical and mathematical procedures have allowed the description and characterization, of objective based (digital) of the various data collected, were represented measured indicators.

Statistical indicators used in this experiment were:

-- The Arithmetic Average:

$$\bar{x} = \frac{x + x_2 + x_3 + \dots + x_n}{n}$$

-- Standard Deviation:

$$S = \sqrt{\frac{\sum (x_i - \bar{x})}{n-}} \quad \text{sau} \quad S = \sqrt{\frac{\sum d^2}{n-}}$$

-- The Coefficient of Variation (Cv):

$$C_v = \frac{S \cdot 100}{\bar{x}}$$

Measurements and tests:

To demonstrate the growth indices of force development, by effective means, appropriate and related to the age and sex of the students, was choice a relevant system control samples for this experiment, namely:

1). Push-up's for checking as a upper limbs, how many of 15;

2). On lying back, legs blocked on the trellis, raising and lowering of the body (abdomen), for 30 seconds;

3). Standing long jump (S.L.J.);

4). Traction in arms, how many of 10 executions?;

5). Ten-steps jump;

TABLE OF INITIAL AND FINAL RESULTS OF TESTS Boys **Table nr.1**

SUBJECTS	Push-up's		Abdomen (30 sec.)		S.L.J. (cm.)		Traction in arms		Ten-steps jump	
	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf
S1	6	7	19	21	163	165	5	6	15	16
S2	7	9	16	`18	165	167	4	6	14	16
S3	5	6	17	19	165	167	5	6	14	15
S4	7	9	15	17	160	164	6	7	15	17
S5	6	8	18	20	163	165	5	6	13	15
S6	7	10	19	21	164	167	6	8	12	14
S7	9	11	18	20	162	164	4	5	15	16
S8	6	8	17	18	166	169	7	7	17	17
S9	5	6	16	19	162	164	6	8	18	18
S10	6	8	19	21	168	170	5	7	16	18
Σ=	64	82	174	194	1638	1662	53	66	149	162
X=	6.4	8.2	17.4	19.4	163.8	166.2	5.3	6.6	14.9	16.2
PROGRESS	1.8		2		2.4		1.3		1.3	

We observe an improvement of results at the final tests, compared to the original, so the methods used were appropriate o tasks and objectives proposed.

TABLE OF INITIAL AND FINAL RESULTS OF TESTS Girls **Table nr. 2**

SUBJECTS	Push-up's		Abdomen (30 sec.)		S.L.J. (cm.)		Traction in arms		Ten-steps jump	
	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf
S1	7	9	19	21	164	168	7	9	16	18
S2	9	11	17	`20	165	167	8	10	17	20
S3	10	12	21	23	167	171	6	9	15	18
S4	8	11	18	20	162	166	5	7	16	18
S5	9	11	19	22	164	167	6	8	14	17
S6	8	11	21	24	168	171	9	9	16	19
S7	10	10	18	20	163	166	6	9	19	21
S8	10	11	22	24	168	171	5	8	15	17
S9	11	13	19	22	162	164	8	9	18	19
S10	8	12	17	19	163	166	6	8	17	20
Σ=	90	111	191	215	1646	1677	66	86	163	187
X=	9.0	11.1	19.1	21.5	164.6	167.7	6.6	8.6	16.3	18.7
PROGRESS	2.1		2.4		3.1		2		2.4	

We observe an improvement of results at the final tests, compared to the original, so the methods used were appropriate of task and aobjectives proposed.

TABLE OF INITIAL AND FINAL RESULTS OF TESTS –BOYS **Table nr. 3**

SUBJECTS	Push-up's		Abdomen (30 sec.)		S.L.J. (cm.)		Traction in arms		Ten-steps jump	
	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf
S1	8	9	20	22	164	168	6	8	17	18
S2	10	10	18	`19	165	167	8	8	15	17
S3	8	10	19	21	167	168	5	6	16	17
S4	9	11	17	19	162	166	7	8	14	16
S5	7	8	21	21	164	167	4	6	17	19
S6	9	9	20	22	168	169	8	9	15	17
S7	11	12	19	21	163	165	5	7	18	20
S8	8	9	21	22	168	171	6	7	16	18
S9	8	10	17	18	162	164	9	10	17	19
S10	9	11	18	20	163	166	7	9	19	21
Σ=	87	99	190	205	1646	1671	65	78	164	182
X=	8.7	9.9	1.9	20.5	164.6	167.1	6.5	7.8	16.4	18.2
PROGRESS	1.2		1.5		2.5		1.3		1.8	

We observe an improvement of the results at the final tests, compared to the original, but we also observe an improvement of a final results, much higher than those obtained from control group, given that the methods used in the experiment were much more effective.

TABLE OF INITIAL AND FINAL RESULTS OF TESTS GIRLS **Table nr. 4**

SUBJECTS	Push-up's		Abdomen (30 sec.)		S.L.J. (cm.)		Traction in arms		Ten-steps jump	
	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf	Ti	Tf
S1	5	8	18	21	165	166	6	8	14	16
S2	6	8	15	`17	164	167	7	10	16	19
S3	7	9	16	18	167	168	4	5	13	15
S4	6	7	17	21	160	165	7	9	16	20
S5	8	11	19	22	161	164	6	8	14	16
S6	5	8	16	19	165	168	5	7	14	17
S7	8	10	18	21	164	166	6	6	17	17
S8	7	9	17	18	165	168	8	9	18	19
S9	8	11	18	20	163	167	7	9	15	18
S10	6	8	16	20	167	171	6	9	17	19
Σ=	66	89	170	197	1641	1670	62	80	154	176
X=	6.6	8.9	17.0	19.7	164.1	167.0	6.2	8.0	15.4	17.6
PROGRESS	2.3		2.7		2.9		1.8		2.2	

We observe an improvement of the results at the final tests, compared to the original, but we also observe an improvement of a final results, much higher than those obtained from control group, given that the methods used in the experiment were much more effective.

After studying and analyzing the final tests results, we observe a trend o f two groups, but we will see better progress in the experimental group, witch leads to the conclusion that the means and methods chosen and used in this group, were the most effective, to achieve proposed goals, namely growth indices force development at seventh class.

Conclusions

Educational process of physical education and sport, represent the process of physical qualities education, of driving qualities, technical and tactical qualities, of some sports branches and sports games, through process, developing all organs and body functions, perfecting motor qualities, moral volitional and mental qualities, and forming a large numbers of movement skills, thus creating the basic for the successful development of sports activity and work capacity.

Specific methods and means of physical education and athletics, for prepare in all planes at the

level class, on witch research was carried out, were selected, measured and then applied in accordance with the particularities of gender, age and level of training of seventh class.

Research has revealed that analysing , systematizing and applying means of training, to increase of the indices of force development, proved to be effective and educating forms for motor qualities, specific to athletics.

Although this process complex and continually, are considered as general, it must be customized for each objective and task in part, must reported that the number of classes systems, what we want to achieve in the end.

Also research has demonstrate that the approach to prepare students as seventh, programming and planning of physical education activity, should be done only after through knowledge of the group of students who we work, and only after a specific personal training, prior theoretical point of view, profound and scientifically based and that take into account of the methodological programs of physical education lessons at this age.

Conducted research hypotheses, were verified because the level of preparation of students as seventh, has been growing.

At the choice of the methods and means, must take into account to the level of physical and motor development of the students and their age and sex particularities.

It is well maintain of control samples, to be made after each cycle or classes system, or at end of a longer training.

At the control samples covered by this research, may be added and others samples, on line level checking of the motor qualities development indices.

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THE LEVEL OF MANIFESTATION FOR MOTRIC CAPACITIES OF SIX YEARS OLD CHILDREN

DEACU MARCEL[1]

Abstract

Purpose. The purpose of this research is to emphasize the level of manifestation for fundamental movement of pre-school children, as well as the starting age of their systematical formation within activities of personal development.

Methods. This paper aims to research the efficiency of certain applicative courses, with the purpose of consolidating and perfecting motric capacities of pre-school children.

Results. Comparing the results obtained at the given tasks by the experimental group at the beginning and at the end of the experiment, we can observe a significant positive evolution, at the level of assimilating the tested motric capacities.

Conclusions. The results obtained by the experimental group certifies the positive influence of these applicative courses. We can observe the consolidation of motric capacities and the correction of the mistakes registered at the initial test. Furthermore, the evolution of the children's motric behaviour is noticeable, along with a harmonious physical development, as compared to the results obtained by the control group, where mandatory games were performed, outside the Physical Education activity contained in the syllabus of premature education.

Keywords: motric capacity, applicative course, pre-school.

[1]Physical Education and Sporting Field, Petroleum - Gas University of Ploieşti, ROMANIA
Email: marceldeacu@yahoo.com
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Introduction

The golden age of childhood, the pre-school period, is the one where we can observe the biggest progress in physical and psychological development, progress which allow very good adaptations to various situations, and insure the child a certain efficiency in activities, without the existence of obligations and worries pressure. (T. Crețu, 2005).

Everything we know, believe and think about the child is reflected in everything we do for him/her. As we move closer to him/her and we understand better, so we learn more about what we should do to help him/her grow and develop the full potential available.

In education there are no recipes. There is experience, we have ideas, theories based on new research, confirmed practices which have proved effective over time, values, principles, rules. The success of education is based on adapting educational activities to the individual needs of each child.

The concept which states that the child is a whole has at its basis the accepted principle that all areas of growth and human development are interrelated. None of the aspects regarding human development does occur independently, and all skills, no matter how simple or complex should be, reflect the intertwining of abilities.

Motric skills are essential, but also specific components of different motric acts, which, if harmoniously combined, ensure the performance of certain motric tasks. (Deacu, M. Finichiu, 2010).

The game is the most important source of learning for children, is an activity that helps them most and more effectively to learn. Through play children learn to interact with others, to explore the environment, to find solutions for problem situations, to express their emotions, acquire knowledge and skills that will be necessary for their adaptation to school requirements. **(**M. Deacu, 2008).

For younger children, the physical, social, emotional, cognitive or language development is achieved at the same time, being inter-conditioned. Children learn holistically, so that every area of development affects the other, and none operates independently. Physical development may influence children's contribution to the achievement of various tasks or when attempting to obtain certain group performances, to which he/she belongs. The success or failure largely affects the child's self image and self-esteem.

The tendency of motion is an initial impulse in human life, always acting with great poignancy, and manifesting itself during childhood, when he/she forms a number of skills that can be considered the basis for each of the child's development plan: hygiene habits, eating habits, behavioral, motric and others.

The assimilation of certain behavioral modalities defined through motric performance, is characterized by: improving the motric coordination process, optimizing internal and external conditional factors, the acquisition of skills and behaviours appropriate for the given situations." (A. Dragnea et alii, 2006,)

The desire to move is very high, especially after other specialization activities; it is quite natural and healthy and should be respected. The young child is active, full of desire to move, always ready to run, jump, climb, play with the ball, rope, circle, etc.. He/she is always ready to learn new information, new rules. Stepping into a new world is full of tension and hope. This finds expression in his/her favourite games.

One of the basic needs that a child feels at this age is the need to move. The child has the energy that manifested through various kinds of motion, as well as through a sort of specific "agitation", without being fatigue. Spontaneity, ease, freedom are specific to this age of "grace", but is also a good coordination and harmony of his/her movements.

Purpose

The purpose of this research is to emphasize the level of manifestation for fundamental movement of pre-school children, as well as the starting age of their systematical formation within activities of personal development.

Research methods and procedures

Research objective

This paper aims to investigate the effectiveness of certain developed strategies of approaching the instructive-educative process, where motion games are promoted, in order to strengthen and improve the motric skills of preschool, benefactors of this process within the kindergarten.

Pedagogical and social valences of motion games become a conceptual form through the design of strategies in objectives, their practical application presupposing to insure the internal training requirements, generated by the natural availability of the subject (learning and performance abilities, motric intelligence, motric skills, motivations, needs, the subject's capacity for self-control and self-regulation), but also external conditions (preparing activities, causing psychological and educational events).

Subjects

This research has been undertaken on a group of preschool children, aged 6 to 7, enrolled in a kindergarten. The syllabus for premature education mentions a compulsory Physical Education activity, done once a week within the psycho-motric field (30 – 35 min. for the second age level); the teacher has the possibility to plan various motion games in various

moments of the daily program (for free-chosen activities, for transition activities and for activities of personal development).

Tests description

The groups of children who participated at this experiment were tested both at the beginning and at the end of it.

Applicative track: Walking in balance on a line – 5 m., walking on the tip of the toes – 5 m; walking in balance on the gymnastic bench; walking on heels – 5 m; crawling on ell-bows and knees – 3 m; running between poles – 10 m.
Evaluation:

- **Very Good** – performs the walk, the run between poles correctly, maintains balance and a correct body position, performs the crawling correctly.
- **Good** – body position is incorrect while walking (head bent over, lifted shoulders), the lack of limbs coordination while running, losing balance 1 - 2 times during the exercise, lifting the torso or the head while crawling.
- **Satisfactory** – lack of limbs coordination while walking, body swinging, touching the sole on the ground and an exaggerated motion of the arms while running; an incorrect position of the body while walking in balance, looking down, a lack of limbs coordination while crawling.

Research results

By exercising and strengthening the skills and basic and utilitarian motric capacities, in the conditions of their concrete application within the selected motion games, it was observed that, along with their correction and improvement also to find the enlargement of the motric experience.

We aimed at strengthening walking and running, correcting the body figure and execution mistakes through motion games. The next step was to strengthen and improve basic motric skills: jumping (standing long jump, high jump) and throwing - catching (throwing - catching the ball, throwing at a fixed target) through specific motion games.

For these games we have assured the active participation of all children, through the variety of contents, formations, through the modification of team members. After the experiment ended, the evaluation task was given to both groups. As a result, after the comparative analysis of the obtained data, we have observed the following:

- Comparing the results obtained by the experimental group at the beginning and at the end of the experiment, we may notice a positive evolution, significant for the level of assimilating the tested motric skills:

−The Very Good mark was obtained by 15 children at the initial test (62,5%), and at the final test 21 (87,5%), 6 children perfecting their level of skills assimilation;

−The Good mark was obtained by 7 children at the initial test (29,16%), and at the final test 2 (8,3%), 5 of them perfecting their level of skills assimilation;

−The Sufficient mark was obtained by 2 children at the initial test (8,3%), and at the final test 1 (4,16%), 1 child perfecting his level of skills assimilation;

- Comparing the results obtained by the control group at the beginning and at the end of the experiment, we may notice an insignificant evolution of the assimilation level of the tested motric skills:

−The Very Good mark was obtained by 16 children at the initial test (66,6%), and at the final test 17 (70,8%), 1 child perfecting his level of skills assimilation;

−The Good mark was obtained by 5 children at the initial test (20,8%), and at the final test 5 (20,8%), with no progress for this mark;

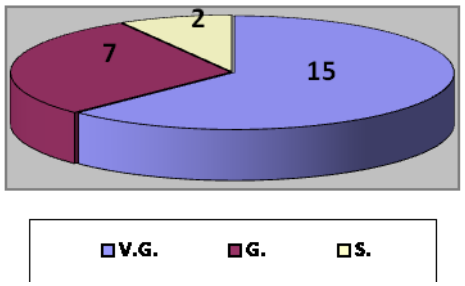
The Sufficient mark was obtained by 3 children at the initial test (12,5%), and at the final test 2 (8,3%), 1 child perfecting his level of skills assimilation;

Table 1: Results obtained at the applicative track for the experimental group

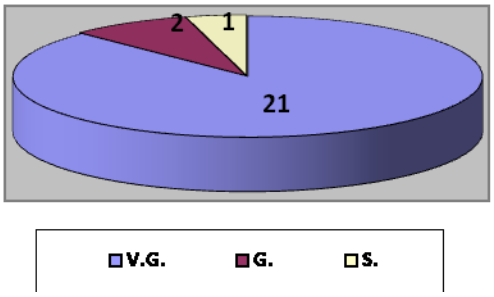
Subjects	Age	Results – applicative track	
		Initial Test	Final Test
1.	6 YEARS	VG	VG
2.	6 YEARS	G	VG
3.	6 YEARS	G	VG
4.	6 YEARS	VG	VG
5.	6 YEARS	G	VG
6.	6 YEARS	VG	VG
7.	6 YEARS	VG	VG
8.	6 YEARS	G	VG
9.	6 YEARS	VG	VG
10.	6 YEARS	VG	VG
11.	6 YEARS	G	VG

12.	6 YEARS	VG	VG
13.	6 YEARS	G	VG
14.	6 YEARS	VG	VG
15.	6 YEARS	S	G
16.	6 YEARS	S	S
17.	6 YEARS	VG	VG
18.	6 YEARS	VG	VG
19.	6 YEARS	VG	VG
20.	7 YEARS	VG	VG
21.	6 YEARS	VG	VG
22.	6 YEARS	VG	VG
23.	6 YEARS	VG	VG
24.	6 YEARS	G	G

Graph 1: Mark initial test Experimental Group



Graph 2: Mark final test Experimental Group



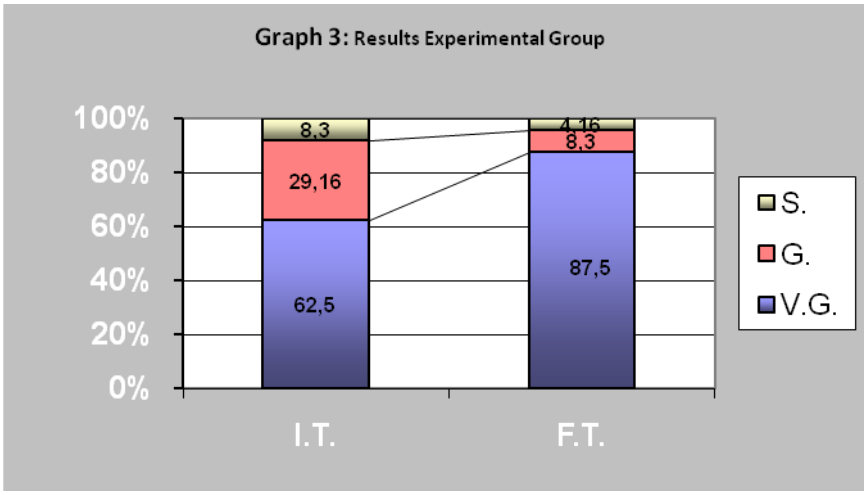
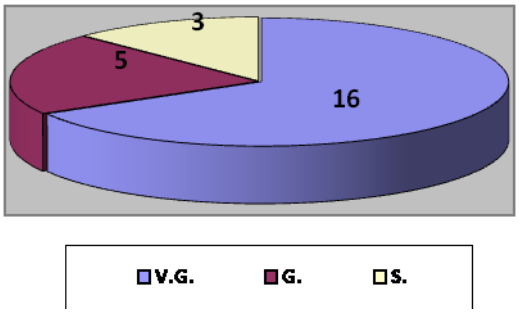


Table 2: Results obtained at the applicative track for the control group

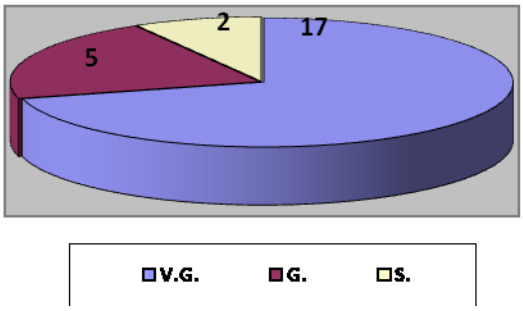
Subjects	Age	Results – applicative track	
		Initial Test	Final Test
1.	6 YEARS	G	G
2.	6 YEARS	VG	VG
3.	6 YEARS	VG	VG
4.	6 YEARS	G	VG
5.	6 YEARS	VG	VG
6.	6 YEARS	VG	VG
7.	6 YEARS	VG	VG
8.	6 YEARS	VG	VG
9.	6 YEARS	G	G

10.	6 YEARS	VG	VG
11.	6 YEARS	VG	VG
12.	6 YEARS	G	VG
13.	6 YEARS	VG	VG
14.	6 YEARS	VG	G
15.	6 YEARS	S	S
16.	6 YEARS	S	S
17.	6 YEARS	VG	VG
18.	6 YEARS	VG	VG
19.	6 YEARS	G	G
20.	7 YEARS	VG	VG
21.	6 YEARS	VG	VG
22.	6 YEARS	VG	VG
23.	6 YEARS	S	G
24.	6 YEARS	VG	VG

Graph 4: Mark initial test Control Group



Graph 5: Mark final test Control Group



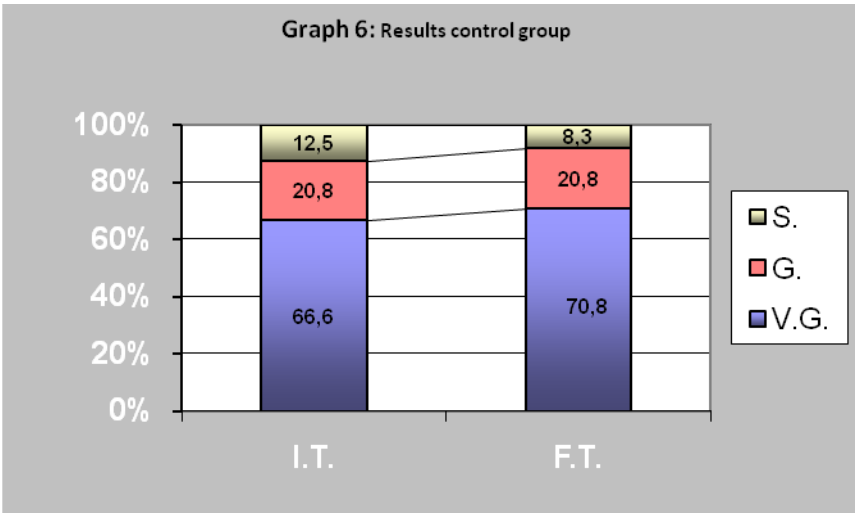


Table 3: Data of the 6 year old children physical development

Experimental Group					Control Group				
Subjects	Development data 15.10.2009		Development data 15.05.2010		Development data 15.05.2010		Development data 15.10.2009		Subjects
	Weight	Height	Weight	Height	Height	Weight	Height	Weight	
1.	23 kg	123 cm	25 kg	125 cm (normal figure, harmonious)	129 cm (normal figure, harmonious)	32 kg	124 cm	29.5 kg	1.
2.	20 kg	109 cm	21 kg	114 cm (harmonious)	114 cm (harmonious)	21 kg	109 cm	20 kg	2.
3.	21.5 kg	120 cm	23 kg	123 cm (normal figure, harmonious)	117 cm (normal figure, harmonious)	19 kg	114 cm	18 kg	3.
4.	22 kg	123 cm	24 kg	125 cm (normal figure, harmonious)	127 cm (normal figure, harmonious)	32 kg	123 cm	31 kg	4.
5.	27 kg	125 cm	29.5 kg	130 cm (normal figure, harmonious))	133 cm (normal figure, harmonious)	29 kg	130 cm	27 kg	5.
6.	21 kg	121 cm	22 kg	123 cm (normal figure, harmonious)	123 cm (normal figure, harmonious)	22 kg	121 cm	21 kg	6.
7.	21 kg	122 cm	21 kg	124 cm (normal figure, harmonious)	122 cm (normal figure, harmonious)	25 kg	117 cm	24 kg	7.
8.	22 kg	119 cm	23 kg	123 cm (normal figure, harmonious)	132 cm (hyper-format figure, harmonious)	30 kg	129 cm	28 kg	8.
9.	22 kg	129 cm	23.5 kg	131 cm (normal figure, harmonious)	122 cm (normal figure, harmonious)	24 kg	120 cm	22 kg	9.
10.	22 kg	117 cm	23.5 kg	119 cm (normal figure, harmonious)	131 cm (normal figure, harmonious)	23.5 kg	129 cm	22 kg	10.
11	30 kg	132 cm	35 kg	120 cm (hyper-format figure, harmonious)	120 cm (normal figure, harmonious)	29 kg	117 cm	28 kg	11
12.	24 kg	128 cm	26 kg	130 cm (normal figure, harmonious)	114 cm (normal figure, harmonious)	20.5 kg	112 cm	20 kg	12.
13.	21 kg	118 cm	23 kg	122 cm (normal figure, harmonious)	131 cm (hyper-format figure, harmonious)	25 kg	128 cm	24 kg	13.
14.	24 kg	120 cm	25 kg	122 cm (normal figure, harmonious)	117 cm (normal figure, harmonious)	25.5 kg	113 cm	23 kg	14.
15.	31 kg	118 cm	33 kg	122 cm (hypo-format figure, disharmonious)	128 cm (normal figure, harmonious)	26.5 kg	124 cm	24 kg	15.
16.	42 kg	128 cm	41 kg	131 cm (disharmonious; + G)	119 cm (normal figure, harmonious)	24 kg	117 cm	23 kg	16.
17.	27 kg	125 cm	30.5 kg	129 cm (hyper-format figure, harmonious)	123 cm (normal figure, harmonious)	32 kg	122 cm	28 kg	17.
18.	27 kg	125 cm	30 kg	129 cm (normal figure, harmonious)	127 cm (hyper-format figure, harmonious)	33 kg	125 cm	31 kg	18.
19.	21 kg	116 cm	23 kg	119 cm (normal figure, harmonious)	128 cm (normal figure, harmonious)	36 kg	125 cm	31 kg	19.
20.	28 kg	128 cm	30.5 kg	131cm (normal figure, harmonious)	128 cm (normal figure, harmonious)	22.5 kg	125 cm	21 kg	20.
21.	28.5 kg	126 cm	32.5 kg	128 cm (hyper-format figure -+ G , harmonious)	134 cm (normal figure, harmonious)	40kg	132 cm	36 kg	21.
22.	23 kg	122 cm	24 kg	124 cm (normal figure, harmonious)	125 cm (normal figure, harmonious))	24kg	123 cm	22kg	22.
23.	27 kg	125 cm	28.5 kg	126cm (normal figure, harmonious)	124 cm (normal figure, harmonious)	24 kg	122 cm	23 kg	23.
24.	24 kg	117 cm	25 kg	122 cm (normal figure, harmonious)	120 cm (normal figure, harmonious)	21.5kg	118 cm	20.5kg	24.

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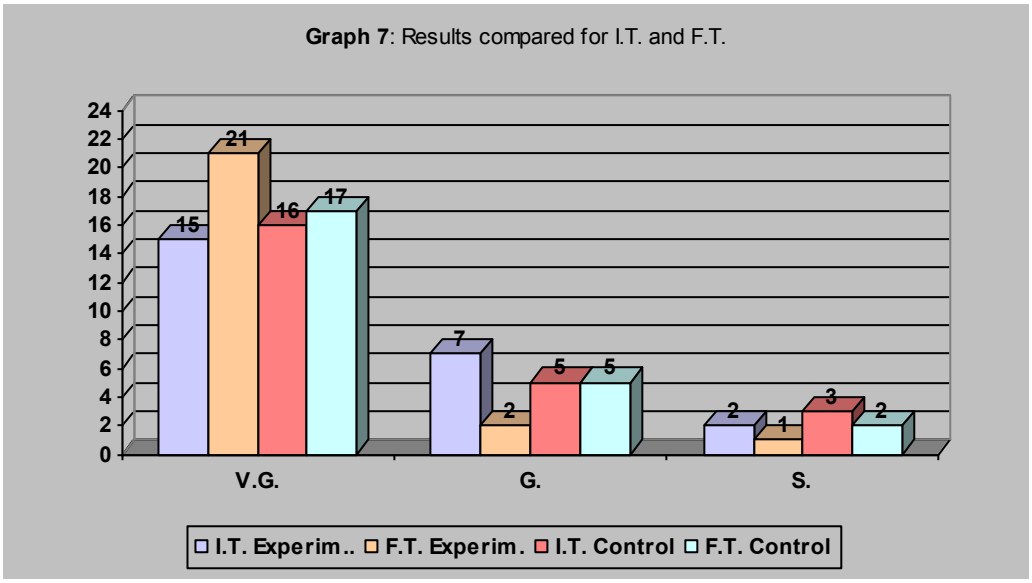
For the experimental group, we have elaborated a different program of motion games, program applied in the stage of personal development activities (PDA), developed during the period 1 October 2009 – 15 May 2010. Through the exercise and consolidation of motric skills and abilities, basic and utilitarian, in the conditions of their concrete application, we aimed to, along with their correction and improvement also to have the enlargement of the motric experience.



Conclusions

The experiment aimed to emphasize the influence of motion games consistently practiced on strengthening and improving motric skills, both the basic and the applicative-utilitarian ones.

The data obtained after the implementation of the initial evaluation, proves that, at the beginning of the school year 2009/2010, the level of ownership of motric skills of children from both groups is almost the same, with insignificant differences.

After applying a systematic program of motion games within activities of personal development, the results obtained by the experimental group certify their positive influence. There is a noticeable consolidation of motric skills and correcting the mistakes made at the initial evaluation, along with an evolution in children's motric behavior, a harmonious physical development of children, as compared with the results obtained from the control group, where there were applied random motion games, beside the Physical Education activity included in the syllabus for early childhood education. It was also noted an improvement in relations between children, a better group cooperation and communication, and the development of fair-play.

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THE DEVELOPMENT OF MOTOR QUALITY – DETENT – THROUGH ELEMENTS AND STRUCTURES SPECIFIC TO THE SPORTS GAMES

DULGHERU MIRELA[1]

Abstract
Purpose: This experiment started from the premise that the use of sports games in physical education class is perceived by students as an attractive activity, through which we can stimulate on the background of the application of psycho-motor solicitation development of physical qualities. The present experiment has proposed to verify the hypothesis that if we introduce in each physical education class structures and elements of the game of football, basketball, volleyball and handball we will be able to improve the performances of our students at the specific tests to determine the explosive force of the inferior limbs.
Material and methods: This experiment was done on four groups of students from the Faculty of Economics.
In support of the experiment we conducted specific research methods used in the research field, especially the method of measurement and evaluation, registration, statistics and mathematical method, graphical method, etc.
Results: The statistical processing of phase measurements, initial, intermediate and final results have superior values and visible progress of students undergoing the special program we proposed, compared with those who have worked only exercises specific to athleticism for the development of this quality.
Conclusions: Results and implicit the conclusions of the experiment confirm our hypothesis, and therefore we recommend applying the basic elements of the games in physical education class in order to improve the Sargent test results, a test of my choice in determining the explosive force of the lower limbs.
Key words: detent, explosive force, specific means, sport games, game elements and structures

Introduction

The experiment started from the premise that physical education activity can boost performance of physical qualities and entertaining means, through sport games, which by their nature are considered attractive activities, which stimulate the psycho-motor background for the benefit of performance increase.

The study chose detent, respectively the explosive inferior limbs' strength that I believe can be improved by means known to the athletic type, but also by means specific to sports games. Sports games are known to increase the attractiveness of physical education class, that the use of certain elements and structures of sports games increase the interest, competitiveness, the focus of students involved in the didactic process (T., Bompa, 2001).

We remember that we chose to study the development of detent that is a biometrical quality which facilitates the discontinuous movements' development and is translated into the ability to accommodate in a motor act of a high voltage, followed by sudden expansion.

Regarding the definition of detent, there is some disagreement among experts, some of whom consider detent the speed under strength regime, others assuming detent is explosive force (force under speed regime) (T., Bompa, 2002).

According to V. Tudor (1999) the difference between the two forms is the predominance of one quality.

If at detent the predominant motor quality is speed (over 50% speed and below 50% strength), at the explosive force the predominant motor quality is force (over 50% force and less than 50% speed).

There were carried out researches that demonstrated the existence of close links between the maximum force and speed of the gesture. Force increase as a parameter of detent capacity depends on three factors:

- Coordination of muscle;
- Contraction speed of muscle active fibers;
- The force of contraction of muscle fibers involved, which depends on the cross section of muscle **(**Gh., Cârstea, 2000).

It is known that the main ingredients of detent are the explosive force and the starting force **(**S., Şerbănoiu, 2004).

Explosive force is translated into the ability to obtain a sudden increase of force per unit of time and depends on the speed of contraction of the phase units, the number and force of contraction of fibers employed in the effort **(**A.,Dragnea, S., Mate - Teodorescu, 2002). I found it necessary to remind about the force that is a real parameter of detent capacity, force that we solicit in any sport game, whether discussing at the level of the inferior limbs [pace, shot], whether we refer to the upper limbs [throwing at the goal, hitting over the net, etc.](J., Weineck, 1995).

[1]Petroleum and Gas University from Ploieşti, ROMANIA
Email: dmirela714@yahoo.com
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The hypothesis from which we started in our scientific approach in conducting this study was that if we turn our attention to the elements and basic structures of sports games and we will insert into the annual design as means, every physical education class, through these means specific to the sports games (handball, basketball, volleyball, soccer), we believe that we will see an increase of the combined motor qualities - detent and explosive expansion in the inferior limbs.

The specialty literature presents the main factors which determine the development of detent - explosive strength in the inferior limbs and specifies that they may be of biomechanics, biological and psychological nature (A., Dragnea, and collaborators, 2006).

Analyzing the information about these factors I tried to remember the most important of them:

- age, sex, diurnal rhythms (it was demonstrated that the daily fluctuations of force are approximately 5%);
- ratio of synchronization of motor units;
- means and methods used;
- ability to focus the fundamental nervous processes (excitation and inhibition);
- frequency of lessons;
- intensity of muscle contraction;
- the angle value of the segments involved in this type of action;
- muscle fiber thickness and the number of muscle fibers employed in the contraction;
- a wide range of psychological factors (motivation, attention, emotional states);
- Quality of energy substances in muscle and metabolic processes, etc (R., Manno, 1996).

Material and methods

The present experiment was conducted on first year students from the Faculty of Petroleum Engineering, we chose four groups, which totaled 100 boys. Students were divided equally into two working groups, an experimental form of 50 students, chosen randomly, and a control that had also a number of 50 members elected by the same criteria as those in the experimental group.

The experimental group had followed a certain training plan, sport game being always present at the lesson of physical education, they were introduced specific ways of sport games in each lesson, game elements and structures, and control group students have developed their sport activity during the physical education classes respecting existing curriculum in the minutest details.

The experiment was conducted over an academic year, the activity took place according to the weather conditions, in the gym or on the outdoor ground and expended over the period October 2009 to May 2010.

They were established two control samples: detent on a vertical plan, for which the evaluation took place using the well-known Sargent test, and the long jump without take-off which we tried to determine the explosive force of the lower limbs.

Returning to the Sargent test I would like to remind you that it bears the name of the one who analyzed it from a biomechanical point of view, being considered one of the most striking evidence for determining the detent at the level of the lower limbs, in the vertical plane.

At the Sargent test were performed only two vertical jumps, without rapid flexion, both at the beginning and end of the university year, for a more reliable determination because it is possible when there are several consecutive repetitions the acquisition of the technique to influence the jump's height.

As a description of this evidence we can point out that it contains simple elements and is made of standing to one side of a wooden ruler graduated, the ruler having a length of 4 m, the doer extends up the arm near his ear with his fingertips leaving a sign, a trace, usually wet or dust chalk on the ruler attached to the wall, then he executes a slight flexion, after which he jumps vertically and marks a new sign on the ruler. It is calculated the distance between the two marks, expressed in centimeters.

In the present experiment I appealed to the known methods and research techniques: bibliographic study method, method of measurements and recordings, experimental method, statistical method and mathematical and graphical method.

Processing of statistical and mathematical calculation took into account the following statistical indicators: average, median, upper limit (X_{max}), the lower limit (x_{min}), amplitude (W), quadric standard deviation (S) and coefficient of variation (CV).

Looking at our schedule in achieving our purpose, we briefly present some elements and structures, specific exercises to sports games that I used during both semesters of the academic year 2009-2010:

From the handball area we used the following elements and structures:

- With the handball ball in his hands, successive jumps in the spot or with shifting, on one or both legs, hop step with leading the handball ball forward – up, jump step ball carrying the ball at the chest.
- Throwing at the goal from jumping (or jump over the bench, an obstacle), with and without changes in direction.

▪ With the handball ball held between the ankles successive jumping on the spot or moving forward with both feet.

▪ Throwing at the goal from jumping while making a double jump on the left or right foot, etc.

From the basketball area we used the following elements and structures:

- Structures of exercises that contain changes in direction, pass, dribble, jumping on one leg or two legs, throwing the basket, etc.
- Stand with the ball held between the ankles: Jumping like the ball on the distance of 10-25 m. jumping with knees to chest, etc.
- free throws followed by vertical jump with touching the ring with your hand or reaching an object suspended.
- themed game (the ball does not falls to the ground).

From the volley area we used the following elements:

- Passing the ball from jumping over the net.
- From huddled in pairs, disrupting the partner by jumping from the squat in squat and pushing in his hands, [fighting cocks].
- Jumping on one leg, two legs, squatting with the trunk extension.
- Advanced exercises to attack and block, etc.
- Successive attacks from passes "rising" with withdrawal.
- Reproduction in the absence of the ball of the attack hit along the whole length of the field, respecting all phases (taking off, jumping, striking, landing).

From the football area we used the following exercises:

- Reproduction of hitting the ball with the head from jumping
- Jumping to the ball in order to hit it with the head
- Jumping vertically with a theme of overcoming of the horizontal plane of the goal
- Successive jumping on both feet over 10-15m on each leg with return dribbling through poles.
- Bilateral game with a theme (the validity of the goal is given only by hitting the ball with the head).
- Passing the ball between two players by hitting the ball with the head, etc.

Obtained results

After the made experiment numerical data resulted, data that were statistically processed and subsequently put in tables, in Tables 1 and 2 in which I present the statistical calculations of the initial and final values for the Sargent test and long jump without taking off in the 2 pre-established groups as being known as the experimental group and control group.

Table 1. Detent. Sargent Test. Statistic values.

	Experiment group		*Control group*	
	Initial T	Final T	Initial T	Final T
Arithmetic mean	45,022	51,795	43,568	46,863
Minim	29,5	37,5	30	34,5
Maxim	55	61	54	58
Amplitude	-	5,772	-	2,295
Median	46,5	53	44	47
Standard deviation	5,45	6,86	4,54	6,39
Coefficient of variation	13,03	12,53	11,43	12,76

Table 2. Jump in length from standing position. Statistical values.

	Experiment group		*Control group*	
	Initial T	Final T	Initial T	Final T
Arithmetic mean	2,298	2,393	2,283	2,339
Minim	2,2	2,34	2,2	2,28
Maxim	2,90	2,98	2,90	2,94
Amplitude	-	9,75	-	5,84
Median	2,43	2,53	2,4	2,53
Standard deviation	0,38	0,37	0,40	0,39
Coefficient of variation	8,44	7,62	8,92	8,68

I represented graphically in Figure 1 the evolution of the average means at detent.

I also tried by a graphical representation in Figure 2 to show the evolution of average means in the long jump on the spot.

Figure 1: The medium evolution of detent

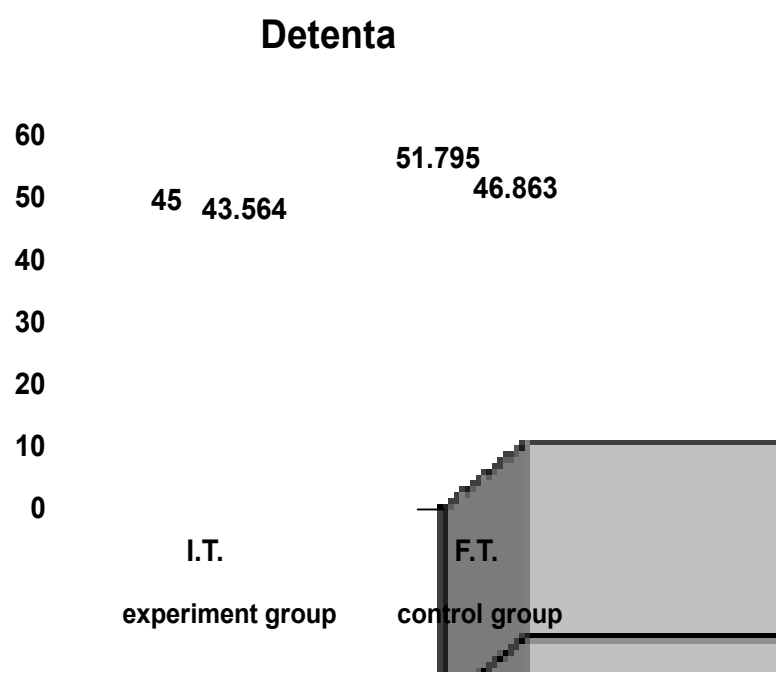
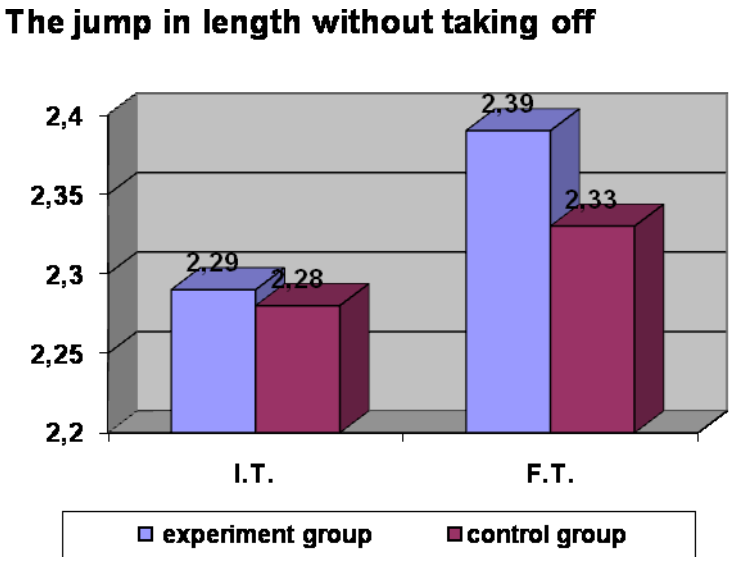


Figure 2: The medium evolution of the jump in length without taking off



Obtained results and their interpretation

Analysis and interpretation of statistical parameters calculated and put into tables indicate a higher evolution of the amplitude at the experimental group compared with the control group, for example the amplitude of the detent is with 3.5 cm higher in the experimental group compared to the control group recorded amplitude.

It was also found that at the detent, in the case of the experiment group was made a jump of the mean in the case of the Sargent test with approximately 6 cm, and at the control group, the mean progressed with 3 cm. The coefficient of variability indicates that the degree of homogeneity of values is medium. In the same context, at the long jump from standing position we notice, at the experiment group a progress of the average of performance with 10 cm, and at the control group only with 5 cm, we find that in both groups also can be observed a small scattering of the data (clustering the values around the average), the degree of homogeneity of the values being high.

Conclusions

Following the conducted experiment we can conclude that, according to the hypothesis claiming that if we turn our attention to the elements and basic structures of sports games and we will insert into the annual program as means, at every physical education class, through these means specific to sports games (handball, basketball, volleyball, soccer), we believe that we will see an increase of the combined motor qualities - detent and explosive strength in the inferior limbs, hypothesis that is otherwise confirmed.

From the data shown in the above tables and figures presented show that the experimental group had higher increases in both samples, compared with the control group, the group that did not work using the means specific to sports games at every class of physical education.

As a corollary of those currently referred to the fact that detent, the explosive strength of the inferior limbs can be improved at this level of study, taking into account that the investigated subjects are not engaged in sport performance, demonstrating that by preparing students through sports games represents an effective form, pleasing and touches a very important goal in the current context, of the necessity to attract the school population and not only towards moving, sport.

We can say that in the specific training process, the introduction of these means specific to the sport games, has as result the increase of attractiveness of physical training classes simultaneously with the improve (get better) the two motor qualities (motor skills) combined, leading ultimately to higher levels of general physical training. Thus, versatile approach of the game structures, in the case of physical education classes and sports and of the study subjects, resulted in a significant increase in their efficiency.

The same idea was found that after the very good results obtained from tests, the experimental group subjects approached in a very special manner the physical education lessons, with positive results.

It is important to note the total change of attitude to the studied students regarding the game structures, sports game in general, meaning that at the beginning of the research, their attention regarding some games was low, then after the rise in density of the lesson using play structures, the attention and participation in the lesson was more efficient, noticing even an active and enjoyable participation and, as seen, beneficial for their own performances.

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STUDY ON STUDENTS CONCERNS FOR MANAGEMENT'S BODY WEIGHTS

DUMITRESCU REMUS[1]

Abstract

Background. Young people generally do not give enough consideration to adopting a healthy lifestyle, which should show a real concern since elementary school, to physics activities, nutrition and effective spending of free time.

Objectives.

1). Analysis of female students for their image management effect of body mass and shape their attitudes clear as to physical activity.

2). Learning and adopting a proper behavior of a balanced lifestyle as obtained with the methods and means applied in sport and physical education courses at the University of Bucharest.

Methods. Anonymous questionnaires were applied, 200 students completed the course included physical education and sports-themed fitness and aerobics in during the academic year in October 2009 (initial test) - May 2010 (final test).

Results. More than one third of the students are aiming to weaken, their most consistent concerns intervening years since the first school, the percentage of responses highlighting these issues. Our study indicates a progressive increase in the percentage of female students who used different methods and ways to lose weight: 33% at secondary level, 45% to 38% at secondary level and university level. Aimed at weakening the main methods were:

- Engaging in physical activity (fitness and aerobics);
- Adoption of specific diets.

Conclusions. The results we obtained highlight the need to implement programs to inform and drive to help young students to acquire knowledge and skills to realistic as the adoption of a more balanced lifestyle, taking into account the bio-environmental factors (socio- economic) with the purpose to obtain an ideal body mass.

Body mass is not constant, can suffer different variations:

- **physiological** (temporary) rise slightly after eating and then decreases slightly after a strong effort (in our case the fitness and aerobics) falls amid fluid loss through sweat, urine etc.
- **non-physiological** (pathological), the term: the overweight (overweight degenerative syndrome, SDS), or degenerative under-weight wasting syndrome, SDC (PCOS by progressive weakening of the entire body through a failure of organ function).

Keywords: management body mass, fat, college students, their image, lifestyle.

Introduction

Body Mass Index (BMI or BMI) is a body mass index based on the ratio between height and weight.

Determination of body composition is a key measure of health status and exercise capacity in both athletes and general population. Body composition is one factor that contributes to athletic performance. The percentage of fat varies according to age, sex, and according to the athletes and the sport practiced, training status, energy intake. The unsportsmanlike, determining body composition is important to accurately assess nutritional status and treatment monitoring of nutritional imbalances.

The model with two components, the human body is composed of: non-fat mass and fat mass. Fat mass is made up of essential fats (from bone marrow, heart, lungs, liver, spleen, kidney, central nervous system) and deposit fat (fat is

[1]University Of Bucharest - D.E.F.S., ROMANIA
Email: remusdumitrescu@yahoo.com
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accumulated, located around organs and subcutaneous).

Relationship between subcutaneous fat and internal fat is not the same for all individuals and can vary throughout life. Weight is the weight of weak muscles, bones, ligaments, tendons, internal organs, teeth. Different low mass non-fat mass. Lean mass includes a small percentage of essential fats in the bone marrow and internal organs (W.D., McArdle, B.E., Katcha, & V.I., Katcha, 2001). Of this lean mass (mass processing), which recorded the largest component of variation is muscle tissue (muscle mass). Active Desk is the one who made the effort and excess fat has negative effects on health and sports performance.

In our study we determined body composition using subcutaneous adipose tissue envelope test. The method is practical, inexpensive, yet accurate and noninvasive (D.A. Brodie, 1988). The results are similar to those obtained by underwater weighing and DEXA method, but it takes experience to get the correct results. Measurements were made using the adipo-centimeter specific regions of the body. The results, expressed in mm is inserted into the formula and obtain the percentage of fat mass and active.

Percentage of body fat important variations by gender, age, sport and unsporting.

A certain percentage of fat is essential for maintaining health. Essential fats are essential for the proper functioning of the body, and women have a higher percentage of essential fat than men.

The optimum level of health of body fat in adults is 16-25% unsporting (18-30%) for women (J.H., Wilmore, E.R., Buskirk, M., DiGirolamo, & T.G., Lohman,1986).

Athletes have lower levels of body fat to unsporting. The percentage of fat for athletes performance varies widely depending on the sport and is 12-19% in women.

Changes in weight and body composition in athletes are correlated with training status, the period of preparation and energy intake. Some studies have shown that fat tissue is inversely proportional to the maximum aerobic capacity and performance in long distance running and the active mass is correlated with performance in sports where maximum strength is required.

In many sports requires a low-fat. Excess adipose tissue decreases the ability to jump, running speed and endurance capacity. There overweight athlete (bodybuilding, canoe) with an athletic body build, but low percentage of fat and well developed musculature. Athlete with a good paste may incur a higher percentage of subcutaneous fat (rugby, throwing in athletics), but this increase should be associated with increased blood lipid and cholesterol (I.,Dragan, 2002).

In sports like gymnastics, running the semi-fund, jumping in athletics should be an active mass underweight good pace and minimum fat.

Body weight and body composition are essential to artistic gymnastics is performed because the exercises against gravity.

Sports artistic impression that matters (gymnastics, diving, figure skating) are essentially sports weight category, the lower body weight and optimal body composition are essential requirements.

Monitoring weight and body composition in dynamic give us useful information to guide the process of training and food intake in athletes.

Determination of body composition is useful in children and adults for unsportsmanlike accurately assess nutritional status and development of appropriate indications.

Clinicians often use BMI (body mass index) to determine, "normal" weight of a person. Body weight and BMI did not show, however, information about the amount of body fat (L.M., Maynard, 2001). People who have sustained physical activity and good muscle mass increased BMI without the excess fat. There are even individuals who are at normal weight for age, sex, stature (or even below this weight) have excess fat. There are also underweight people (especially women) who have very low body fat levels, with negative consequences for health.

Studies have shown that from adult muscle tissue decreases and the percentage of fat increases. Even people who have weight and a standard and maintain, lose fat and keep muscle tissue due to a sedentary lifestyle with little exercise and a lot of fat in the diet. Using a proper diet and exercise but it is possible to build muscle mass in adults and even elderly.

The amount of body fat is based on the number and size of fat cells. Increased adipose tissue can be done on account of increase in adipocyte (hyperplastic growth) or to the rise in fat cell size, the accumulation of intracellular lipids (hypertrophic growth). Hyperplastic growth is characteristic of childhood, and pubertal period prepubertare and fat cells once formed persists throughout life. Increasing the number of adipocytes in childhood has long term negative consequences.

Obesity is a chronic disease becoming more common among children and adolescents, most often caused by bad eating habits and insufficient physical activity and overweight children with high percentage of fat is prone to obesity in adult life.

The amount of fat, not total body weight, obesity is one that defines (A.L., Albright, J.S., Stern, 1998).

Currently, obesity is recognized as a major risk factor, independent, heart disease and diabetes.

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The journal is indexed in: Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST, DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengace Learning

That is why it is very important to maintain optimal body weight and composition in childhood.

Determination of body composition is important for monitoring the effects of exercise and / or diet on adipose tissue mass and active. People who lose weight through a restrictive diet to lose as much or even more active than fat mass. Sometimes, though diet and exercise are associated with body weight does not change during the first weeks-months, but there will be changes in body composition in adipose tissue and increased downside active mass. The benefit of the associated exercise for weight reduction diet is just maintaining the active mass and decrease body fat, which is equivalent or even greater than the weight loss (V.H., Heyward, 1991).

Decreased correct weight should be made by the association of exercise with a proper diet (in any case by starvation), and regular control of body composition (fat tissue).

Diet and lifestyle are undeniably important effects on health. For an adequate nutritional status is very important to adopt a balanced diet (with an intake of macro-and micronutrients), an active lifestyle (avoiding sedentary), practicing physical activities (L.,Lotrean ş.c. 2005).

In trying to get a figure close to the dimensions as "ideal" 90-60-90, some young students adopt different types of diet food, often "recommended" by colleagues or friends, without support Medical and unbalanced.

A diet that excludes high protein based on eggs, milk and meat, while the appearance may lead to an imbalance of growth and development, decreased intellectual performance (signs appeared during exams).

Low intake of meat (low iron) leads to fatigue and anemia, and milk and dairy products (by lack of calcium) may be the basis of osteoporosis during adulthood (C., Ionut, 2004).

In other news, if energy intake based on caloric intake of sweets and fats than performed during physical activity will result in a progressive increase in body mass tend to obesity, a threshold that once exceeded lead to cardio-vascular diseases, diabetes mellitus , arthritis, respiratory disease, etc..

Giving up tables (typically of breakfast), due to lack of time due to other activities that are given priority or fear of obesity is unhealthy habits.

There have emerged many articles and studies that have fired a warning of the danger of eating behavior disorders (bulimia or nervous anorexia).

Due to stress, frustration, loneliness, irritability, exaggerated phenomenon of growing consumer appetite for food, often without fattening.

Medical, bulimia is characterized by repetitive episodes of greed food, consumption of large quantities of food quickly (with preferences for certain foods or not), then those so predisposed to something, it causes vomiting, using diuretics, starve (post black) or do strenuous exercise. Episodes and their frequency varied from individual to individual, depending on the severity of mental disorders (J.A., O'Dea & S., Abraham 1999).

Fear of fattening, despite the sharp weakening of the body scheme with modifications, is generally young, manifested by the imposition of food restrictions tough challenge vomiting, using laxatives and diuretics and strenuous exercises. Anorexia nervous leads to weight loss, fat loss panniculitis (subcutaneous fat blanket), melting of muscle mass, lower limb edema, skin lesions (vitamin deficiency), endocrine disorders or even loss of female fertility, amenorrhea is most frequently encountered (J.A., A 'Dea & S.,Abraham 1999).

Hypothesis

Investigating and assessing attitudes and behaviors regularly on their own body weight management and the methods used, students of the University of Bucharest, identify, prevent and address slippages in time for a diet and unhealthy lifestyles.

Materials and methods

1. Subjects undergoing experiment

The study took place at the University of Bucharest, Department of Physical Education and Sports in October 2009 during the academic year (initial test) - May 2010 (final test).

Anonymous questionnaires were applied, supplemented by 200 students since I, II and great years (III, Masters I and II), entered office by the individual faculties (mandatory, voluntary or optional) at the rate of physical education and sports topic of fitness and aerobics. Practical and theoretical work was carried out in spaces no. 1, 2 and 4 inside the Faculty of Law, equipped with the necessary training equipment and accessories.

2. Collection, compilation and analysis of data obtained

Students were instructed how to complete the anonymous questionnaire in which multiple responses were inserted for identification and assessment of risk behaviors to health. The average length of the questionnaire was 30 minutes, being conducted in rooms where they were enrolled in early education. It was monitored for completion students should not influence each other.

Our study focused on issues of concern to female students own body weight, how they tried to make management, nutrition adopted and used nutritional supplements and vitamins.

The data collected were consolidated and interpreted using SPSS, calculating the prevalence of behaviors investigated. A test was used chi square (x2) to check the consistency of real data distribution (distribution calculated) theoretical distribution of data to assess the statistical significance of observed differences on the issues investigated.

Results

The group of subjects was composed of students aged between 18 and 25 years (97 in the first year of study 72 of the second year of higher education and 31 years of education).

The findings that relate to concern one's own body mass of female students, indicates an average of 63.66% of those who are concerned (chart no. 1).

The findings presented in the table. 1 indicates an average of 67.33% of those trying to lose weight, an average of 20.63% of those trying to maintain an average of 2.93% of those who want to fatten and an average 9.1% of those who do almost nothing to maintain the optimum parameters of their own body mass (chart no. 2).

The tendency is above average weight loss among young students, but there are a percentage of female students who are trying to fatten.

Results indicate that over 63% of students said they are concerned about their own body weight.

Table. 1 shows that the majority of young students have used different methods in the last year to weaken, the average increased to 92.43%.

The main method for weight loss, has been practicing physical activities, their average being 36.7%, and adoption of food diets for weight loss, with an average of 37.76%.

Percentage of girls who have turned to food restriction (11.43% weight loss teas, pills for the weakened 4.1%, causing vomiting 0%) was quite small. So small was the average percentage those who used the sauna or massage 4.4% (chart no. 3).

Average percentage of subjects who turned to vitamins and nutritional supplements was 41.33% (chart no. 4).

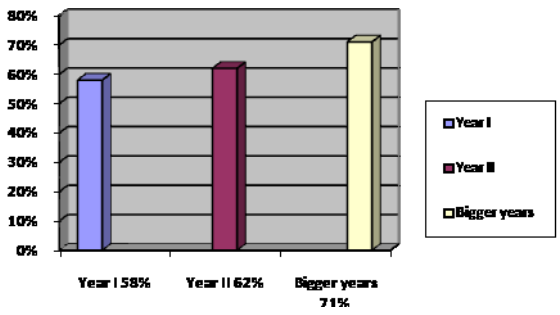
Concerns own body weight for female students

Item	Year I	Year II	Bigger Years
	share %	share %	share %
Are you concerned about your own body weight?			
Yes	58	62	71
Now the entrepreneur in the body mass?			
Efforts to lose weight	61,8*	70,4*	69,8*
Efforts to weaken	22,9	18,3*	20,7*
Efforts fattening	3,4	2,9*	2,5*
Nothing	11,9	8,4*	7*
In the last year of the methods used for weight loss?			
Physical Activity	44,5*	36,1*	29,5*
Food Diets	32*	33	48,3
Tea for weight loss	8,4*	14,2	11,7
Weight loss pills	3,7	6,6	2*
Sauna / massage	6,5	4	2,7*
Vomiting Challenge	-	-	-
Nothing	4,9*	6,1	5,8
In the last year have tried vitamins / supplements?			
Yes	53	38	33*

* - Statistically significant difference (p <0.05) between study

Table no. 1

Graphic presentation of the percentages by years of study of those who are concerned about their body mass



Graphic presentation of the percentages by years of study who have not done anything in the body mass

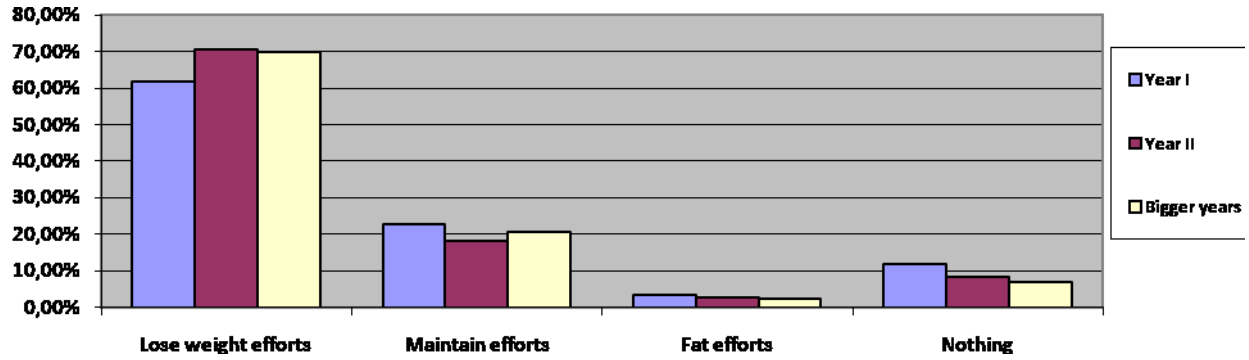


Chart 2

Graphic presentation of the percentages by years of study of those who have resorted to various ways to weaken

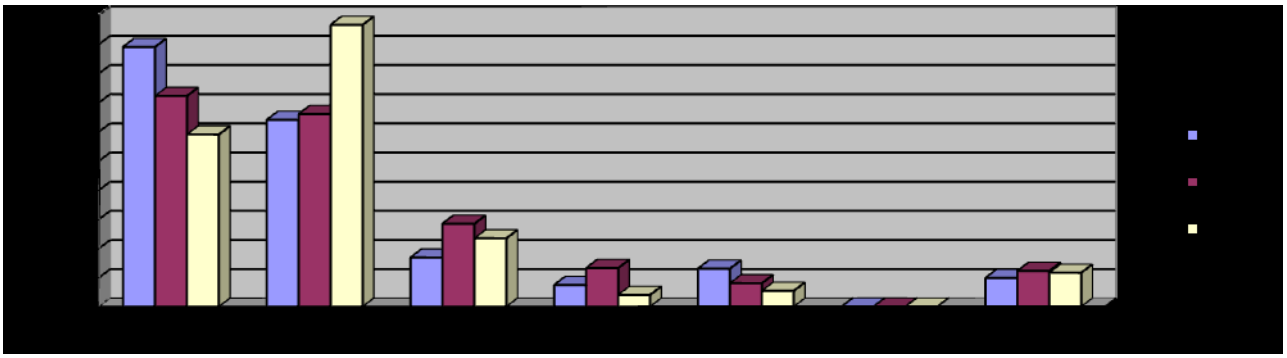


Chart 3

Graphic presentation of the percentages by years of study of those who have turned to vitamins / nutritional supplements

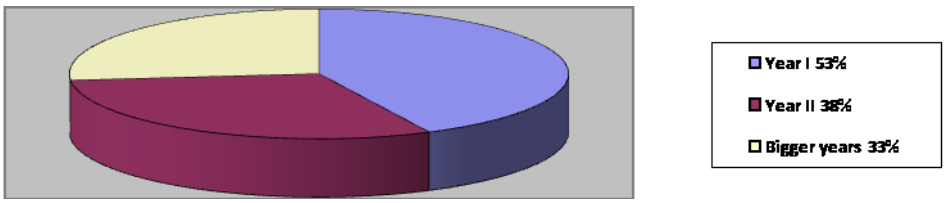


Chart 4

In terms of physical activity on the three days of the week, a significant is him lessons at 10-12, which occur 16% and 14%. Hence we conclude that the preference of female students to make exercise aimed at 10 days (table. 2).

Activigrama			
Day/week		Subjects	Share%
Monday 1	Time 10-12	22	11%
Thursday 2	Time 10-12	32	16%
	Time 12-14	25	12,5%
	Time 14-16	23	11,5%
	Time 16-18	24	12%
Friday 3	Time 10-12	28	14%
	Time 12-14	26	13%
	Time 16-18	20	10%

Table no. 2

Discussion

Results of the study points out that young students are concerned to weaken, these trends are correlated with exposure to the messages and images in the media, but also socio-cultural influences, which aggressively promotes the fact that success is determined by the presence of fat mass as reduced. To achieve the desired weight, many young students included in the study, acknowledged that appeals mainly to physical exercise (aerobics fitness) and food restrictions. Engaging in physical activity has a beneficial role in maintaining an appropriate weight and good health. It is very important that sport should be accompanied by a balanced diet to ensure liquidity needs and the macro-and micronutrients. There is the risk involved in exhausting physical activities, accompanied by an inadequate diet. Moreover, food restriction for weight reduction (given that is not monitored by a specialist in nutrition), may lead to imbalances and negative health effects in general.

Conclusions

1. Our study highlights the need to implement among young students of courses and depth information to help them have realistic attitudes regarding their body composition and at the same time to acquire knowledge and skills to enable them to adopt a healthy lifestyle .
2. The programs should include information about the importance of engaging in organized physical activities and the importance of adopting an active lifestyle together with a balanced diet, appropriate age, pathological anatomic features and the kind of physical activity performed over a week.
3. The fact that many young students faced problems with its own management body mass, it is important to include them in the Counseling Center psychomotrical (already founded about a year at the University of Bucharest) where by certain programs (in collaboration with specialists) can help students to adopt healthy eating and getting a proper body mass.
4. Implementation of information (through the site defs, the public relations of the UB and the ASUB), to educate young students to adopt a healthy lifestyle benefits correlated with physical activity practiced regularly.

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ARGUMENT FOR OBTAINING AN OPTIMUM PHYSICAL CONDITION

FINICHIU MARIN[1]

Abstract

Purpose: Determining the current level of physical condition manifestation of students enrolled in professional study groups and informing community members about specific responsibilities and divided in order to maintain an acceptable level of physical condition of youth. The life of modern man is increasingly technologically and automation dependent, resulting in almost completely replacing the physical effort. Today, almost no one moves on foot, even when the distances to travel are very small, and climbing the stairs without using the lift is almost inconceivable. Walks, practicing football in the school yard, riding a bicycle through the park, everything that means movement in general are gradually replaced by computer gaming, internet surfing and watching TV. Such activities stimulate the mind, but ignore the body, and long-term implications are not beneficial.

Methods: Research methods used in this research are part of the private and processing methods category, analysis and interpretation of data collected by the study. Initial testing and final test was done using the Harvard test of general physical condition.

Results: Optimizing the physical condition of young, independent driving activities, based on physical education and sport specific means, is conditional on the level of expression of the motor capacities, functional capacities of each individual but also of the objectives arising from future profession requirements. The lesson of physical education and independent activities ensure training continuity, from one educational cycle to another, establishing an optimal balance between individual physical condition and learning specific motor skills for physical education and sport, but also a gradual gradation of effort.

Conclusions: Implementation of this program of aerobic gymnastic combined with long term running over the 60 days allowed us to conclude that the difference between the calculated arithmetic averages are significantly different at the threshold of significance $p < 0.01$, so the research hypothesis is validating.

Adapting the body to moderate effort, which is what originally defined the term of physical condition can be achieved and maintained only through constant and gradual increase in the level of physical demand placed on the body. The recipe for a healthy lifestyle is exercise used constantly, correct eating habits, active rest. Maintaining the permanent normal health status is a difficult test that each of us must go daily. The claim that it is a very close connection between a normal lifestyle and longevity is not new to anyone.

Key words: optimum physical condition, specific means, lesson, physical education

Introduction and research objectives

Knowledge and practice of systematic and rational exercise, combined with proper nutrition, is defined by foreign experts as being fitness (in Romanian, physical condition), the term has recently entered our vocabulary and is a set of methods and physical exercises, specific to different sport branches, in order to obtain optimal physical condition.

Fitness is being translated as matching, health, shape, feeling good; other sources explain the term as "a complex of activities, in order to get into shape, including musculature, stretching and cardio-respiratory training [Le Petit Larousse, 2004].

Through an optimal physical condition it is established an efficient ratio between specific individual characteristics (personality, age, sex, general physical structure) and physical effort made in solving the motor duties of physical education lesson and not only [M., Finichiu, 2009].

The main objectives of individual physical condition research are:

- creation of physical exercise programs and differentiation requirements of each individual by detecting the useful indicator for the development/maintenance of optimal physical condition;
- achieving an appropriate framework for the

[1]Physical Education and Sport Department, Petroleum - Gas University of Ploieşti, ROMANIA
Email: finichiu1@yahoo.com
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individual to express freely, creatively, to discover, demonstrate initiative;

- understanding the application capacity, and interpret the programming aspects of the development/maintenance of physical condition;
- collection of updated information with regard to addressing program development/maintenance of physical condition;
- acquisition of new acts and motor actions aimed at enhancing the motor baggage and their application in appropriate situations thereby improving the expression level of fitness.
- continuing the practice of physical exercise and after years of academic study to enhance the manifestation level of the motor capacities;
- social-professional integration.

Increasing the efficiency of individual fitness [I.L., Hidi, 2007] is achieved by:

- motor support development: strength, endurance, strength, muscle elasticity and joint mobility, coordination abilities;
- increase support operational efficiency: the respiratory system, cardio-vascular system, metabolic processes, nervous system, immune system;
- increase efficiency by lowering the overall physical structure of body fat and body shape to adapt to individual requirements;
- Training the general feeling well of the "I" (body, mind, spirit).

Aerobic Gymnastics is a sport of physical activity, with multiple positive meanings with the main benchmark for motor and mental ability of the individual, with beneficial effects on physical fitness and health.

Aerobic Gymnastics is a maintenance gymnastics that is integral part of aerobic exercise (jogging, cycling, walking long distances, swimming aerobic dance, etc.) and that runs with musical accompaniment.

Systematic practice aerobic gymnastics and running lengthy cover the main muscle groups – superior and inferior members, abdomen, back, - with complex and long-term effects:

- significant reduction in the risk of monotony and repetition;
- facilitate the establishment of the well;
- increasing the manifestation level of resilience capacity and motor coordination;
- improving coordination and motor balance through choreography;
- improving the cardio-vascular system activity (strengthening heart muscle, improving blood circulation, normalize blood pressure).

Practicing physical exercise as aerobic gymnastics and running of duration has some advantages:

- reduces/maintains body weight;
- improving the cardio-vascular and respiratory functions;
- reduction of blood cholesterol;
- balancing and harmonizing body shapes;
- provides attractive effort development by linking movement with music.

Research hypotheses

The research was based on the following working hypotheses:

- Design and practice an exercise program for the development/maintenance of students' physical condition is the prerequisite for future progress of individual optimal physical condition, valued by independent physical activity and maintaining wellness.
- Specific means of physical education and sports, and various working conditions, lead to improvements in the manifestation of motor skills as a factor favoring the improvement of physical condition.

Research methods and procedures

The experiment consisted of a program of aerobics in the extra-physical activity over 60 days (April and May, academic year 2009-2010), and long running, moderate tempo during physical education classes, 15-20 minutes; making the initial test and final test using the Harvard Test of general physical condition. Extra-physical training sessions are included in the plan of complementary activities of the Department of E.F.S., 2 sessions per week lasting 30-45 minutes.

Program of aerobics gymnastics and long running was held on the sport base of U.P.G. Ploiesti, comprising a total of 35 students (20 boys and 15 girls) I and II years of professional study, clinically healthy.

For the good development of the experiment were used proper methods of investigation among which - the experimental method, observation, measurement and recording method and methods of processing and interpretation of collected data - statistical and mathematical method and graphical method.

The used research methods and techniques have been complied with the rigors of a high-level scientific research, respecting the choice of subjects under investigation, gathering and storage of data, measuring instruments etc.

The Harvard Test [H.,Barrow and R., McGee, 1973] aims to measure the overall ability of the body and especially the heart and circulatory system. The test consists of stepping on and off a bank into a preset time period, followed by recording their pulse rates and lasts for 5 minutes, the going up/downhill cadence is of 30 cycles/minute (a cycle consists of 4

times, from lowering the two-stroke with both feet, the length of the cycle time is two seconds).

Pulse is recorded from the carotid or radial artery at intervals of one minute, two or three minutes after the finishing of the task, for 30 seconds, forming the sum of the pulse.

Fitness index is calculated by applying the formula: ***ICF*** = *duration of exercise (seconds) x 100/2 x sum of the pulse*. The assessment of the recorded results is made with reference to the norms and established qualifications devised by the authors of the imagined tests as follows: *Excellent* <90; *Good* between 80 - 90, *Medium* between 65-80, *Sub-medium* between 1955-1965, *Weak* > 55.

Long running has as purpose the physical fitness component development, cardio-respiratory resistance. To obtain high effect on this component of fitness, physical exercise is performed with high or moderate intensity of effort, the effort is taking is aerobic and is developed in the conditions of relative balance between demand and supply of O_2 - steady state [T., Ardelean, 1982] for larger working time (30 - 40 minutes), which have the effect of increasing heart rate gradually and slowly, reaching values of the target area, 155 p/minute [A., Bota, 2006].

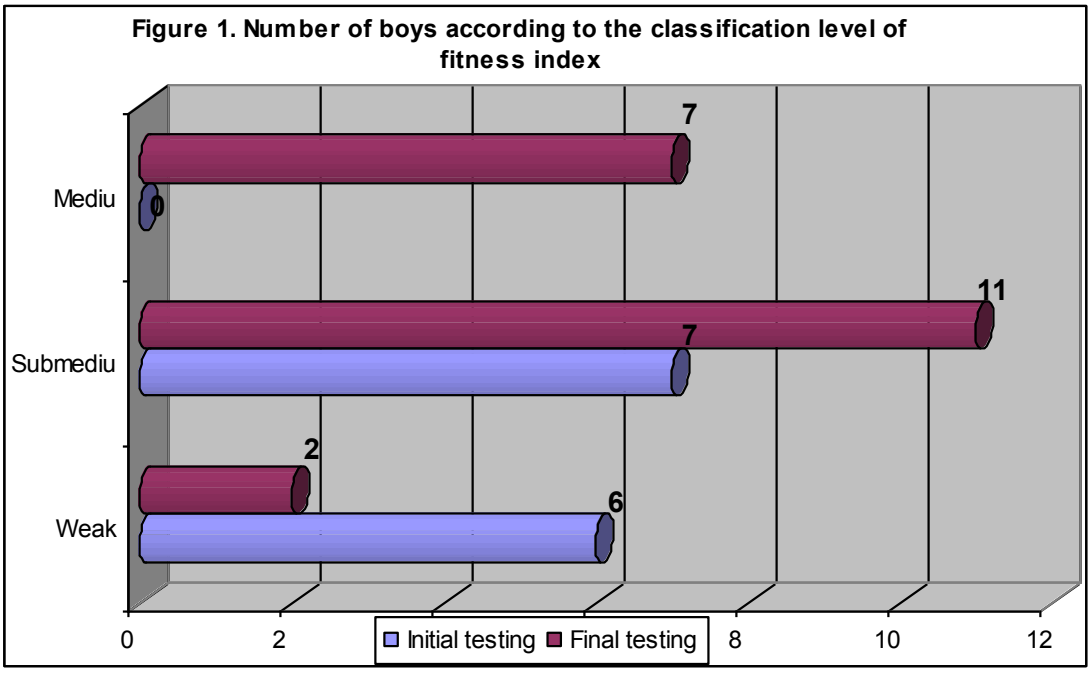
Research results and their interpretation

Processing and interpretation of collected data (Table 1 and Table 2) was achieved by calculating the arithmetic mean (X), standard deviation (S), coefficient of variability (Cv%), the amplitude of the string of data (W), average error estimation (EEm) and significance by calculating the difference between the means of "t" [A., Dragnea, 1984].

In the absence of a database for these tests, reports were made based on the results obtained after the initial and final measurements, presenting the following case, by sex:

Male students (table 1)

❖ Calculated *arithmetic mean*, X = 57,14, for the sample of boys (Figure 2) is held after the assessment scale used by the authors of the test, at the qualifier "sub-medium". Of the 20 students enrolled in the experiment, after initial testing, six students, representing 30%, have a rating "poor", the results calculated had the value under 55, and 14 students, representing 70%, had recorded values of fitness index between 55 - 65 rating "sub-medium". After the final testing of the arithmetic mean fitness index was X = 65,46 which is a grade "average" for the pattern of male students; two students, representing 10% had a physical condition index at the qualifier "weak", 11 students, representing 55% had a physical condition index at the qualifier "sub-medium" and seven students, representing 35% had a physical condition index rating stood at "medium" (Figure 1).



❖ *The coefficient of variation* Cv% calculated, presents us an approximate percentage ratio of standard deviation and arithmetic mean, as follows: after initial testing, the boys team has a poor uniformity Cv = 22,99%, after final testing results achieved by the boys team presents an average homogeneity Cv% = 19,42%.

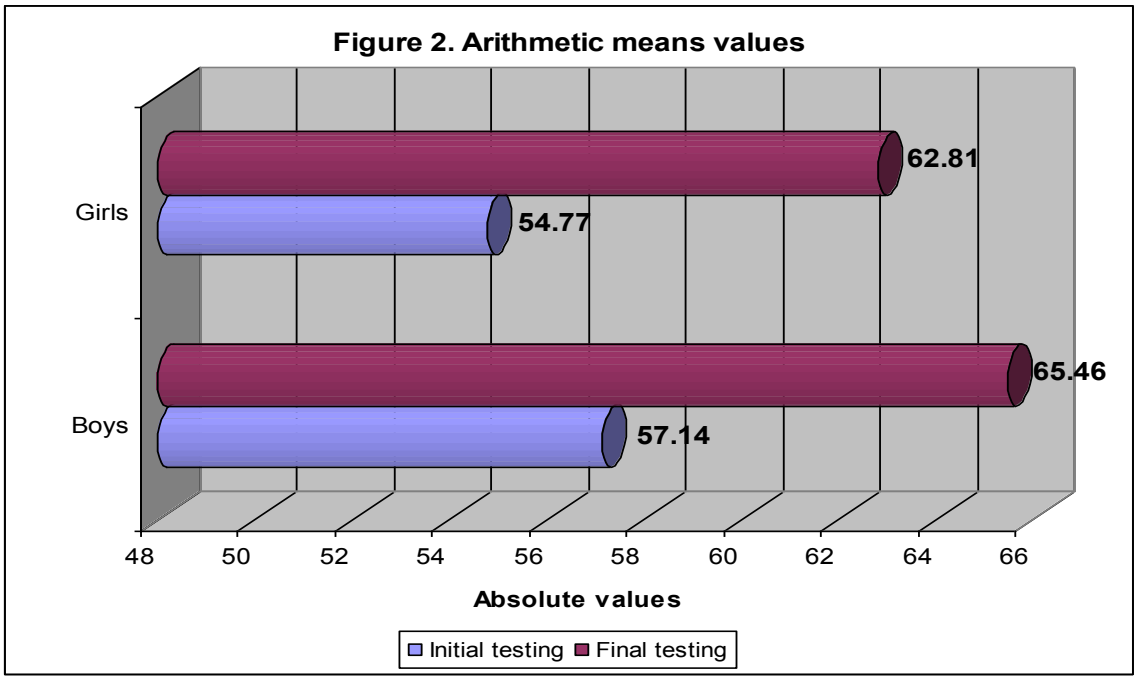
❖ *The magnitude results from range data* covers a range of 47,11 points after the initial testing and after the final testing of 46,61 points, which indicates that the results obtained by this team at the final testing are more grouped than those of the initial testing.

Table 1. Calculated statistic indicators – Harvard Test

	Statistic indicators	Initial testing	Final testing
Male students	**X**	**57,14**	**65,46**
	S	13,13	16,32
	Cv%	22,99	19,42
	W	47,11	46,61
	EEm	Trust limit situated between 57,14 ± 3,38 (53,76 ÷ 60,52) at p<0,01, trust degree of 99%	Trust limit situated between 65,46 ± 3,17 (62,29 ÷ 68,63) at p<0,01, trust degree of 99%
	t	t = 3,96 difference significantly different at p<0,01, trust degree of 99%	t = 6,48 difference significantly different at p<0,01, trust degree of 99%

❖ *Estimating the average error calculation* presents a fit within the values 53,76 ÷ 60,52 (57,14 ± 3,38) for the arithmetic mean, after initial testing, representing the trust interval of the mean at the significance threshold p<0,01. Confidence limits of arithmetic mean calculated after the initial testing are 53,76 and 60,52 and the real average is in this value range. After final testing, calculation of average estimation error is within the range value EEm 62,29 ÷ 68,63 (65,46 ± 3,17), representing the confidence interval of the average significance threshold p <0.01. Confidence limits of arithmetic mean calculated after the initial testing are 62,29 and 68,63 and the average real value is in this range.

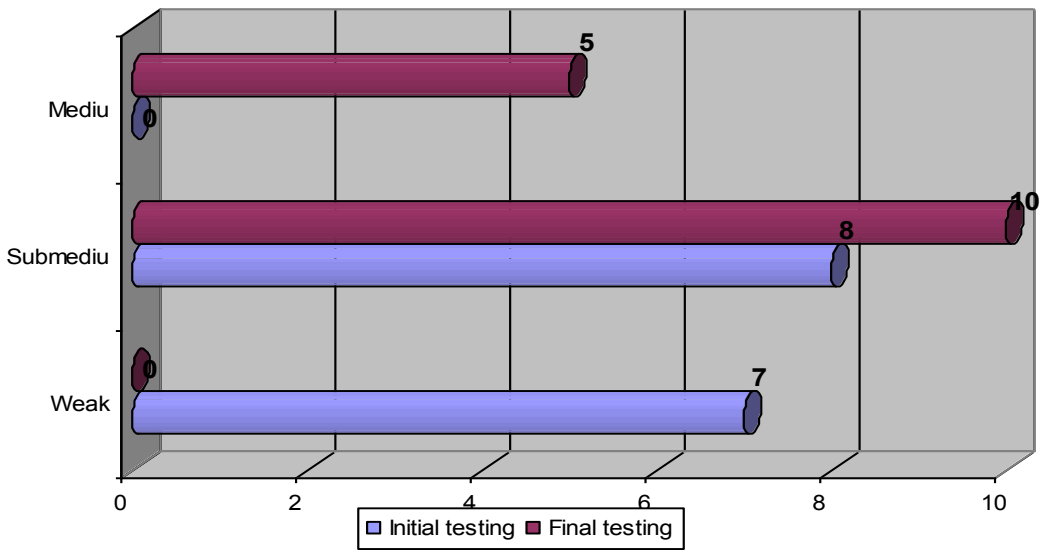
❖ *Calculation of significance between the two means* - test "t" = 3,96, one can find that is greater than the value of "t" in Fischer's table, so the difference between the two averages is significant at the threshold of significance p <0,01, the research hypothesis is validated, after initial testing; after the final test, t = 6,48, one can find that is greater than the value of "t" in Fischer's table, so the difference between the two averages is significant at the threshold of significance p<0,01, the research hypothesis is validated.



Female students (table 2)

Calculated *arithmetic mean*, X = 54,77, for the sample of girls (Figure 2) is situated, after the assessment scale used by the authors of the test, at the qualifier "weak". Of the 15 female students included in the survey, after the initial testing, seven students, representing 46,6%, recorded a fitness index value of the qualifier "weak", the results were calculated as the value of 55, and 8 students, representing 63.43 % experienced physical condition index values ranging from 1955 to 1965 qualifier "sub-medium". After the final testing, the arithmetic mean fitness index was X = 62,81, the qualifier "sub-medium" for the sample of female students; five students, representing 33,3% had recorded a physical condition index situated at the qualifier "medium", 10 female students, representing 66,6% had a physical condition index at the qualifier "sub-medium" (Figure 3).

Figure 3. Number of girls according to the classification level of fitness index



❖ *The coefficient of variation* Cv% calculated, representing the approximate percentage ratio of standard deviation and arithmetic mean, after initial testing (Cv% = 17,45%) and final (Cv% = 19,67%), a team of girls with a medium uniformity.

❖ *The magnitude results from range data* covers a range of 37,98 points after the initial testing and 40,11 points, after the final testing, which indicates that the results from the initial testing of this sample are more clustered than those of final testing .

❖ *Estimating the average error calculation* presents a fit within the value 49,60 ÷ 58,94 (54,77 ± 4,17) for the arithmetic mean, after the initial testing, representing the confidence interval at the average significance threshold p <0,01. Confidence limits of arithmetic mean calculated after the initial testing are 49,60 and 58,94 and the average real value is in this range. After final testing, calculation of average estimation error is within the range value EEm 58,04 ÷ 66,58 (62,81±3,77), representing the confidence interval of the average significance threshold p <0,01. Confidence limits of arithmetic mean calculated after the initial testing are 58,04 and 66,58 and the average real value is in this range.

Table 2. Calculated statistic indicators - Harvard test

	Statistic indicators	Initial testing	Final testing
Female students	**X**	**54,77**	**62,81**
	S	14,56	13,78
	Cv	17,45	19,67
	W	37,98	40,11

	EEm	Trust limit situated between 54,77 ± 4,17 (49,60 ÷ 58,94) at p<0,01, trust degree of 99%	Trust limit situated between 62,81 ± 3,77 (58,04 ÷ 66,58) at p<0,01, trust degree of 99%
	t	t = 2,78, difference significantly different at p<0,01, trust degree of 99%	t = 4,28, difference significantly different at p<0,01, trust degree of 99%

❖ *Calculation of significance between two means* – "t" test = 2,78, one can find that is greater than the value of "t" in Fischer's table, so the difference between the two averages is significant at the threshold of significance p <0,01, the research hypothesis is validated, after initial testing. After the final test, t = 4,28, one can see that is greater than the value of "t" in Fischer's table, so the difference between the two averages is significant at the threshold of significance p <0,01, the research hypothesis is validated.

Through the lesson of physical education and self employment to ensure continuity from one educational cycle to another, establishing an optimal balance between individual fitness and learning specific motor skills for physical education and sport, but a gradual gradation of effort.

Conclusions

1. Implementation of this program combined with aerobic exercise during the period running from 60 days allowed us to conclude that the difference between the calculated arithmetic averages are significantly different at the threshold of significance p <0.01, thus the research hypothesis is validated.
2. Arithmetic averages calculated by the two tests indicate that this program used had an efficient effect on the expression level of fitness index of the two samples of students.
3. Calculation of variability within the results of the two groups after the two tests in the category of teams with low and medium consistency, estimate the average error after the two tests, we show that these confidence intervals are calculated at the threshold of significance p <0, 01.
4. The significance of the two areas indicates that they are significantly different with a confidence level of 99%, at the significance threshold p <0.01.
5. Need for physical activity at least one hour per day, especially by the young, the overall benefit of physical activity is improving the health and ability to perform certain activities, with an acceptable productivity for a longer period of time .
6. Improving the optimal level of physical condition manifestation, should be done in a total equilibrium state in relation to future graduate of a technical college; health is the issue that underlies the evolution of man and on this basis, it can build a high level of individual physical condition expression.
7. In addition to its compensatory psycho-biological function, physical education and sport contribute to stimulating the intellectual capacity, to increase the level of theoretical knowledge of students.
8. Adapt the body to moderate effort, which originally defined the term fitness can be achieved and maintained only through constant and gradual increase in the level of physical demand being placed on the body. Recipe for a healthy lifestyle is exercise used constantly, eating habits, active recreation.
9. Maintaining permanent normal health status is a difficult test that each of us must go daily. The claim that it is a very close between a normal lifestyle and longevity is not new to anyone.

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CONTRIBUTION OF PHYSICAL EXERCISE IN REHABILITATION/SOCIAL INTEGRATION OF PEOPLE WITH DISABILITIES

FINICHIU MARIN[1]

Abstract
Purpose: Physical exercise can represent dimensions of an individual's personality, which allows us to use a "motor treatment" based on an operational program in the purpose of freedom, improvement and integration of personality. Operational education program "Therapy through movement" consisted of applying a technical approach, simple exercises for training/development of correct breathing, gestures education and fighting stress. The purpose of this research is to remove physical blockings, clenching the muscle, imbalanced movements that are characteristic of persons with disabilities for activation, in a positive sense, of the psyche and their integration into society.
Methods: Research methods and techniques were based on observation, experimental methods, measurements and recording methods as proper investigation methods and methods of processing and interpretation of collected data: statistical and mathematical method and graphical method.
Results: Applying this operational educational program "Therapy through movement" confirmed the working hypothesis for the knowledge complexity of disability and achieving rehabilitation/social integration of persons with disabilities. For the functional test, the arithmetic mean for both boys and girls, from initial testing to the final one is an obvious increase; the final testing of the motor tasks revealed the progress of both boys and girls, compared with initial testing.
Conclusions: On the basis of the processing and interpretation of results we conclude: the practice of these physical exercises and the establishment of certain relationships with others made easier the rehabilitation/integration of persons with disabilities, in the environment and society; a disabled person needs to be recognized for what he is and as he is, therefore, must be helped to participate as much as possible in the social life, providing them with appropriate help and taking the necessary measures. Movement therapy must include the development of general and fine movement, of the motor skill, the education of static and dynamic balance, rhythm and movement coordination, capacity development of perception, orientation and spatial-temporal organization etc. Integrating children with special needs can be achieved if there is a permanent collaboration between pupils, teachers, parents, counselors, NGOs and other viable partners that may be involved.
Key words: physical exercise, rehabilitation, integration, persons with disabilitie.

Introduction

In any society there are certain people who, because of deficiencies, disabilities can not "integrate" into the community by their own forces. Disability, people with disabilities issues, before being emotional problems are social problems.

Therefore society through various mechanisms and levers, should also aim at the real needs and necessity of people with disabilities to ensure full respect for their interests, dignity and their rights in all circumstances and in relation to any reference system in order to integrate them as full members of society.

In education, the "children with special educational needs" are assigned children with special educational needs and requirements are derived primarily from physical, mental, sensory, language, socio-emotional and behavioral disorders often associated, regardless of their severity.

Special Education Unit is an important social environment and rehabilitation of persons with disabilities [C., Cucos, 1999]. Application of motion therapy program is determined by the type of the remaining disability and functional abilities of the individual in this case.

Physical exercises are important segments of motion therapy program, helping individuals with disabilities to develop both motor and social-affective. Well-being can be improved by using repeatedly driving skills, affective-cognitive and communication.

Social integration [V.,Horghidan, 2000] expresses the individual's positive attitude towards school by:

- develop mental condition;
- increase the accessibility of educational actions;
- support individual effort on training/education a strong motivation of the educational process;
- a high level of compatibility between the individual and the effort required of the potential of educational activities;
- educational requirements to be consistent with individual potential.

Rehabilitation of individuals with disabilities was achieved so far, based on the old "pity" model. Today it is used the "human rights" model by recognizing that they have the same rights and resources as other members of society [A., Albu, 1999].

Movement therapy is based on the concept

[1]Physical Education and Sport Department, Petroleum - Gas University of Ploieşti, ROMANIA
Email: finichiu1@yahoo.com
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that achieving improvements in disabled person's body, at the nervous system level, improvements can be achieved physical and psychological [M., Epuran, 1976]. Movements of the individuals can classify the persons with disabilities as follows:

a. after the contact of the person with the world, the degree of binding with reality - *energetic persons* (quickness of movement) and *people less energetic* (slow movement);

b. after individual emotions - *people hyper-emotive* (unstable, emotional) and *people indifferent* (apathetic).

Research hypothesis

By determining the psychological and motor possibilities defining the person with disability, with what they have significant and which distinguish it from others of the same age and sex, it can be realized the knowledge of the disability complexity.

Research procedures and methods

The research took place in grades VI and VIII of the Special School no. 2 of Ploiesti, and consisted of 15 boys and 10 girls, people with medical deficiencies moderate.

The research was conducted during 30 physical education lessons, in the second quarter of the school year 2009-2010 and consisted of applying the lessons of physical education means from the operational educational program in "Therapy through movement".

Functional tests (spirometry = measure *vital lung capacity* is expressed in cm^3) and motor (lower limb muscle strength by the task *jump from standing position*, upper limb muscle strength by *throwing oina balls* test and shift speed by *speed running test the distance of 25 m, starting from the feet*) were made in the lessons no. 1 and 30.

Selection of the means used by the titular teacher, was in agreement with the research's author and in concordance with the physical education curriculum and the curriculum of the school.

For purposes of the experiment were used proper methods of investigation: observation, measurement and recording method, experimental method and methods of processing and interpretation of collected data: statistical and mathematical method and the graphic method.

By the use of the operational educational program involving the movement can be addressed topics that pertain to membership requirements, inspection requirements and the need for affection.

Operational education program *"Therapy through movement"* includes simple exercises for training/development of a correct breathing, education and combating distress gesture:

1. *Simple exercises for training / development of a correct breathing* - is well known that a correct breathing and respiratory hygiene is beneficial in the rehabilitation/integration of persons with disabilities [A., Dragnea, et al., 2000].

For learning a correct breathing some basic rules must be followed: the exercises will be conducted in a well-ventilated, with windows wide open or if weather conditions permit, outdoor inspiration (breathe) is performed on the nose and exhalation (remove all air from the lungs) through the mouth, these exercises are conducted in a specific order:

A. person/persons with disabilities are placed in a relaxed, comfortable position and make deep inhale movements and forced exhale by completely emptied of air through the lungs; the condition will not cramp individual basis and will always remain relaxed.

B. breathing movements will take place in the way: 1. respiration to proceed in a balanced way between the two phases, air inhaling slowly through your nose, exhaling all air from the lungs; 2. air into the lungs will be maintained for three seconds after a deep inspiration and exhale slowly through the air remove – dosage: this time of the exercise will run for 5-6 minutes; clarification - if you can, the air in the chest can be maintained more than three seconds. 3. awareness of diaphragm muscle action by performing diaphragmatic breathing with the placement of the left/right hand on the abdomen and implicit of the hand placed on it; dosage - will perform diaphragmatic breathing for 6-8 minutes, specifying - phase begins after the breathing out stage.

C. breathing exercises repeated until the person/persons with disabilities is forming a uniform rate of breathing. Recommendations for educating a uniform, complete pace of breathing: the exhalation phase to be achieved in a greater time (removing air from the lungs) than the phase of inspiration by the rule - two seconds, pulling air into the chest and four seconds, remove the air chest.

2. *Gestures education* - can be achieved by the action on the tone and style of the particular characteristics (amplitude, energy, direction, etc) printed movements of the person or persons with disabilities to communicate with others through gestures such as: "a way of saying" and "kind to do".

The exercises consist of imitating the repetition of gestures and appearances by people who are given certain attitudes: anger, fear, kindness, courage, leading to the psychological orientation towards this type of behavior, according to reproduce a sense of its expression. By educating gestures can achieve a normalization of the function of gestures disrupted, forming a "new way of being".

3. *Fighting distress* - is realized through the execution of physical exercises (which can be used by normal people not only to those with disabilities), according to medical recommendation, the type and degree of disability of each individual, namely:

A. Outdoor walks of 7 to 12 minutes by speeding up your heart rate and reduced state of nervous tension.

B. Climbing and descending stairs (who can) for 3-6 minutes to soothe the nervous system.

C. Seated in a comfortable position, rotation, as relaxed as possible, shoulders forward and backward, dosage 10 to 12 repetitions.

D. From the standing position with feet slightly apart, torso bent slightly forward, allow your arms to hang forward, relaxed, dosage - 3-7 repetitions.

E. From standing position, sitting or lying down, running on the flexion of metacarpal phalanges and carpal (wrist tightening) and imagine all the tension that runs into fists, running for 3-12 seconds, dosage - 5-10 repetitions .

F. From the standing or sitting position, eyes closed, neck relaxed, imagine that nose is provided with a chalk on a blackboard and write our name, dosage - 2 - 3 repetitions.

G. From the standing position with feet slightly apart, the performance of upper limbs movements (that is looking to be involved in these movements throughout the body) to simulate cutting, turning and hitting a specific object by kick boxing, dosage 5 to 10 seconds, repeat 2 - 4 times.

Research results and their interpretation

Data collected and placed in tables were centralized statistically settling: the arithmetic mean (X), standard deviation (S), coefficient of variability (Cv%) and mean estimation error (EEM) [M., Niculescu, 2002].

1. Functional test (table 1 and 2, figure 1).

Vital capacity represents the amount of air you can exhale with a forced ventilation, which occurs after a deep inspiration, the lungs, the subjects are not bound by time; were calculated the following values of statistical indicators:

❖ The arithmetic mean for both boys and girls, from initial testing to the final is an obvious increase in the difference between the two tests are: 310,20 cm^3 for boys and girls of 400,16 cm^3;

❖ The calculation of Cv% coefficient of variability presents, both for the sample of boys and girls, medium homogeneous groups, range 10-20%;

❖ Estimated arithmetic mean error gives us a values between 2821,12 ÷ 2989,12 (2900,12 ± 89) for the arithmetic mean, after initial testing and 3109,12 ÷ 3311,12 (3210,12 ± 101) after the final testing for boys, representing the arithmetic mean of the confidence interval to the threshold of significance p <0,01, 99% confidence level. For girls the confidence interval for the arithmetic mean value is in the range 2008,23 ÷ 2212,23 (2110,23 ± 102) after initial testing and 2404,23 ÷ 2617,23 (2510,23 ± 106) after final testing, representing the confidence interval of the arithmetic mean at the threshold of significance p <0,01, 99% confidence level.

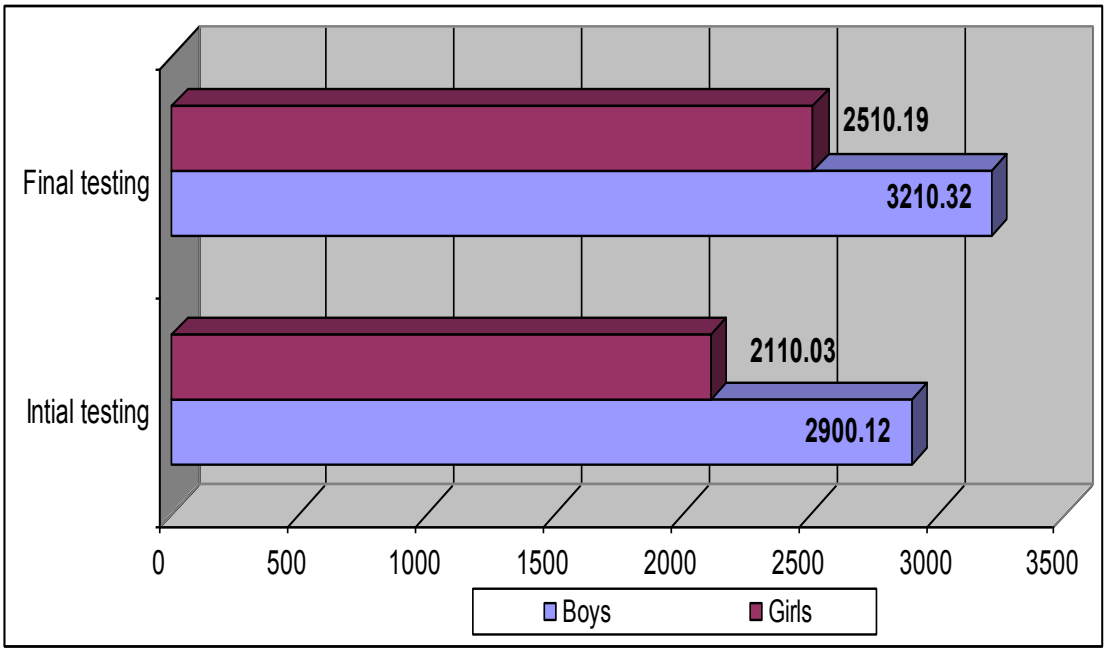

Figure 1. *Dynamic functional test arithmetic means*

Table 1. *Calculated values of statistical indicators - initial testing*

Tasks / Statistical indicators		Vital capacity (cm^3)	Speed running (seconds)	Jump in length from standing position (cm)	Throwing the oina ball (m)
Boys	X	**2900,12**	**5,52**	**156,44**	**29,12**
	S	121,57	0,45	6,12	7,81
	Cv	15,01	12,36	15,24	19,11
	EEm	2900,12±89	5,52±0,41	156,44±32,01	29,12±3,16
Girls	X	**2110,03**	**6,33**	**134,21**	**18,77**
	S	95,32	0,57	7,03	8,57
	Cv	16,25	14,32	16,33	17,77
	EEm	2110,23±102	6,31±0,55	134,21±21,14	18,77±4,12

2. Motor tests (table 1 and 2, figure 2).

The running speed test on the distance of 25 meters, standing start, through which was tested the shift speed of the subjects:

❖ The arithmetic mean – after the final test was calculated as an arithmetic mean best by 0,32 seconds, compared to the initial testing of the sample of boys and 0.22 seconds for the sample of girls.

❖ The coefficient of variation Cv% after both tests, indicating groups with a medium homogeneity at both girls and boys, between 10-20%.

❖ Estimated arithmetic mean error calculation gives us the following situation: for boys – the arithmetic mean is located in the confidence interval 5,09 ÷ 6,33 (5,52 ± 0.41), after initial testing and 4,43 ÷ 6,01 (5,22 ± 0,39) after final testing, representing the confidence interval of the arithmetic mean at the threshold of significance p <0,01, confidence level of 99%; for girls - the arithmetic mean is in the range of the confidence interval 5,46 ÷ 7,26 (6,31 ± 0,55) after initial testing and 5,16 ÷ 6,46 (6,01 ± 0,45) after final testing, confidence interval representing the arithmetic mean at the threshold of significance p <0,01, 99% confidence level.

Table 2. *Calculated values of statistical indicators - final testing*

Tasks / Statistical indicators		Vital capacity (cm^3)	Speed running (seconds)	Jump in length from standing position (cm)	Throwing the oina ball (m)
Boys	X	**3210,32**	**5,22**	**163,74**	**32,34**
	S	133,54	0,49	5,55	6,89
	Cv	14,71	13,27	14,44	19,11
	EEm	3210,12±101	5,22±0,39	163,74±36,71	32,34±3,72
Girls	X	**2510,19**	**6,11**	**147,32**	**20,87**
	S	98,52	0,51	8,11	7,65
	Cv	17,45	16,72	18,29	18,07
	EEm	2510,23±106	6,01±0,45	147,32±23,54	20,87±5,42

In the task of *jump in length from standing position*, the explosive force was tested at the level of the horizontal inferior limbs muscle, was calculated:

❖ Calculated arithmetic mean recorded a progress of 7,30 cm, compared with the initial test sample of boys and 13,11 cm for the sample of girls.

❖ Cv% coefficient of variability calculated from the two samples presents us groups with medium uniformity, both after initial testing and after the final, 10-20% range.

❖ Estimated arithmetic mean error: the sample of boys - arithmetic mean is located in the confidence interval 124,43 ÷ 188,45 (156,44 ± 32,01) after initial testing and 127,03 ÷ 200,43 (163,74 ± 36,71) after final testing, representing the confidence interval of the arithmetic mean at the threshold of significance p <0,01, 99% confidence; the sample of girls - the arithmetic mean is located in the confidence interval 113,07 ÷ 155,35 (134,21 ± 21,14) after initial testing and 121,78 ÷ 172,86 (147,32 ± 23,54) after final testing, representing the confidence interval of the arithmetic mean at the threshold of significance p <0,01, 99% confidence level.

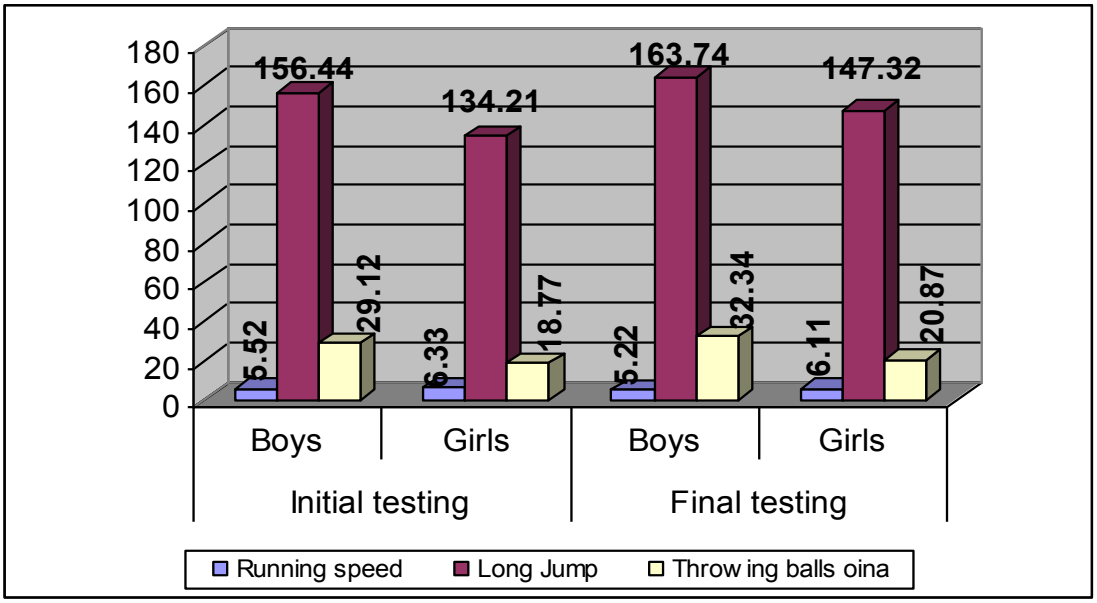

Figure 2. *Arithmetic means dynamics for the motor tests*

In the task of *throwing the oina ball*, through which we tested the explosive force at the level of the upper limbs muscles, was calculated:

❖ Arithmetic mean progressed by 3,22 m, compared with the initial test at the boys' sample and by 2.10 m for the girls sampled.

❖ The coefficient of variation Cv% presents an average homogeneity groups, 10-20% range, both for the samples of boys and girls.

❖ .Estimated arithmetic mean error EEm presents a framing within the values 25,96 ÷ 32,28 (29,12±3,16) for the arithmetic mean of the boys and the value interval 14, 65 ÷ 22,89 (18,77±4,12) for the girls, after the initial testing, representing the confidence interval of the mean at the significance threshold $p < 0,01$. The confidence limits of the calculated arithmetic mean after the initial testing are: boys 25,96 and 32,28 and 14, 65 and 22,89 girls, and the real mean is within this value interval. After the final testing, the calculation of the estimation mean error is within the value interval 28,62 ÷ 36,06 (32,34±3,72) for boys and 15, 45 ÷ 26, 29 (20,87±5,42) for girls, representing the confidence interval of the mean at the confidence threshold $p < 0,01$. The trust limits of the arithmetic mean, calculated after the initial testing are 28,62 and 36,06 for boys and 15,45 and 26,29 for girls, and the real mean is within this value interval.

Conclusions and recommendations

1. Physical exercises that can be used involve the act, action or motor activity and have at their base transposition of feelings in motion.
2. Awareness acts' scales, actions and motor activities by the person/people with disabilities make social integration possible, because the resource discovery, latent, can cope with the situation, which in another time, was blocked.
3. The becoming of movement intrinsic and their involvement in physical activity justifies their physical and mental performance always higher.
4. Movement therapy must include the development of general and fine movement, of motor skill, education of static and dynamic balance, rhythm and movement coordination, capacity development of perception, orientation and spatial-temporal organization etc.
5. Person/people with disabilities can easily adapt to movement situations and their integration can be accelerated if environmental conditions are favorable to movement.
6. Movement therapy program helps disabled people to integrate better into society and to relate better with others.
7. People with disabilities need some adjustments: reducing the area of activity, use of appropriate equipment and convenient one, introducing adapted physical education, reduction of working time, more frequent and longer breaks, the use of documents, actions and motor activities as simple as possible and reducing the pace of execution, the adaptation of the movement therapy program whenever needed.
8. The person/people with disabilities need understanding, patience and respect.
9. Physical exercises had a significant effect on the ease and take over the aggressiveness and self-aggressiveness, self-stimulation, hyperkinetic behavior and stereotypes installed at these people with disabilities and therefore may be easier to integrate into society.

10. Special education unit in all its components takes part in rehabilitation and integration of children with special educational needs; social integration of children in new social and educational environments that ensure an active and interactive participation with other children also at the local social life, is a way of scholar and social integration for them.

11. School by the actions they engaged in, components of inclusive education should encourage creating of such conditions so that the child with special educational needs can use the educational services tailored to his needs.

12. The content of special education must develop and implement progressive development programs, customized and periodically reviewed.

13. Teachers need to train and develop their individual skills, according to the purpose established for networking and communication with other teachers, parents, etc., can act as a consultant.

14. Selection of teachers in special schools should be made both by professional capacities and also based on "positive attitude".

15. Integrating children with special educational needs can be achieved based on permanent cooperation between students, teachers, parents, counselors, NGOs and other serious stakeholders that may be involved.

16. Social integration of children with special educational needs in the local community is subject to the unity and sustainability in interpersonal relationships in the social groups, the correlation between criteria and behavior, the functional interdependence of the elements of a social system or subsystem.

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OPTIONS STATISTICS ON BARCHELOR'S PHYSICAL EDUCATION AND SPORT NATIONAL EVALUATION IN 2009 BY GENDER AND EFFORT CAPACITY CRITERION

MACARESCU CRISTINA[1]

Abstract

This paper gives us a clue on candidate's options on Barchelor's Physical Education and Sport National Evaluation 2009, Bucharest, Romania, Traian High School Exam Centre and the candidates effort capacity to overcame the sportive tests chosen.

The purpose of this study is to determine the candidates profile and classify the tests chosen by type or degree of physical effort engaged by the candidate to pass it.

Methods and procedures

A hundred and ninety candidates (190), 93 female and 97 male candidates were tested by four evaluators in four sportive disciplines: athletics, gym, force and sportive games. Brief description of the tests is provided by National Barchelor's Physical Education and Sport Exam Methodology (2009) here in short.

Candidate's results is written down and marked according to National Barchelor's Physical Education and Sport Exam Programme Standards, the four evaluators giving a candidate two marks in each test. The four marks in each test by average gives us the final score and mark obtained by the candidate.

Results are presented synthetically giving us a gender statistics on tests chosen and their score. Gender preferences in athletic test: speed running 50 m (63 femae candidates, 83 male candidates), throwing a 4 kilo ball : 30 females, throwing a 7,257 kg ball : 15 males. Gym test: acrobatic gym: 33 females; horse jump: 60 females, 97 males. Force test: abdomen exercises in 30 seconds time: 52 males, 93 females; push-ups: 43 males; length jump: 2 male candidates. Sportive game test : handball: 88 females, 67 males; football: 24 males; basketball : 4 males, 4 females; volleyball: 2 males, 1 female candidate.

Discussions

We can see all male candidates opted for horse jump test in gym testing, which means only female candidates like acrobatic gym.

We can see all female candidates opted for abdomen exercise in 30 seconds time instead of push-ups preferred by male candidates in force test. Female testing push-ups is not accepted in this case study.

[1]Student Bucharest Economic Studies Academy, ROMANIA
Email: macarescucristina@yahoo.com
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Few options include sportive games like: voleyball or basketball , their prefference in this case being hadball and football , due to the practice of this sports during high-school years, or in a sportive discipline voluntarily chosen previously and practiced independently as a performance activity.

Conclusions

Candidate's profile ca be classified in three categories by degree of effort preffered and individual previously autoevaluated effort capacity: little (sporadic training), medium (sporadic training , but regularily done before the exam) higher effort capacity(regular training in a sportive discipline previously chosen to be practiced as a performance activity, intense and specific before the exam).

The importance of this study is the authenticity of data used giving us a correct local statistics for further use.

Brief description

This case study gives us the local options of the candidates on Barchelor's Physical Education and Sport National Evaluation 2009, Bucharest, Romania, Traian High School. A candidate's profile is done reviewing their options and effort capacity previously engaged to pass sportive tests. A gender options statistics is presented as well as their results (average, SD). A brief descrition of tests is also included in this paper.

Keywords: effort capacity, gender, sport, test

Introduction

The purpose of this study is to determine the candidates profile and classify the tests chosen by type or degree of physical effort engaged by the candidate to pass it.

Methods and procedures

A hundred and ninety candidates (190), 93 female and 97 male candidates were tested by four evaluators in four sportive disciplines: athletics, gym, force and sportive games. Brief description of the tests is provided by National Barchelor's Physical Education and Sport Exam Methodology (2009) here in short.

Athletic test , speed running on 50 m put together two candidates to run this distance once. Their time was written down and a mark resulted according to Anexe 2 of National Barchelor Sportive Evaluation Programme 2009 as follows below:

1	1	2	2	3	3	4	4	5	5
F	M	F	M	F	M	F	M	F	M
14,6''	12,6''	14,4''	12,5''	14,2''	12,4''	14,0''	12,3''	13,8''	12,2''

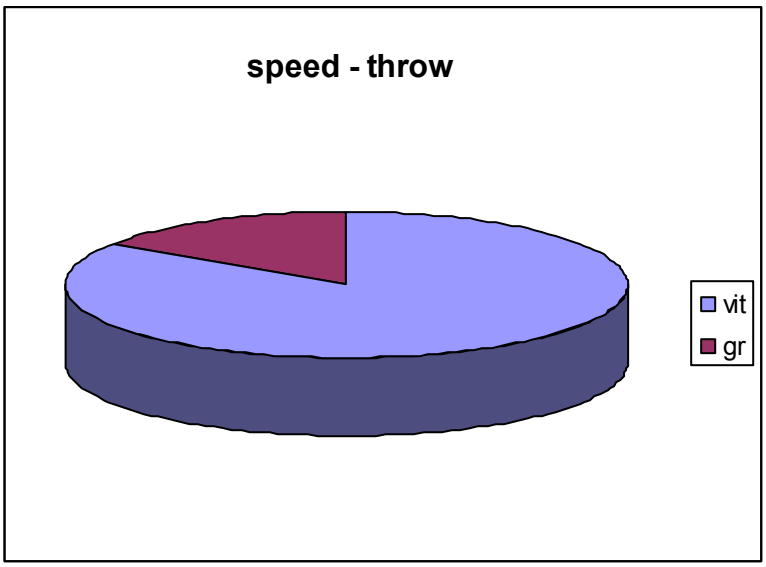
6	7	6	7	8	8	9	9	10	10
M	F	F	M	F	M	F	M	F	M
12,1''	13,4''	13,6''	12,0''	13,2''	11,9''	13,0''	11,7''	12,8''	11,5''

Female 63, male 82 candidates have chosen this tests. Mean speed is 6.946527, standard deviation 0.827242. The average value on first test is 9.821053.

Other candidates (30 females, 15 males) were tested according to their options in throwing a ball of 4 kilos on feminine test and 7,257 kilos on masculine test. Their performances were noted following the table below:

1	1	2	2	3	3	4	4	5	5
F	M	F	M	F	M	F	M	F	M
8,5m	9,5m	9m	10m	9,5m	10,5m	10m	11m	10,5m	11,5m

6	6	7	7	8	8	9	9	10	10
F	M	F	M	F	M	F	M	F	M
11 m	12 m	11,5 m	12,5 m	12 m	13 m	12,5 m	13,5 m	13 m	14 m



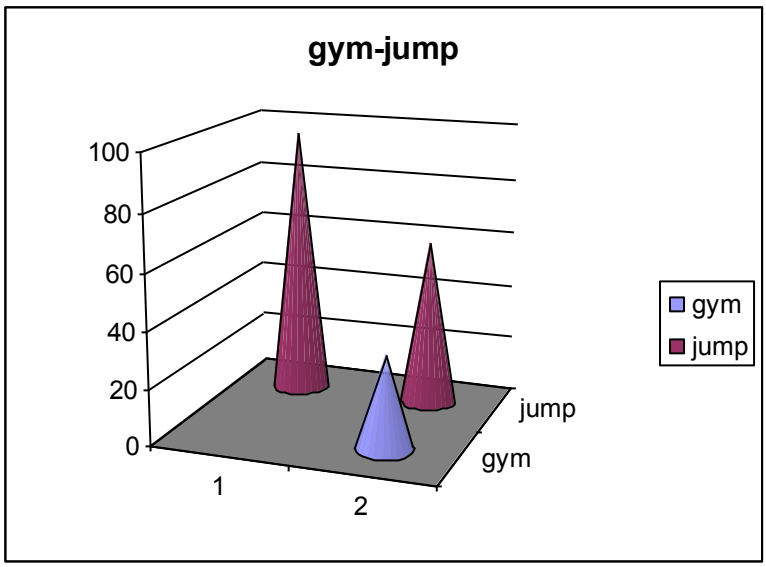
First test took place outdoor the weather being variable sometimes even raining.

The other three tests were held indoors : no air conditioning, space being very croweded and noisy.

The second test is gym test: acrobatic or horse jump.

Acrobatic gym: 33 female candidates

Horse jump : 60 female, 97 male candidates

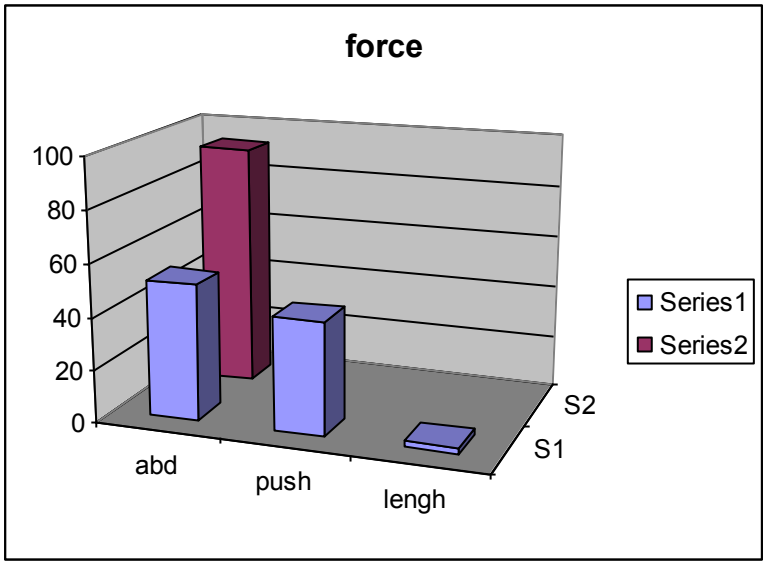


9.584211 is the average mark in second gym tests.

The third test is force either push-ups or abdomen exercises in 30 seconds time. One teacher held the chronometer and the other counted the correct executions and noted them , the final result standards in push-ups is presented below:

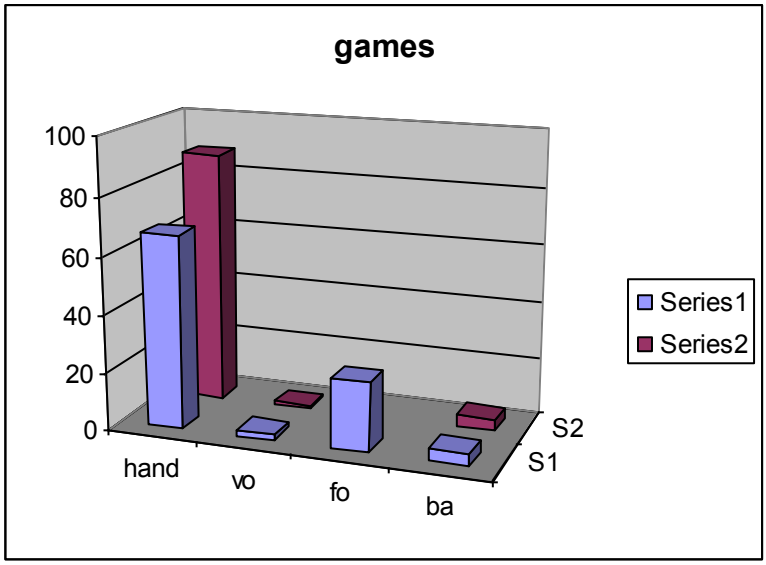
5	5	6	6	7	7	8	8	9	9	10	10
F	M	F	M	F	M	F	M	F	M	F	M
5	15	8	18	11	21	14	24	17	27	20	30

Abdomen exercises : 52 male candidates, 93 female candidates
Push-ups : 43 male candidates
Lengh jump: 2 male candidates
9.921052632 is the average mark on force tests.



The forh test on sportive games classifies our candidates like this:

- handball : 88 female and 67 male
- volleyball: 2 male and 1 female
- football: 24 male candidates
- basketball: 4 female and 4 male candidates



This tests a game structure and correct execution of technical elements used to play the game and second part tests the correlation between players who play this game and the efficiency of their technico- tactical actions. 9.126316 is the averagemark obtained in sportive games tests.

Final result's average mark is 9.5696842.

Candidate's results is written down and marked according to National Barchelor's Physical Education and Sport Exam Programme Standards, the four evaluators giving a candidate two marks in each test.

The four marks in each test, by average, gives us the final score and mark obtained by the candidate.

Results are presented synthetically giving us a gender statistics on tests chosen and their score. Gender preferences in athletic test: speed running 50 m (63 femae candidates, 83 male candidates), throwing a 4 kilo ball : 30 females, throwing a 7,257 kg ball : 15 males.

Gym test: acrobatic gym: 33 females; horse jump: 60 females, 97 males.

Force test: abdomen exercises in 30 seconds time: 52 males, 93 females; push-ups: 43 males; length jump: 2 male candidates. Sportive game test : handball: 88 females, 67 males; football: 24 males; basketball : 4 males, 4 females; volleyball: 2 males, 1 female candidate.

test	test	male	female
athletic	speed	83	63
	throw	15	30
gym	gym	-	33
	jump	97	60
force	abd	52	93
	push	43	-
	lengh	2	-
games	hb	67	88
	fb	24	-
	bk	4	4
	vo	2	1

Discussions

We can see all male candidates opted for horse jump (97) test in gym testing, which means only female candidates like acrobatic gym (33 females to have this test).

We can see all female candidates opted for abdomen exercise in 30 seconds time instead of push-ups, preferred by male candidates in force test. Female testing push-ups (no female candidate to have this test) is not accepted in this case study, nor length jump (2 male candidates).

Few options include sportive games like: volleyball (2 males, 1 female) or basketball (4 males, 4 females) , their prefference in this case being hadball (67 males, 88 females) and football (24 males, no female) , due to the practice of this sports during high-school years, or in a sportive discipline voluntarily chosen previously and practiced independently as a performance activity.

By interviewing the candidates we classified them regarding their effort capacity as follows:

- little effort capacity, which means his training is sporadic, incontinous and does not keep a high effort capacity in time

- medium effort capacity, which means sporadic training , but regularily done before the exam at least two months, achieving a good level of effort capacity during some tests

- higher effort capacity which means regular training in a sportive discipline previously chosen to be practiced as a performance activity, intense physical effort, repetability and specific before the exam. Practicing a sportive discipline regularily helps us keeping a higher effort capacity constantly.

Final result's average mark is 9.5696842 means our subjects were prepared before the tests to be held in the exam, including here specific training, because of variate physical actions demanded here and standards to be achieved to pass.

Conclusions

Candidate's profile ca be classified in three categories by degree of effort preffered and individual previously autoevaluated effort capacity: little (sporadic training), medium (sporadic training, but regularily done before the exam), higher effort capacity (regular training in a sportive discipline previously chosen to be practiced as a performance activity, intense and specific before the exam).

Gender preferences exclude push-ups, lengh jump and football in female testing, meanwhile acrobatic gym test is not a choice for male candidates in this case study.

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SOCIALISATION OF SCHOOL PHYSICAL EDUCATION OBJECTIVE CYCLE SECONDARY

MIHAILESCU LILIANA[1], ANGHEL ADRIANA

Abstract

Strong influence on the formation of the attitudes of the individual, in the case of the child, his/her primary groups, in particular family and pedagogical staff. In this context, the attitudes of others become formative attitudes of the child, having been filtered through personal experience a considerable influence in shaping the attitudes of the individual exercise and secondary groups, various social and cultural institutions, political organizations, etc. To the extent that the individual can participate in the life and work of these institutions, he forms the right attitudes, according to personal experience. The purpose is to highlight the influences of physical education discipline in the social integration of students in the school environment. The content and forms of organisation-specific, physical education is able to create an appropriate framework for both the formation of moral consciousness and the expression of moral conduct. These effects are possible because physical education entails: the need to respect a set of rules, standards effort. When you practice in physical education group, require compliance with requirements related to social relations are established between individuals, starting with those related to compliance with a majority of the work and ending with ongoing compliance with the regulations of certain competitions; required on the part of the conscious and active participation of the subjects to be able to achieve the objectives proposed; by pursuing specific forms and content accessible physical education provides satisfaction of practitioners, which reinforces the effective observance of the rules and the rules that accompany the practice exercise.

Keywords: socializing, attitude, goals, skills

Introduction

Socializing process is "a psycho-social transmission-assimilation of attitudes, values, concepts and models of behaviour specific to a group or a community with a view to training, social integration and adoption of a person. Socialization implies social learning as a fundamental mechanism for achieving the current into the assimilation of individuals into groups ", according to the Dictionary of Sociology C. Zamfir, L. Vlăsceanu (1993) the attitude is ' a way relatively constant reporting of the individual or group against certain sides of social life and to his own person "(P. Popescu-Neveanu, p. 138) it is expressed more or less openly through different symptoms or indicators (tone, gestures, words, acts, or the absence thereof), and performs a cognitive function at the same time, energy and education on conduitelor which it imposes. A strong influence on the formation of the attitudes of the individual, in the case of the child, his/her primary groups, in particular family and pedagogical staff (Y., Abernot, 1996; L. Mihailescu, N. Mihailescu, L. Ezechil, 2008) In this context, the attitudes of others become formative attitudes of the child, having been filtered through personal experience. Love the baby to disgust or certain objects are determined by the group's attitude towards these objects. A considerable influence in shaping the attitudes of the individual are secondary groups, however, and various social institutions and cultural, political organizations,etc. (L., Mihailescu, N., Mihailescu, 2009) To the extent that the individual can participate in the life and work of these institutions, he forms the right attitudes, according to personal experience.

Research purposes is to highlight the influences of physical education discipline in the social integration of students in the school environment.

Research hypotheses

- We believe that the level of for the socialization of the secondary cycle pupils is influenced to a degree of time semnifiativă of physical education of shared.
- Contribution of physical trening on social inclusion in the school environment can be identified using our industry-specific tools.
- We believe that there are differences between the level of social integration, in the school environment, students from urban to rural ones.

Research objectives. For the achievement of the aim we have proposed to achieve the following objectives of the research:

- overview of the objectives of physical education level of generality, for socializing, social integration in the community, to the end of the primary and secondary levels during the cell cycle;
- determination of the promote the integration of social physical education discipline with the aim of preventing their use to facilitate this objective of education in general;

[1]Faculty of Physical Education and Sport, University of Pitesti, ROMANIA
Email: lilimih2003@yahoo.com
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- comparison of level of socialiyation of children from rural and urban.

Content, methodology

Physical education, part of general education, pursues objectives derived from the educational ideal, formulated at a time by the company for which they are trained students. Among the General objectives which it proposes to include physical education, and that relating to the harmonious development of human personality, can influence both the prophylactic (preventive influeţelor negation) and corrective (correcting negative traits that can manifest itself at a time). The objectives of the framework and objectives of the reference specified in the syllabi of physical education. (www.edu.ro/programe), further development of the various sides of the personality of pupils: physical, motor, cognitive, socio-affective, which reveals the complexity of the goals of physical education.

In the following table are presented the objectives of the reference frame of the goal. 4 of curriculum at the secondary cycle.

Table 1. Framework for objective benchmarks 4, gymnasium

Objective reference	**reference targets of cls. aVa**	**reference targets of cls. a VI a**	**reference targets of cls a. VII a**	**reference targets of. cls aVIIIa**
O4. Development of personality traits socially inclusive.	*To integrate to act effectively in a default group:* • occupation and keeping a consistent place settled in bands gathering, marching and working; • executions in relation to one or more partners; • support and aid to one another; • encourage some in action; • the completion, by rotation, tasks involving leadership and subordination (team captain, a referee observer, performer, etc.).	*To integrate and act in a group formed spontaneously:* • practices on ad hoc sub-groups set up; • activities to bind tasks and responsibilities channelled; • training of various forms of collaboration; • challenges for groups and teams	*To integrate and act in a group formed spontaneously:* • practices on ad hoc sub-groups set up; • activities to bind tasks and responsibilities channelled; • training of various forms of collaboration; • challenges for groups and teams;	*To integrate and act in teams made up in value, according to the rules and tasks defined:* • self-esteem and acceptance of the value of the corresponding classification in group; • driving according to the tasks and rules; • practice activities in self-organization and form; *To demonstrate the desire of self-assertion in a structured training framework and capacity for assessing the results of its own objective in relation to those of colleagues*: •systematic participation in competitions and contests; • track your results and compare it with the colleagues and the rating system.

Express the attitudes toward people, ideas, outlooks, driving behaviors, aesthetic, moral values, etc., but also towards themselves, through verbal behaviour, social motive. Physical education exercises

influence on attitudinal system in the following directions:

- *attitude towards his neighbour, to the company (and through moral education);*
- *cognitive attitudes-evaluative (target and intellectual education);*
- *aesthetic attitudes- assessing the true aesthetic values (target and the aesthetic education).*

The intellectual sphere, physical education exercises his influence as a result of the measurement of intellectual operations essential for desfaşurării learning:

- *observation of driving actions; understanding the operations to be carried out;*
- *save driving actions, namely storage, recognition and reproduction;*
- *their application in different contexts, as a result of the capacity of generalization.*

An influence of the type of exercise is undertaken *primary-cognitive perceptions*, representations whose quantity and quality improving as a result of practising. To be appropriated new movements, subjects need to understand the structure of the movements, chaining their parties. Subsequently, li will be required to apply them in various conditions. Thus, higher cognitive processes are simulated – thinking (analysis, synthesis, comparison, abstraticizarea, generalization), imagination, creativity.

Influence of physical training moral sphere is exercised both in the direction of *moral conscience and moral conduct*. Moral consciousness arises from reporting the matter to the values, moral norms and rules, available in society at a time, and consists in the formation of moral notions. Meaning of norms and rules will come off gradually, depending on their complexity and the ability of understanding of the child. Notions such as the spirit of cooperation, participation, modesty, fairness reflects what is specific to a class characteristic and circumstances and requirements, moral relationships where the child is or will be involved. In parallel with the formation of moral notions and moral judgements are made by which the subjects are judged on the basis of objective criteria, the way in which the conduct of others, and your conduct is consistent with the moral imperatives of assumed moral notions. This illustrates the cognitive aspect of moral consciousness.

Moral education aims but all notions of an individual to become operational, for the purpose of their ilustrării at the level of moral conduct. To do this it takes for them to be accompanied by affective elements of consciousness (emotions, feelings, etc.). Accompanied by an emotional issue, the notions of moral personality structure is fixed.

Moral conduct reflects the emergence of consciousness in practical moral relations of the subject and consists of a suite of responses and events. Its content is given for skills and moral habits (, mutual cooperation, etc.), and positive character traits (honor, fairness).

The content and forms of organisation-specific, physical education is able to create an appropriate framework for both the formation of moral consciousness and the expression of moral conduct. These effects are possible because physical education entails:

- the need to respect a set of rules,

standards effort. When sepractică in physical education group, require compliance with requirements related to social relations are established between individuals, starting with those related to compliance with a majority of the work and ending with ongoing compliance with the regulations of certain competitions;

- required on the part of the conscious and active participation of the subjects to be able to achieve the objectives proposed;
- by pursuing specific forms and content accessible physical education provides satisfaction of practitioners, which reinforces the effective observance of the rules and the rules that accompany the practice exercise.

In this context, the teacher is available a set of methods that can contribute to the moral education of subjects:

- *verbal methods* – such as conversation, explanations, dialogue;
- *methods of organizing collective*-pairs for groups;
- *ways of solving the tasks of the motive power* – with the help of the teacher, with the help of colleagues or individually, as well as a number of means, such as: games, eventing; loads of self-organization, to form, etc.;

In order to develop the operational objectives and to design learning units correctly, according to the content associated with the objective of social integration at the secondary cycle, we proposed an was carried out on the basis of the survey questionnaire, in type inventory of the effects of socialization of education lessons in the primary cycle. The research was conducted based on survey type questionnaire to schools in urban areas no. 16 I.L Caragiale and no. 14. Davila Pitesti and rural areas to school with classes I-VIII Suseni. The research was comprised of 44 students in rural and 77 urban students, representative samples for secondary schools. Questionnaire items and responses have been both open and closed with 2-3 answers.

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QUESTIONNAIRE

1. WHICH OF TEACHING HOURS IN PRIMARY (GRADES I-IV) AI WE WORK WITH YOUR COLLEAGUES?

……

2. WHICH OF TEACHING PRIMARY HOURS OF ACQUIRED A WIN / OUTPUT WITH A COLLEAGUE CLASSMATE MUTI OR MORE?

……

3. DID YOU HAVE RELATIONS OF COOPERATION / MUTUAL AID WITH COLLEAGUES DURING WORKING HOURS TO ANY OF THE DISCIPLINES TEACHING STUDY IN CLASSES I-IV? IF YES, WHAT?

☐ YES ☐ NO DISCIPLINE.....

4. AI WAS HELPED BY A COLLEAGUE OR COLLEAGUES MORE TIME PHYSICAL EDUCATION?

☐ YES ☐ NO ☐ SOMENTIMES

5. PHYSICAL EDUCATION IN TIME YOU MADE FRIENDS (sympathy)?

☐ YES ☐ NO ☐ SOMENTIMES

6.PHYSICAL EDUCATION IN TIME YOU MADE ENEMIES (dislikes)?

☐ YES ☐ NO ☐ SOMENTIMES

7. GAMES AT TIME OF PHYSICAL EDUCATION learned you like to be a member of a team REGARDLESS OF WHO IS THIS FORMAT?

☐ YES ☐ NO ☐ SOMENTIMES

8. LESSONS FROM THE CARE OF YOU PRIMARY BOARD CLASS KNOW BETTER?

……

9. TIME IS IMPORTANT FOR YOU PHYSICAL EDUCATION?

☐ YES ☐ NO ☐ NOT SURE

10. BELIEVE THAT THE TIME OF PHYSICAL EDUCATION FOR LIFE YOU HELP?

☐ YES ☐ NO ☐ NOT SURE

11. WHAT DO YOU THINK THAT YOU HELP THE LIFE TIME OF PHYSICAL EDUCATION?

A	The exercises and games to learn to move on to to work out at school in your free time
B	To execute various exercises and games to develop harmoniously
C	Let me learn to work in teams

12 FOR YOU WHAT IS IMPORTANT TO THE TIME OF PHYSICAL EDUCATION?

A	Let's highest scores
B	To be appreciated by your peers and teacher progress
C	Do not be appreciated by teachers and peers

13. WHAT DO YOU THINK COLLECTIVE YOUR CLASS?

A	Fellow we're together we always help, even at PE
B	We understand very well, because some colleagues do not talk to me
C	We do not understand at all: we always argue and laugh at others failures colleagues

14. HOW WELL DO YOU THINK YOU UNDERSTAND / COLLABORATED WITH COLLEAGUES CLASS WHEN YOU MADE / A TO WORK IN TEAMS?

A	I understand very well with them,
B	Often with colleagues argue
C	Do not argue with them, but I do not understand very well

15. What do you like most about TIME PHYSICAL EDUCATION?

A	That I could make friends more through games with my colleagues
B	No longer have to sit in my bank, to read and write, as the other hours
C	I can wear my sports equipment, preferably

Results, discuss.
Student responses are presented in the following table synoptic

Table 3. Variants of respondents to the questionnaire items

Nr. students	Nr. item	Variants share the answers						
		Yes	No	Sometimes/ I do not know	Discipline	A	B	C
440	1				Physical Ed, Romanian language, Ed Technology, / Romanian language, Ed Technology, Physical Ed			
440	2				Mathematical/Mathematical			
440	3	13/10	5/2		Ed Technology, Romanian language/ Physical Ed			
440	4	5/3	1/2	- /7				
440	5	14/9	1/2	12/1				
440	6	4/2	5/6	3/4				
440	7	6/10	3/1	9//1				
440	8	-			Physical Ed, Natural science / Physical Ed., Romanian language			
440	9	18/11	-	9/1				
440	10	18/12	-	-				
440	11					-	15/10	2
440	12					3/-	17/12	1/-
440	13					9/8	5/4	4/-
440	14					6/6	-	12/6
440	15					8/9	10/2	1

From the table we see that the open questions 1,2,3 and 8 which relates to the appointment of the material to have obtained a victory or achievement with one or more fellow students in urban areas go first and those in physical education areas said that they are in order: Lb. Romanian, Science, Drawing and Physical Ed.

Questions 4,5,6 and 7 students from urban states that at PE have done but sympathy and are willing to be part of a team regardless of who made it unlike those areas not are always not always.

To question. 9,10,11 referring to the importance of physical education time and importance to students, they all replied that hour of physical education in life and helps their development in a harmonious way.

Urban students answer questions that means 13.14 well with each other and even help if needed and those in rural states, however, argue that not even understand very well the hour of physical education and sport. Urban students answer questions 12, 15 that, like more time for physical education because it helps to make friends through

games and can be appreciated more for their progress.

And there are differences in rural areas, meaning that students say besides enjoy more time for physical education because it helps to make friends through games and can be appreciated more for their progress, and that at education physics do not have to sit in the bank to learn that the other disciplines. Share OUT to the questionnaire applied to the fifth grade in rural and urban areas is summarized in the following table.

Table 4. Share and differences in responses variants items

Nr item	Variants share the answers												Differences MR-MU					
	Rural environment						Urban environment											
	Yes	No	D.NK	A	B	C	Yes	No	D.N.K	A	B	C	Yes	No	D.N.K	A	B	C
3	43,33	16.67					30	10					13,33	6,67				
4	13,34	3,34	43,33				13,34	6,67	20				0	3,33	23,33			
5	46,67	3,34	10				30	-	10				16,67	3,34	0			
6	13,34	16	30				6,67	20	13,34				6,67	4	16,66			
7	20	10	30				33,33	3,33	3,33				13,33	6,67	26,67			
9	60						36,66		3,33				23,34		3,33			
10	60						40						20					
11				10	36,66	13,33				-	26,66	13,33				10	10	0
12				6,66	53,33	-				-	40	-				6,66	13,33	-
13				33,33	16,67	10				-	13,33	-				33,33	3,34	10
14				20	-	40				20	-	20				0	-	20
15				26,66	33,33	-				30	6,66	3,34				3,34	26,67	3,34

Analyzing students share answers in the table we see that significant questions for our study (4,5,7,10) to class V students in rural areas given greater importance of physical education time, and have made friends, are united and help more unlike similar class urban students who respond that they do not always help each other, not always physical education time helped to make friends, but for them no matter who made the team in are asked to play and play regardless of who made it.

Conclusions

- The level of socialization of secondary school students is influenced to an extent semnifiativă hour of physical education core curriculum.
- School physical education contributes to the achievement of social integration in schools by specific content and forms of organization of teaching process - the specific format.
- Following the course of teaching the discipline of physical education and sport at secondary level are highlighted valences towards achieving its social objective.

At the end of research I found that there are differences between the level of social integration in school, students from urban to rural people, recording the first category a higher level of integration, developing positive personality traits.

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THE DISTRIBUTION OF BEHAVIOURAL ACTS FOR PUPILS/STUDENTS AS A NEW MANNER OF ANSWERING TO THE PROFESSOR'S TYPES OF COMMUNICATION

OPREAVIOREL[1], LUPU ELENA[1]

Abstract

Problem Statement: The present research aims to bring to the forth a long debated issue, albeit less approached in practice, regarding the distribution of behavioural acts of pupils and students, which could represent a new manner of instruction and a new answer to the professors' types of communication.

Purpose of Study: This research has been undertaken within Physical Education and Sport lessons, on a group of 387 students from the Petroleum-Gas University of Ploiesti, and on a group of 396 pupils from the high schools of Ploieşti (198 pupils from "Lazăr Edeleanu" Technical College from Ploieşti, and 198 pupils from the Industrial Energetic Group, Ploieşti).

Research Methods and techniques. The research methods and techniques used to address the purpose and research objectives are: Bibliographical method; Observation method; Statistical-mathematical method; Graphical method; Experimental method.

Findings: This paper started from the hypothesis according to which, if within operational projects (and here we refer to the didactic scenario), we anticipate and prepare messages, and then the receptive capacity of pupils/students will increase significantly, as well as the instructive efficiency.

Conclusions: The pupil /the student are the one to respond to the teacher's requests and have to enter into the flow and interaction-oriented action, knowledge, creation. The pupil must have initiative and take responsibility, value the experience in the learning process.

Keywords: pupils, students, professors, acts of conduct, Physical Education, types of communication

Introduction

Communication is a manner of interacting with people through the means of language, gestures, etc. The concept of communication, though, "…in a more general sense, refers to the process of emission, transmission and reception of information in different systems and situations…" (Ana Tucicov B., p.136, 1999/2000).

Behaviour gives birth to a new social relationship which will lead to the distribution of pupils'/students' behavioural acts as a new manner of answering for the professor's types of communication.

"The importance of this new approach perspective consists of considering communication a collective activity, driven by rules assimilated unknowingly. For this reason, it is necessary to emphasize a communication grammar, which makes it possible for us to coordinate each participant in the communication process" (Oprea V., p.11, 2009).

In other words "the communicator and interpreter must have a common system of abstraction and typicalization" (McQuail, D., p.65, 1999), event which determined us to approach this research, through which we aim to bring to the forth a long debated issue, but less approached in practice, regarding the distribution of behavioural acts for pupils/students, which may represent a new and efficient manner of training and answering the professors' types of communication.

Research purpose

The purposes of this research are:

- Indentifying the types of communication used in the relational sphere, specific to the Physical Education and Sport activity;
- To help choosing the means and methods most efficient in lessons;
- To distribute the pupils'/students' behavioural acts;
- To identify a new manner of answering the professor's types of communication;
- To attract the specialists' attention over the communicational sphere specific for the Physical Education activity.

The objectives which laid the basis of this study were the following:

1. Analyzing the situations when behavioural acts are exercised by pupils/students with the purpose of communicating in Physical Education and Sports activities;
2. Evaluating the efficiency of the specific means and methods for the communication act and distribution of the behavioural acts.

Research hypothesis

[1]Physical Education and Sport Department ,Petroleum-Gas University of Ploiesti, ROMANIA
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This research started from the hypothesis according to which, if within the operational projects (the didactic scenario) we will anticipate and prepare messages, then the reception capacity of pupils/students will increase significantly, event which will lead to a more efficient training for the Physical Education and Sports lesson.

The operational process

The entire research has been realized in the conditions of the didactic process, during practical Physical Education lessons of 1st and 2nd year students of the Petroleum-Gas University from Ploieşti, as well as pupils from grades 9 and 10 enrolled in the Industrial Energetic Group Ploieşti and from the Edeleanu Lazar's Technical College from Ploieşti between 2008 – 2010.

Research methods and techniques

In our scientific approach we have used widely known research methods and techniques:

1. Bibliographic study method;
2. Observation method;
3. Measuring and recording method;
4. Graphical method;
5. Experimental method.

Subjects

This research has been realized on a group of 387 students enrolled in the Petroleum-Gas University from Ploieşti, and on a group of 396 pupils from Ploieşti high-schools (198 pupils enrolled in the Edeleanu Lazar's Technical College from Ploiesti, and 198 pupils from the Industrial Energetic Group, Ploiesti).

Data analysis and interpretation

In order to fulfill the research tasks, and to emphasize the distribution of pupils'/students' behavioural acts as an answer for the professor's types of communication, we have observed the manner in which the pupils/students are prepared/unprepared, attentive/indifferent when receiving the message, we have seen the execution, how they ask for further explanations, have motric auto-corrections or are lacking discipline.

For this reason, and in order to present more clearly all the observed aspects, we have conceived two diagrams – Diagram No. 1 for pupils, entitled *The distribution of the pupils' behavioural acts as a response for the professor's types of communication,* and another diagram – Diagram No. 2 – *The distribution of the students' behavioural acts as a response for the professor's types of communication* – according to the protocol below.

As a result of the analysis for protocol no. 1, which contains the following indicators:

1. Pupils are *ready for receiving the messages*;
2. Pupils are *not prepared, not attentive, not interested;*
3. Pupils *present positive reactions in receiving the messages;*
4. *Frequently expect explanations;*
5. *Expect corrections*;
6. *Demand further explanations*;
7. *Perform with neglection*;
8. *Have motric auto-corrections*;
9. *Present manifestations of indiscipline regarding the distribution of behavioural acts, as a response to the professor's types of communication,* and we have recorded the following aspects:

- Pupils are *ready for receiving the messages* 31,868 %; (1)
- *Not prepared, not attentive, not interested* 11,188 %; (2)
- *Present positive reactions in receiving the messages* 12,202 %; (3)
- *Frequently expect explanations* 7,18 %; (4)
- *Expect corrections* 7,272 %; (5)
- *Demand further explanations* 6,994 %; (6)
- *Perform with neglect* 11,584 %; (7)
- *Have motric auto-corrections* 8,152 %; (8)
- *Present manifestations of indiscipline* 3,56 %.(9)

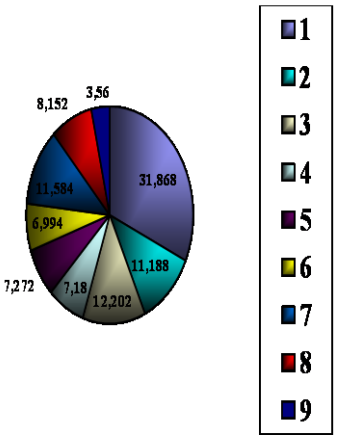


Diagram No.1 Results for the distribution of the pupils' behavioural acts as a response for the professor's types of communication

After the analysis of the observation protocol No. 2, identical with the observation protocol No. 1 regarding the observed indicators, but applied at another level – students – with the same purpose – *the distribution of the students' as a response at the professor's behavior acts,* the following results have been found:

- Pupils are *ready for receiving the messages* 44,014 %; (1)
- *Not prepared, not attentive, not interested* 10,014 %; (2)
- *Present positive reactions in receiving the messages* 7,418 %; (3)
- *Frequently expect explanations* 6,15 %; (4)
- *Expect corrections* 9,086 %; (5)
- *Demand further explanations* 9,146 %; (6)
- *Perform with neglecting* 6,578 %; (7)
- *Have motric auto-corrections* 7,272 %; (8)
- *Present indiscipline manifestations* 0,322 %. (9)

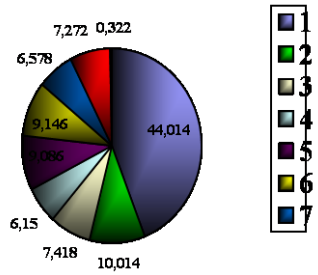
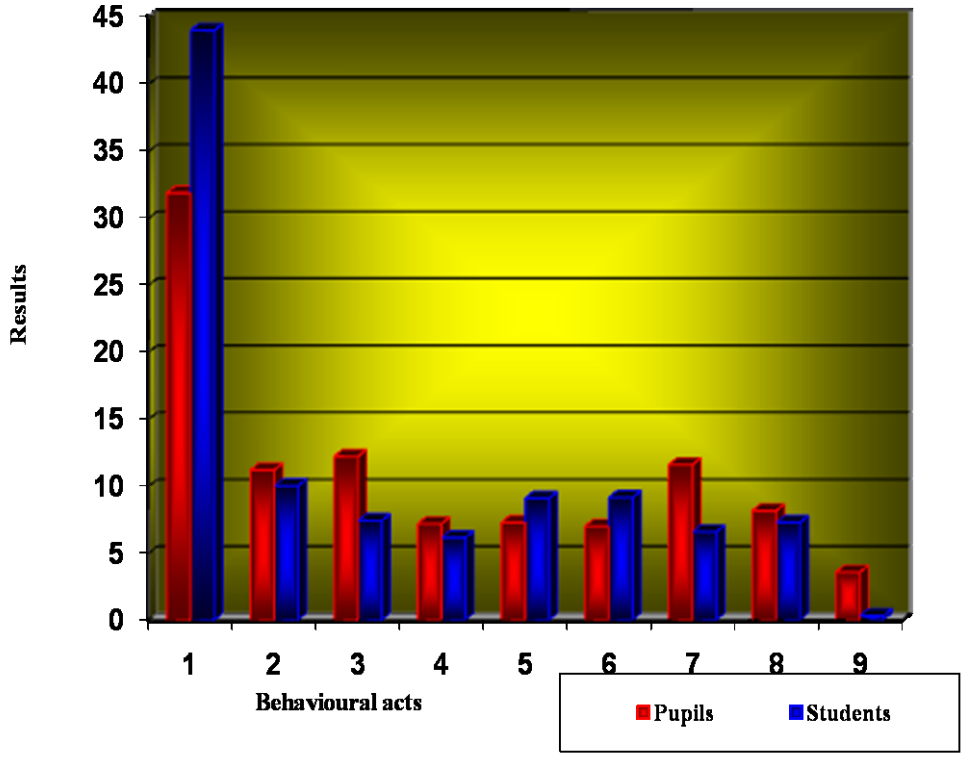


Diagram No.2 Results for the distribution of the students' behavioural acts as a response for the professor's types of communication

Analyzing the observation protocols No. 1 and No. 2 *the distribution of the pupils' behavioural acts (see diagrams No. 1 and 2) as a response for the professor's types of communication* we may observe the differences between the values of their behavioural acts:

- Pupils 31,868 % are less *prepared for receiving messages* than students 44,014 %; with 12,146 %;
- In the case of the conduct regarding the *not prepared, not attentive, not interested,* students 10,014 % register values smaller with 1,174 %, compared with pupils 11,188 %;
- Pupils present *an increased positive reaction in receiving the messages,* registering values of 12,202 % with 4,784% more than the students who have 7,418 %;
- The percentage for the *expecting explanations* conduct registers the value of 7,18 % at pupils with 1,03% more than the percentage registered by the students 6,15 %;
- At the conduct – *expecting correcting*, pupils 7,272 % present themselves with a percentage 1,814 % bigger than the students' 9,086;
- Pupils *demand for further explanations* in a lower percentage 6,994 % with 2,152% less than the students' 9,146 %;
- In what the conduct *neglecting the performance* is concerned, an increase of the percentage for the pupils 11,584 % with 5,006% more than 6,578 % at students;
- For pupils we encounter *motric auto-corrections* with a percentage of 8,152 % , 0,88 % higher than students 7,272 %;
- For the indicator regarding the *manifestations of indiscipline,* pupils 3,56 % have a value higher with 3,238% as compared to the students with 0,322 %.

Graph No. 1 Presenting the differences regarding the results of the analysis of pupils'/students' behaviural acts from protocol No. 2 - a new manner of answering the professor's types of communication



Conclusions

- The professor is an active character, being the link of the relation and the stimulus of the lesson, and of the distribution of behavioural acts for pupils/students.
- Among the activities of behavioural distribution we most often find: explaining, demonstrating, demanding to participate, defining, comparing, stimulating, directing, and creating discipline.
- The professor is the character with the most numerous corrective reactions and with a direct involvement in the distribution of pupils'/students' behavioural acts.
- The repertoire of the decisions specific for the class activities is varied.
- Pupils/students are those who have answered to the professor's demands and who have entered in the flux of interaction oriented towards action, knowledge, creation, **which led to a significant multiplication of events which will, in time, end with a more efficient training in the lesson of Physical Education and Sports, thus confirming the hypothesis**.
- The pupil must have initiative and to hold responsibility, to cherish the experience gained during the learning process.
- For the learning process one must not ignore any of the positive means, and pupils/students must be advised to make an entire use of their capacities in this purpose.
- We attempt to relax the pupil/student through conversations with subjects of a general interest regarding the activity of Physical Education and Sports.
- When the pupil/student successfully learns a new motric act, and can accomplish what the professor told him, the communicational flux is opened, which makes training more efficient, thus confirming the hypothesis.

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IDENTIFYING AND DIFFERENTIATING BEHAVIOURAL ACTS USED BY PROFESSORS IN THE PUPIL/STUDENTS-PROFESSORS RELATIONSHIP WITHIN THE PHYSICAL EDUCATION LESSON FOR HIGH SCHOOL AND UNIVERSITY LEVELS OF EDUCATION

OPREA VIOREL[1], LUPU ELENA[1]

Abstract

Problem Statement: This study complements the various studies conducted so far in this field, scientific approach to the topic mentioned leads eventually to a progress in terms of communication relative to teaching physical education classes and sports.

Purpose of Study: This research has been undertaken on a group of 24 professors within high school and university levels of education, with a pro-efficient formation, Ph.D. graduates (9 professors), and grade I teachers (in number of 15). The teacher is the most active character with the integrative role and the one who stimulates both form and content of activities. It has the most frequent reactions of corrective type and he has a large repertoire of decisions specific to the classic regulatory activities, evaluation, support, encouragement, explanation, questioning.

Research methods and techniques. The research methods and techniques used to address the purpose and research objectives are: Bibliographical method; Observation method; Statistical-mathematical method; Graphical method; Experimental method.

Findings: The research was mainly conducted in indoor and outdoor sport fields and tracks of the Petroleum-Gas University of Ploiesti, of the Edeleanu Lazar's Technical College from Ploiesti, but also of the Industrial Energetic Group, Ploiesti.

Conclusions: If we identify types of communication used mainly by the teachers of physical education and sports and we include them in the teaching scenario, like a provoked educational event, then the quality and effectiveness of teaching physical education and sports will increase dramatically.

Keywords: Identifying, differentiating, behavioural acts, professors, physical education, high school and university levels of education

Introduction

The series of behavioural acts used by professors in the relationship between pupil/student-professor – within the Physical Education lesson in high-school and university levels of education represent a determinant element in communication and the relationship which will be established along the instructive process, because Physical Education and Sports activities "…are conceived for humans, in certain social and financial conditions, which makes the two types of motric activities formative-educative elements of a great value." (A. Dragnea p.206, 2000).

The teacher is the most active character with the integrative role and the one who stimulates both form and content of activities.

It has the most frequent reactions of corrective type and he has a large repertoire of decisions specific to the classic regulatory activities, evaluation, support, encouragement, explanation, questioning.

Purpose of the research

Approaching the issue of the chosen theme, this paper aims the following:

- To identify the behavioural acts used by professors in the relationship between pupil/student-professor - within the Physical Education lesson in high-school and university levels of education;
- To identify types of communication used within the relational sphere, as a characteristic of Physical Education and Sports activities;

Objectives of the research

The objectives which were at the basis of the realization of this study were the following:

1. The analysis of the moments when the identification and difference of behavioural acts occurs, these being used by professors in the pupil/student-professor relationship;
2. An evaluation regarding the efficiency of *professors' behavioural acts in Physical Education lessons.*

Research hypothesis

This research has started from the hypothesis according to which if we will identify the types of communication mainly by professors of Physical Education and Sports and we will include them in the didactic scenario, as a provoked pedagogical event. As a consequence, the quality and efficiency of teaching Physical Education and Sports will increase.

The operational process and the subjects involved in the research

[1]Physical Education and Sport Department ,Petroleum-Gas University of Ploiesti, ROMANIA
Email: lupu_lln@yahoo.com

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This research has been undertaken on a group of 24 professors within high school and university levels of education, with a pro-efficient formation, Ph.D. graduates (9 professors), and grade I teachers (in number of 15), from the Petroleum-Gas University of Ploieşti, and from the Edeleanu Lazar's Technical College from Ploieşti, between 2008 – 2010.

Research methods and techniques

In our scientific approach we have used widely known research methods and techniques:

1. Bibliographic study method;
2. Observation method;
3. Measuring and recording method;
4. Graphical method;
5. Experimental method.

A. Organizing and structuring indicators are indicators which:

- the professor organizes and leads the didactic process through the domination of empirical values (I. Negret-Dobridor, 2008).
- conceives the objectives necessary for the didactic process
- creates the algorithms for the lesson
- structures a series of content elements
- uses in the lesson the demonstration and presentation, on their basis creating an argument for his/her actions **(**Gh., Bîltac, And D.,Călin, 2008);

B. Indicators of communication distribution - In this situation, the professor will turn to:

- the creation of an interactive situation and will demand interactive answers
- the frontal and individual demand of the pupils/ students in the lesson.

C. Indicators of resolution and evaluation

- the activities (motric, cognitive, active, affective, moral) of pupils/students are directed-evaluated through the means of three behavioural types: positive, negative and neutral **(**D ., Colibaba Evulet. 2007).

D. Indicators for the manifestation of the formative potential:

Through this type of indicators we aim that the professor to become an objective, which will lead in time to a stimulation of behavioural acts and attitudes of direct communication of one's criticism, and a personal presentation – reflexive and interpretative(M., Argyle, 2005).

E. Indicators for values modeling:

These indicators point to the capacity of evaluation and implementation of: models, values, social and group positive attitudes; strong moral-character values and attitudes; practicing models and a horizontal-vertical transfer of positive working experiences and positive attitudes derived from these **(**P., Andersen, 2007).

F. Indicators of the socio-affective climate:

In the sphere of the pupil's/student's personality or within a group of pupils/students, the main types of styles, actions or influences may be direct, indirect or combined from the two characteristics

G. Indicators of creativity stimulation:

Creativity is an important parameter for the Physical Education lesson, this being the motivation which determines the professor to turn towards the establishment of a creative behaviour of the pupils/students, who are seen as individualities, as members of the group, and have to use the following indicators within the lesson; non-verbal communication which is a substitute – a gesture of indicating the pupils which helps at their training, and the arrangement of materials; uses object language; codes of performing the tasks, associated with body motion and face expressions; the linguistic unity; spatial and temporal codes; feed-back; technical and tactical codes; the language of signals and warning **(**L., Ezechil .2003).

The results obtained and their interpretation

Involving all the above mentioned aspects, the professor is thus directed towards the establishment of a creative behaviour of the pupils/students, seen as individualities, as members of the group **(**R. ,Thomas, Jerry & Nelson, K., Jack, 1997).

It is very important to mention, before analyzing and interpreting the data, that in the nowadays society "…the professor of Physical Education and Sports presents himself as a package of duties, given in the first place by the position of educator, and, secondly, by the profile of his/her specialization, which is Physical Education and Sports, motric activities different in comparison to other instructive-formative activities" (A., Dragnea p.206, 207, 2000).

In Bontaş's opinion (p.202-204,1994, quoted by V., Oprea p.70, 2009), "…the didactic communication is a professional

communication of the professor with the student within the didactic process – the lesson – and outside of it, oriented towards the creation of a favourable social and psychological climate."

That is why we believe that after the identification of the various communication types, mainly used by professors of Physical Education and Sports, we could include them in the didactic scenario, as a provoked pedagogical event. As a consequence, the quality and efficiency of teaching Physical Education and Sports will increase.

For this reason, we have undertaken this study, and the data were registered and interpreted according to Table No. 1, *Observation protocol regarding the identification of the professors' behavioural acts in Physical Education lessons* and Graph No. 1, *Representative graph regarding the identification of the professors' behavioural acts in the Physical Education lesson for the high-school and university levels of education,* aimed to improve the teaching system, with the purpose of increasing the efficiency of training and opening new directions of research for other specialists.

Table – Observation protocol regarding the identification of the professors' behavioural acts in the Physical Education lessons

Table No. 1

Behavioural acts	Average
A. Frontal relation	5,68
B. Individual relation	5,632
C. Receptive to the pupil's/student's behaviour	5,641
D. Intervenes when mistakes are made	5,656
E. Demonstrates	9,168
F. Demonstrates with the help of other means	0,572
G. Demonstrates –explains	5,308
H. Corrects (explains)	4,269
I. Verbal communication	14,477
J. Non-verbal communication	5,875
K. Para-verbal communication	5,963
L. Combined communication	5,984
M. Makes the pupils/students active	6,033
N. Disciplines the class	3,219
O. Reactions feed-back	2,213
P. Evaluating the behaviour for pupils/students	2,459
Q. Ensured retention	1,824
R. Authority chosen as the ruling style	2,343
S. Democracy chosen as the ruling style	2,977
T. A combined ruling style	2,098
U. The quality of the information transmitted	2,657

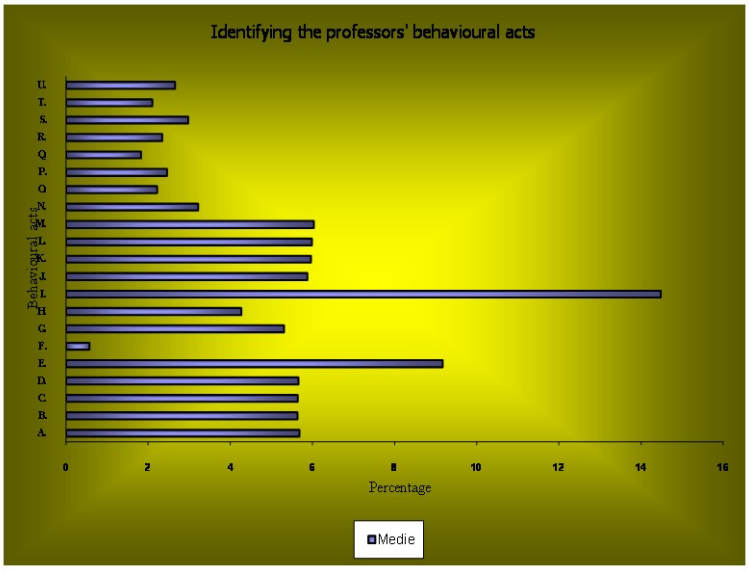
In what the *identification of the professors' behavioural acts in Physical Education lessons* is concerned, we can observe that:

- For behaviours regarding the types of relations, and here we refer to *frontal and individual relations,* we have recorded values close to *5,685*, respectively *5,632,* values which show that these behaviours can be improved;
- Another behaviour observed and close to the value of the precedent is the one regarding the *professor's receptiveness to the student's behaviour,* with a value of *5,641*;
- *Interventions when mistakes are made* are recorded with a value of *5,656* this also being eligible for improvement;
- Professors have the best indicators for behaviours - *demonstrates 9,168, verbal communication 14,477* and *make the students active 6,033*;
- The categories of behaviours which need a greater attention and which have to be further studied are: *the ruling style, ensuring retention, evaluating the students' behaviour, reactions to feed-back, disciplines the class,* at these the professors having values under the average of *5*;
- *Demonstrates with the help of other means* is the behaviour which has recorded the lowest average 0,572;
- The category of conducts which represent a real interest for us, and which has been studied, is the one regarding types of communication used by professors of Physical Education and Sports during lessons, and which shows that, in what the *non-verbal communication 5,875*, *the paraverbal communication 5,963, and the combined communication 5,984* having an average of 4, these have to be implemented, in order to realize a more efficient and complex act of education;

These low values concerning communication types show us a low value for the *quality of the* 2,657, which is unpleasant, due to the fact that this behaviour has repercussions over the feed-back.

Representative chart regarding the identification of the professors' behavioural acts in the Physical Education lessons in high-school and university levels of education

Graph No. 1



Caption: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, R, S, T, U – these letters **correspond to the indicators in Table No. 1 with the Observation protocol regarding the identification of the professors' behavioural acts in the Physical Education lessons.**

Conclusions

- The behavioural acts regarding types of relations, and here we refer to *frontal and individual relations,* we have recorded values close to *5,685*, respectively *5,632,* values which show that these behaviours can be improved;
- Professors have the best indicators for behavioural acts – *demonstrates* (9,168,) *verbal communication* (14,477) and *make the students active* (6,033), which confirms the hypothesis according to

which, if we will identify the types of communication mainly used by professors of Physical education and Sports and we will include them in the didactic scenario, as a provoked pedagogical event, then the quality and efficiency of teaching Physical Education and Sports will increase significantly;

- When the behavioural act is in accordance with the demands and in coordination with all the communication types, the teaching label and the transmitted message are one of great value. Low values recorded for these behavioural acts show a low quality of the transmitted message, thus confirming the hypothesis according to which the efficiency of the instructive process is influenced by the quality and efficiency of the professor's behaviour during the lesson;
- The categories of behavioural acts which need a greater attention and have to be further studied are those related to the ruling style, retention insurance, behaviour evaluation, reactions to feed-back, and collective discipline;
- This study completes the various other studies realized until present days in this domain, the scientific approach of the mentioned subject, finally leading to progress regarding didactic communication, reported to Physical Education and Sports lessons.

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STUDY ON USE ALGORITHMS IN TEHNICAL TRAINING OF STUDENTS FROM FACULTY PROFILE

PARASCHIȚA FLORINA[1]

Abstract
The work was intended to find the most effective methods and procedures of acquiring the evidence athletic technique, based on algorithms, given that the number of hours granted athletics discipline in the curriculum has diminished considerably in recent years.
The **purpose of research** is finding the most effective processes to acquire and enhance technique in as short a time using the algorithm process.
The following **hypothesis** was the basis for the draw up of this work: When applying a strategy of training the students based on algorithms, this will help to optimize properties and enhance athletic events techniques.
Used methods of research: *Method of Bibliographic Study, Method of Observation, Experimental Method, Method of Testing, Statistical-mathematical method.* Used test of the research were speed running, relays, long jump from stand, hurdles and oina ball throwing.
Conclusions. By analyzing the final test data obtained by the students of both groups compared to baseline, we make the following findings: each component of the groups considered separately we have a tangible progress in all chapters and in all indicators. The most visible progress is noted in technique chapter.
Key words: algorithms, process, training

Introduction

The algorithm process consists of a process of developing different types of algorithms: specific algorithm content of the training process, the teacher or coach specific algorithm, algorithm specific to the subject.

Algorithm involves a sequence of operations, moments, which deal with situations (typical problems), standardized. In our field are clear issues specific content targeting algorithms training process. This type of algorithm consists of the most effective exercises, arranged in a well established succession, logical, well quantified (the effort) and in all methodological and organizational rules that required the application of inheritance to solve a standard situation (example: the long jump, regardless of techniques used, involves the approach, take-off, flight and landing) (G. Carstea, 1993).

Using the algorithm in the learning process involves carrying out operations in close succession, without changes in the order of operations. Algorithm should be composed of standardized measures, elementary, which depend on the readiness and capabilities of the subject.

The process of acquiring the athletic exercises is not conducted uniformly, with equal effectiveness throughout the entire period of training. This process is influenced by the degree of general and special education students/athletes,

which is always changing, by the particular exercises to learn, by the specifics of working methods chosen and the complexity of the various stages of acquiring technical exercises on the road that leads to its gradual improvement (F. Neder, 2010).

All actions and processes of movement, which by their specific form and content provide a certain sports, may be practiced in accordance with statutory provisions in force that make up the sports technique (I. Siclovan, 1988).

Technique consists of precise movement and actions structure established, highly efficient, embodied in the elements and techniques. In athletics, for example, long jump and high jump are elements of technique and long jump with one and half step, high jump with dorsal reversal, are techniques (D. Garleanu, 1996).

The **purpose of research** is finding the most effective processes to acquire and enhance technique in as short a time using the algorithm process.

The following **hypothesis** was the basis for the draw up of this work: When applying a strategy of training the students based on algorithms, this will help to optimize properties and enhance athletic events techniques.

In this work we established a series of **tasks**, as follows:

- Optimize training through application exercises, knowledge and athletic rules.
- Development of fundamental motor skill involved in learning and reinforcing evidence athletic technique.
- Acquiring and strengthening the theoretical knowledge.

Used methods of research: *Method of Bibliographic Study, Method of Observation, Experimental Method, Method of Testing, Statistical-mathematical method.* Used test of the research were speed running, relays, long jump, hurdles and oina ball throwing. Degree of assimilation of technique has been tested and appreciated by marks.

For running tests each student was entitled to 2 tries, marking the best of them. Long jump was performed with approach and with process 1 and 1 /

[1]FFES - Ecological University from Bucharest, ROMANIA
Email: parascuvitaflorina@yahoo.com
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2 steps. In throwing the oina ball appreciated the art of throwing 4 preliminary steps and momentum. 2 attempts were allowed for each student, both on throw and jump.

The experiment was conducted in the second semester of the academic year 2008-2009 and took place in the stadium complex number 2 of "Lia Manoliu. The experiment was conducted with 30 female and 60 male of first year students of the Faculty of Physical Education and Sport of the Ecological University of Bucharest. Dividing the experimental and control groups was based on initial test results recorded as follows: groups with somewhat better results (although insignificant) were the experimental groups, and other groups to set up control groups.

Experimental groups using algorithms process study course material, both proper training and athletic skill development motor qualities. In this way each exercise was measured both in volume and intensity and effort by students could be directed and adjusted judiciously. Control groups have gone through traditional learning material.

Mention that both experimental groups and the control were approximately the same amount of work (number of lessons and hours of training, number of repetitions, distance running).

Analysis and interpretation of results

The results obtained were recorded separately for each group separately for each sex, then were centralized, processed and interpreted as evolution from initial to final testing.

Analyzing the initial test data found that: the overall level of training is observed near the two groups, small differences are observed are insignificant.

In preparing the plan presents an additional technical superiority two groups of experimental evidence "less technical" (running speed and the relay). Instead, the evidence of a greater tech (running the hurdles and throwing oina ball) groups appear balanced in value.

In the final moment of research the girls obtained the following results (Table no 1-2, Figures no. 1-5):

Arithmetic average of the experimental group at running speed is about 4 points higher then control group. Standard deviation has a value that characterizes good groups. Coefficient of variation is very small in both times tested, indicating high homogeneity of the groups.

In running the relay final grade improved by 5 points and standard deviation have values close to both tests. Coefficient of variation indicates a high homogeneity of the group in both tests (1.84 in T1 and 0.78 in T2).

Arithmetic average of the long jump in the experimental group is 4 points higher than the control group. Coefficient of variability has values between 0-10%, indicating the great homogeneity of the groups.

In hurdles, both groups initially had the same arithmetic mean, but in the end testing the experimental group had an average increase of more than 5 points compared to only 3 of the control group. Coefficient of variation shows a high homogeneity of the groups in both times tested.

Oina ball throw is about the same arithmetic mean in both groups, but in the final moment the experimental group obtained a higher score 6 points given of the control, which manages just 4 extra points. Standard deviation values are similar in the two test times for both groups. Coefficient of variation shows a high homogeneity of the groups in both tests.

In the final moment of research the boys obtained the following results (Table no 3-4, Figures no. 6-10):

Arithmetic average of the speed running increases in the final with 4 points in both groups tested. Coefficient of variation is very small values, which show a great homogeneity of the group.

On relay testing, arithmetic average is improved by 6 points in the experimental group and only 5 in the control. Coefficient of variation indicates high homogeneity of the groups in both tests.

Arithmetic averages are almost identical in long jump in the initial moment, but in the final the experimental group has increased by nearly 4 points given only 3 of the control group.

Arithmetic averages of the hurdles are very close in the initial moment, but in the final, experimental group has increased by 5 points compared to only 4 of the control group. Standard deviation values are approximately the same in both tests in both groups tested.

Throwing the oina ball, also initial values are similar at the beginning of research, and finally succeed in an experimental group arithmetic average improvement of 5 points from only 4 of the control group.

Conclusions:

1. Each student made progress in almost all athletic tests.
2. For control groups were necessary 4-5 lessons learning tasks, while the experimental groups needed only 2-3 lessons.
3. In assimilation of the athletic techniques events, arithmetic averages made by experimental group's components are superior to those obtained from control groups.
4. Learning using algorithms contributed greatly to the development executant's interest towards learning tasks that have been proposed.

5. By analyzing the final test data obtained by the students of both groups compared to baseline, we make the following findings: each component of the groups considered separately we have a tangible progress in all chapters and in all indicators. The most visible progress is noted in technique chapter, it explained primarily due to the low level at which bowed in second place, rhythmicity with which to work in this regard, especially tests.

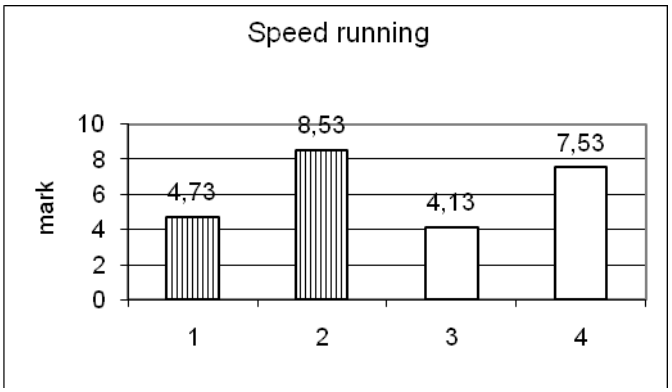
Table no 1. Experimental group for girls - technique level in both moments tested

No.	Indicators	Speed running		Relay		Long jump		Hurdles		Oina ball throwing	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1.	Arithmetical means	4.73	8.53	4.2	9.4	4.86	8.86	3	8.33	3.4	9.33
2.	Standard deviation	±7.99	±11.18	±7.74	±7.36	±5.05	±12.32	±7.55	±8.17	±7.55	±8.17
3.	Coefficient of variability	1.70	1.31	1.84	0.78	1.05	1.40	1.86	0.87	2.51	0.87

Table no 2. Control group for girls - technique level in both moments tested

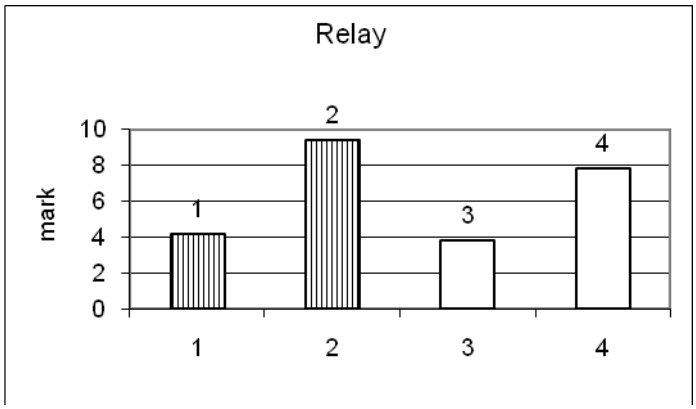
No.	Indicators	Speed running		Relay		Long jump		Hurdles		Oina ball throwing	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1.	Arithmetical means	4.13	7.53	3.8	7.86	4.8	8.53	3	6.86	3.33	7.73
2.	Standard deviation	±3.53	±15.05	±6.76	±15.07	±6.76	±14.57	±0	±11.27	±6.18	±15.80
3.	Coefficient of variability	0.86	2	1.77	1.93	1.40	1.71	0	1.6	1.87	2.05

Figure no. 1



1 - Experimental group for girls' initial moment
2 - Experimental group for girls' final moment
3 – Control group for girls' initial moment
4 - Control group for girls' final moment

Figure no. 2



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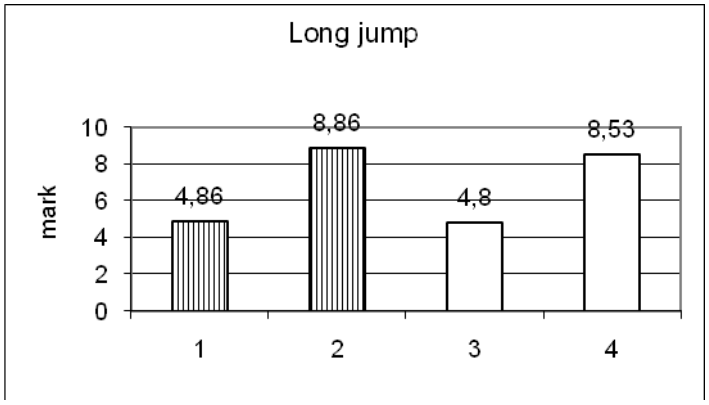
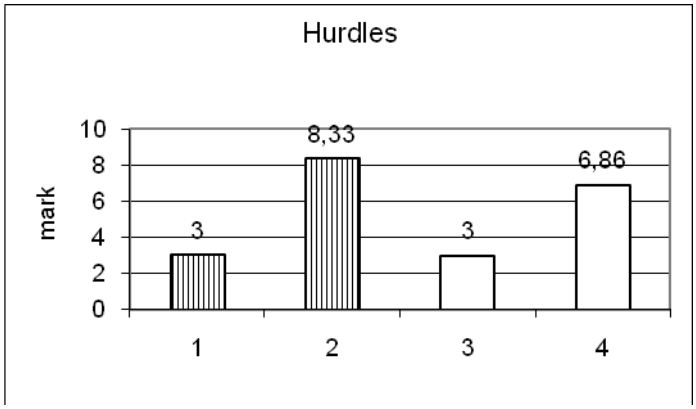
2 - Experimental group for girls' final moment
3 – Control group for girls' initial moment
4 - Control group for girls' final moment

Figure no. 3



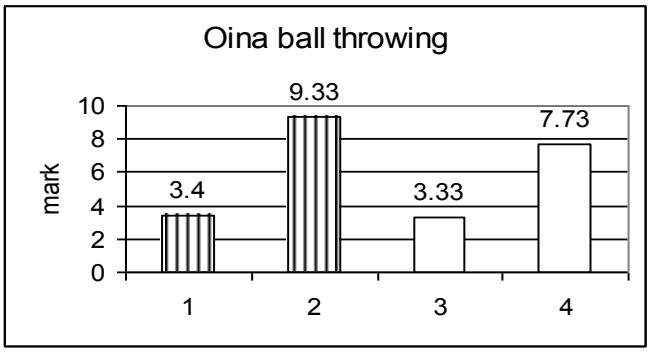
1 - Experimental group for girls' initial moment
2 - Experimental group for girls' final moment
3 – Control group for girls' initial moment
4 - Control group for girls' final moment

Figure no. 4



1 - Experimental group for girls' initial moment
2 - Experimental group for girls' final moment
3 – Control group for girls' initial moment
4 - Control group for girls' final moment

Figure no. 5



1 - Experimental group for girls' initial moment
2 - Experimental group for girls' final moment
3 – Control group for girls' initial moment
4 - Control group for girls' final moment

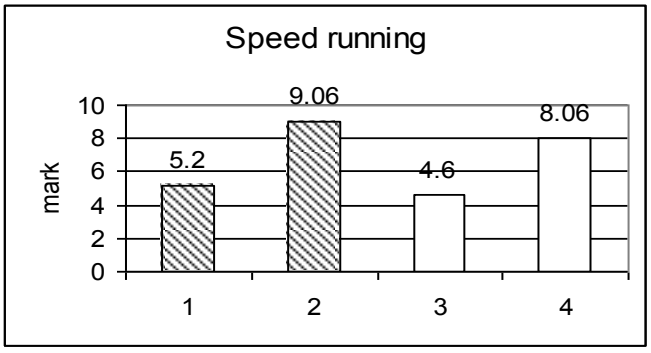
Table no 3. Experimental group for boys - technique level in initial moment tested

No.	Indicators	Speed running		Relay		Long jump		Hurdles		Oina ball throwing	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1.	Arithmetical means	5.2	9.06	3.93	8.93	4.8	8.26	3.26	8.4	3.33	8.66
2.	Standard deviation	±13.53	±8.86	±5.94	±8.84	±8.61	±11.64	±13.36	±11.21	±13.19	±12.92
3.	Coefficient of variability	2.56	0.97	1.52	0.99	1.79	1.40	4.14	1.33	3.99	1.50

Table no 4. Control group for boys - technique level in final moment tested

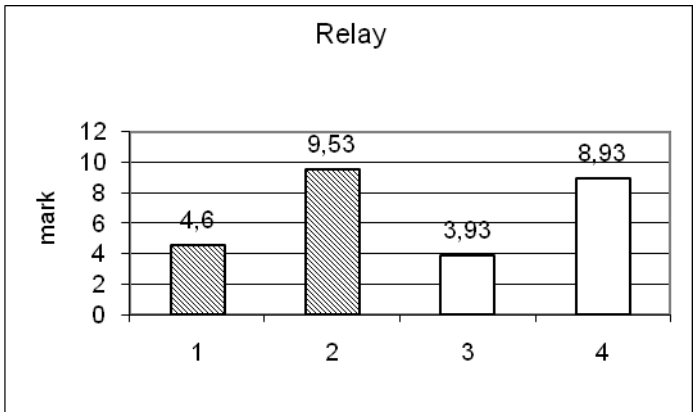
No.	Indicators	Speed running		Relay		Long jump		Hurdles		Oina ball throwing	
		T1	T2	T1	T2	T1	T2	T1	T2	T1	T2
1.	Arithmetical means	4.6	8.06	4.6	9.53	4.73	7.6	3.33	7.93	3.4	7.93
2.	Standard deviation	±8.19	±12.24	±9.85	±7.44	±5.94	±15.16	±12.91	±13.50	±12.91	±16.67
3.	Coefficient of variability	1.7	1.53	2.14	0.78	1.26	1.99	3.9	1.71	3.9	2.11

Figure no. 6



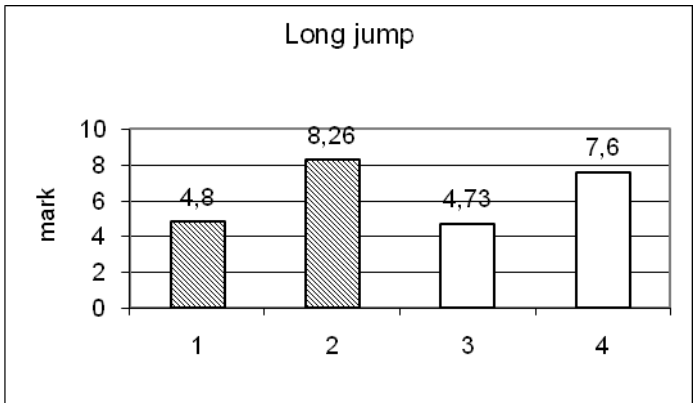
1 - Experimental group for boys' initial moment
2 - Experimental group for boys' final moment
3 – Control group for boys' initial moment
4 - Control group for boys' final moment

Figure no. 7



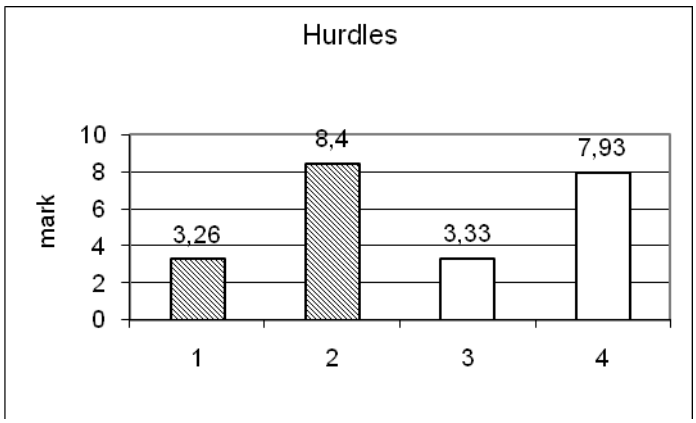
1 - Experimental group for boys' initial moment
2 - Experimental group for boys' final moment
3 – Control group for boys' initial moment
4 - Control group for boys' final moment

Figure no. 8



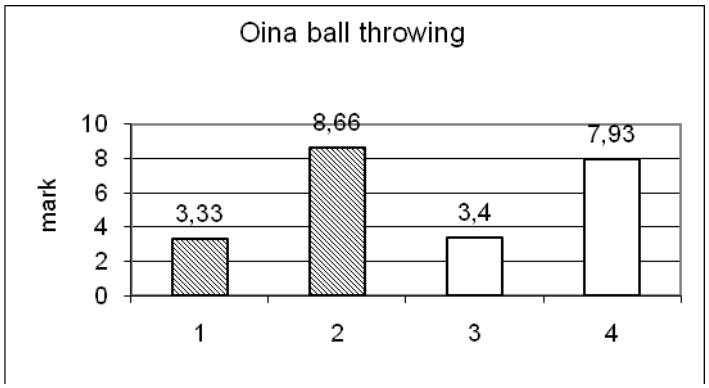
1 - Experimental group for boys' initial moment
2 - Experimental group for boys' final moment
3 – Control group for boys' initial moment
4 - Control group for boys' final moment

Figure no. 9



1 - Experimental group for boys' initial moment
2 - Experimental group for boys' final moment
3 – Control group for boys' initial moment
4 - Control group for boys' final moment

Figure no. 10



1 - Experimental group for boys' initial moment
2 - Experimental group for boys' final moment
3 – Control group for boys' initial moment
4 - Control group for boys' final moment

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STUDY ABOUT THE POSSIBILITIES TO DEVELOP THE SCHOOL GROUP COHESION IN DISABLED CHILDREN

POPESCU FLORENTINA[1], MARIA-CRISTIANA PORFIREANU[2], CRISTIAN RISTEA[2]

Abstract

The group psychological and psychosocial knowing is subordinated to its use for the social group evolution and progress, for the harmony among its members, for its efficiency increase. The physical education teacher can influence the development of school group cohesion.

Aim: This research aims at finding methods and means able to develop the school group cohesion in special education.

Methods: We used both classical methods, namely documentation and observation, and methods specific to social group research, such as sociometric inquiry and test.

Results: Pupils possessing capacities to learn "quicker" the means specific to basketball game are more exerted in decision-making.

Conclusions: The group psychological and psychosocial knowing is subordinated to its use for the social group evolution and progress, for the harmony among its members, for its efficiency increase.

Key-words: school group, cohesion, methods, sociogram

Introduction

Physical education and sports activity, through its formative valences, represents a good environment for pupils' socialization, because at this age their integration into a complex group (class, team) develops personality under all its aspects, by helping them to better integrate into society (A. Dragnea, A. Bota, 1999).

The physical education curriculum is an essential component of any health program.

One of its most important objectives is the initiation into an active lifestyle that should accompany the child during his lifespan(M. I., Botez, 1996).

The physical education lesson is the main form through which pupils acquire attitudes, motor and behavioral skills (M., Epuran, V., Horghidan, 1994).

An integrant part of formative motor

[1]Spiru Haret University, Bucharest, ROMANIA
[2] Academy of Economic Studies, Bucharest, ROMANIA
Email: flory_bk@yahoo.com
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activities, adapted physical education and sports impose an institutionalized framework, a set of clearly specified competences, transdisciplinary strategies that aim at creating a value system significant to the individual and the society, able to throw a new light on the disabled person (F., Popescu, , M.C., Porfireanu 2010).

Adapted physical education and sports place the subject in the hypostasis of a social being capable to exert an active role in his own training and development (Teodorescu, S., Bota, A., 2007).

Adapted physical activities represent an important landmark to subjects' leisure time organizing, with benefits for the affective-motivational area (I., Holdevici, 1993)

Adapted physical education and sports activities valorize qualities, skills, attitudes and behaviors habilitating the disabled subjects to participate in, as members of the society they belong to (M. Zlate, 1996)..

Special or adapted physical education is a physical education branch that aims at subjects' recovery and social integration by promoting programs adapted to different types of disabilities (V., Horghidan, 1997).

The physical education content is related to motor behavior.

The objectives of physical education and sports for disabled children are derived from the education general objectives.

The general objectives of adapted physical education and sports are not fundamentally distinct from those settled for normally developed children, between them existing but some shades of difference.

Their aims refer to: the health state (resistance to illness, body strengthening habits, respect of hygienic conditions); body-related aspects (growing and development processes, body correct posture, adaptation to effort capacity); motricity-related aspects (acquisition and improvement of motor skills and abilities, development of motor qualities); psychic and psychomotor aspects (stimulation of cognitive, affective, motivational and volitional processes, development of ambidexterity); social aspects (building up the socio-motricity elements, transfer of sports habits to social life) (Teodorescu, S., Bota, A., 2007).

Adapted sports is a sports branch that uses motor structures, specific rules, material and organizational conditions modified and appropriate to the requirements of different types of deficiencies (special needs) (U.,Şchiopu, 1997)
.

The category of mentally disabled children demands the specialists' particular attention, having in view their heterogeneity and most of all the possibility of an educational intervention, with very good results, through the practice of physical exercises (Teodorescu, S., Bota, A., 2007).

Basketball, as a physical education means with multiple influences upon the practitioners' development, is one of the sports adapted to mentally disabled children.

The "Special Olympics" organization, together with FIBA, organizes basketball competitions based on regulations adapted to children with a low intelligence quotient (F. Popescu, 2009).

Basketball, a team sports game, has significant influences on the development of the small group (team) cohesion (Popescu, F., 2009). The sports group cohesion has its own dynamics that is determined by its characteristics (mentally disabled children) and that can be revealed by the sociometric inquiry (G.W. Allport, 1981).

Sociological observation has already showed long ago that "birds of a feather flock together", namely subjects become more naturally friends if they have almost similar common valences reflected through attitudes, aptitudes and behavioral traits.

The group cohesion fulfillment is a social modeling process requiring the adjustment of individual tendencies and intentions and their harmonization with the affective collective atmosphere (Epuran, M., Horghidan, V., 1994).

Hypothesis of the research

By this experimental study, we meant to find out if the basketball game, through its specific means, could develop the school group cohesion in mentally retarded children.

Tasks of the research

- To co-opt and co-interest the special education teacher in this research approach.
- To know the group of pupils and effectively participate in the lessons of the classes included in this research.
- To use means specific to basketball in order to fulfill the themes and tasks of physical education lessons.
- To choose the most efficient methods to communicate with mentally retarded pupils.
- To know the school cohesion factors in order to increase school efficiency.

- To conceive a sociometric test with questions accessible to the pupils included in this research.
- To draw up the sociogram.

Research methods

- Scientific documentation
- Observation
- Sociometric inquiry
- Sociometric test

Content of the experiment

The experiment included 12 pupils (4 girls and 8 boys) in grade 5th A, the control class, while the experimental class, in grade 5th B, included 17 pupils (7 girls and 10 boys).

When investigating these two school groups, our main objectives were to know each pupil's position within the group, the relationships settled within each group, the group cohesion and the physical education influence upon the group building up and instruction, but also upon the group cohesion development.

In the experimental subjects, we mostly worked with means specific to basketball, while in the control subjects, we used means specific to gymnastics and athletics.

Within the social groups, there is a multitude and a variety of human relations that can be classified from numerous standpoints, the most significant one being related to their psychological content.

Observation is one of the most frequently used methods in psychosocial research, because it is relatively easy to organize and apply. We examined the group manifestations and reactions generated by its members' interaction, as well as the influences exerted by different pupils upon the group.

Observation, combined with various group discussions, provided us information about the affective and communication relations among pupils, about the group decision-making, the way of solving different group-related problems, the relations among the formal and informal leaders and the group of pupils.

In the first investigated class, the number of pupils is reduced - 12 -, but the relations among them are various.

They influence one another, act one upon the other, cooperate or help each other - but not totally and not always.

There were pupils who, within the group behavior, felt marginalized, isolated and therefore they became malicious with their colleagues in the beginning of the test, but by its end, they were accepted and even asked to make some decisions. While playing, these pupils were given the task to lead the game, responsibilities that rehabilitated them in their colleagues' eyes.

The class activity leadership doesn't have an individual character, but a collective one in the decision-making process.

We examined the group manifestations and reactions generated by its members' interaction, as well as the influences exerted by different pupils upon the group.

The sociometric test applied to both of the classes reinforced the importance of knowing the different aspects of the group interaction process.

This test aimed at establishing each pupil's place within the group, the interpersonal relations within the group, as well as its cohesion.

The sociometric test consisted in three questions through which pupils were asked to express their sympathies and antipathies toward the other colleagues. At each question, pupils had to name three colleagues, in the order of their preferences.

The sociometric test questions were the following:

1. If you were asked to learn with other classmates, who would you prefer?
2. Who among your classmates you wouldn't like to learn with?
3. When you play during the breaks, what colleagues do you prefer?
4. Who among your classmates you wouldn't like to play with?
5. Who are your best friends among your classmates?
6. Who among your classmates you wouldn't like to be friend with?

The test questions were made up on three criteria, as follows: the first criterion - a and b, the second criterion - c and d, the third criterion - e and f (Table 1 and Table 2).

The test data were included into the sociometric matrix reflecting pupil's attitude toward the group. Relying on the matrix data, we calculated the sociometric indexes related to each pupil's social expansion and inclusion.

Pupils are registered on the matrix both horizontally and vertically, and depending on their preferences specified in the test, we put down each pupil's answers related to his elections and rejections. We allotted 3 points to the first election or rejection, 2 points to the second election or rejection and 1 point to the third election or rejection.

Table 1. Sociometric matrix – rejections – the second group

	BM	CI	CM	CM	FC	FM	FN	GR	GG	HM	ID	PM	RD	SC	SE	SG	SN
BM		2	3 2	3		1		3					2				
CI			1				3	2	3			2	3				1
CM	2	1 1		2 3						3				2	3	1	
CM	2 1								1 3						3 2 3	2	
FC	1 1	1					3 1				2 3			2	2		3
FM	3			3				2	1					3	1		2 2
FN	1		3								3				2	3	
GR		1	2	3		3				3	1 2			1		2	
GG		1		3			1				2 2			3		2 3	1
HM		1				3	1 2	2						3 1			3 2
ID	1	3	2	3		2	3										1
PM						2	1 1 3	3 3			2 2 1						
RD	1		3	3			1	2			1 2 2			3			
SC								3 3 3			2 2				1 1	2	1
SE	1		3	2	2 3			1 1		3		2					
SG						1 2		3	1		2			3			3
SN							1	1 3		2			3	3			
Received rejection	4 4 2	3 3 2	5 2 1	2 2 5	0 0 0	2 1 6	5 3 3	8 3 1	3 2 4	2 0 0	5 7 6	0 1 0	0 2 0	2 4 5	3 5 2	2 3 2	4 3 3
Rejection value	5 7 4	4 5 2	13 4 2	5 6 14	0 0 0	3 2 14	11 4 5	18 9 3	3 4 8	6 0 0	9 14 13	0 2 0	0 5 0	6 11 9	7 10 4	5 6 4	6 6 7

Table 2. Sociometric matrix – elections – the second group

	BM	CI	CM	CM	FC	FM	FN	GR	GG	HM	ID	PM	RD	SC	SE	SG	SN
BM						2			3 3		1	 2	 3	2			
CI				1	3 3 3	2				1 2		1	2				
CM					1 1				1			2 3 3	3 2 2				
CM		1			3 3 3			1		2 2 2				1			
FC				2 1		1		3		1 3		3 2	2				
FM		2			3 3 3					2 1		1	2				
FN		2		2	1	1		1		2			3 3 3				
GR		2			3 2 3	1	3			1		1	2				
GG	1 2 2		1									2 3	3 1 3				
HM		2		1	3 1 3	2		3				1	2				
ID				3 3		3 1			2 1 2			1			2		
PM	1		2 2		2					1			3 3 3				
RD						3 3 3					1 1 1			2 2 2			
SC		1 2 3		2 1	3 3 2					1							
SE	1 3 1										3	3 2	2 1 1				
SG	2				2				2	1	3	3	1		1		3
SN		2 2		1	3 3		3			1 1			2				
Received election	2 4 2	2 3 5	0 1 2	1 3 4	12 7 11	0 6 0	0 3 1	0 3 1	2 1 1	7 5 10	0 0 2	11 4 3	12 4 5	1 2 2	1 1 0	0 1 0	0 1 0
Election value	2 8 3	2 6 11	0 2 3	2 4 5	31 18 29	0 9 0	0 9 1	0 7 1	5 1 3	10 7 15	0 0 6	20 10 7	25 7 11	3 6 4	2 1 0	0 2 0	0 3 0

Conclusions

The affective relations we noticed in the two groups converge to the idea that "diligent" pupils elected as formal leaders have a great influence on the other members. Communications take place around them, different activities are proposed around them, they are frequently required to make correct decisions.

The group knowing leads to the fulfillment of a triple finality: praxiological – through its contribution to the increase of school group efficiency; organizational – from the organization and management theory perspective, it facilitates the psychological phenomena directing, improvement and optimization; diagnostic and prognostic – it facilitates the school group current state understanding, explaining and interpreting, but also its future dynamics anticipation.

Through the physical education means, but particularly the basketball game, we can obtain educative results with a major effect on school groups. Basketball, through its regulations and possibilities to adapt to disabled children, eliminates negative attitudes manifested within the school groups.

Physical education, mainly through the means specific to sports games, favorably influences interpersonal relationships, being susceptible to induce in participants a positive affectivity.

Depending on the motricity level of each mental deficiency subcategory, physical exercises should be practiced both under their non-competitive and competitive forms.

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PRESCHOOL REGULATION DOCUMENTS IN ITALY ON MOTOR IMAGERY, OPEN LOOP, CLOSED LOOP AND DIDACTICS OF MOVEMENT

RAIOLA GAETANO[1]

Abstract

Purpose. To identify into the Preschool ministerial documents the educational activities and didactic on pedagogy of body and movement and the new neurological discoveries on motor control and learning

Methods. Theoretical-argumentative approach about scientific paradigms on motor control and learning and historical-documentary one about the ministerial documents on teaching activities

Results. Particular aspects, which can be connected to the new neurological theories, do not carry out. All ministerial documents does not provide any reference of motor imagery, open loop, closed loop and didactics of movement

Conclusions. It may be useful to deepen further the study and deliver the results to the governmental experts for the necessary updates to fill up the vacuum

Key words: regulation documents, motor imagery, open loop, closed loop

Introduction

To give a clear view of the preschool is necessary to declare the exact situation of the whole school in Italy by the official source.

Pre-primary education age from 3 to 6 years old. On 31 January 2008, the Italian population was 60.045.068. In the school year 2009/10, children enrolled in pre-primary schools were 1.007.108 Students enrolled in school education were 7.804.711. Of them, 2.578.650 were in primary school, 1.670.117 in lower secondary school and 2.548.836 in upper secondary school (all data refer

[1]Faculty of Educational Science, University of Salerno, ITALY
Email: raiolagaetano@libero.it
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to participation in State schools). The language of instruction is Italian, although in some areas the use of the local language is officially authorized for education. The *scuola dell'infanzia* is the first stage of the education and training system and it is not compulsory. Children who turn three within the 31st of December of the current school year can enroll in the pre-school in Italian language *scuola dell'infanzia.* Upon parents' request, also children who turn three on the 30th of April are admitted to pre-primary education. Children enrolled in pre-primary education, considering both State and non-State schools, are about the 96-97 % of the entire population aged 3-5 years. Pre-primary education is offered free of charge. Families are asked to pay a sum for transport and canteen services. Families with low incomes are exempted.

The amount of hours in one year is between 875 and 1.750 hours, corresponding at about a minimum of 25 and a maximum of 50 hours a week. Generally, children are organized in groups according to their age. Groups can be made up of a minimum of 18 and a maximum of 26 children (National system overviews on education systems in Europe and ongoing reforms (EURIDYCE 2010 pp.1-2). Pre-primary education is organized at specific segment of school called in italian *scuola dell'infanzia*, it lasts 3 years and is addressed at children from 3 to 6 years of age. The *scuola dell'infanzia* is part of the education and training system, yet it is not compulsory. These segment, already called in the past time nursery schools, are co-educational establishments and may be located on the same premises as primary schools or, when the premises are in other places, are separate. They are the only type of pre-school in both the State and non-State sectors. Responsibility for State pre-primary education establishments lies within the Ministry of Education, University and Research with the administration of the majority of nursery schools being delegated to local education authorities. As the State nursery schools are unable to meet the demand, non-State schools (private and municipal) receive subsidies from the State, provided certain essential conditions are met. In addition to subsidies, there are sources of funding provided under the terms of regional laws. This funding is provided directly to schools or indirectly through pupils' families. The State only took over complete responsibility in the sector of pre-school education in 1968 with Law no. 444. However, with the passing of time, pre-primary education has lost its assistance features and gained not only educational value, but also a full didactical autonomy even though it keeps a certain level of continuity with the primary level of education. The system was further radically reformed by Legislative Decree no. 59 of 2004, which was passed in implementation of delegated Law no. 53 of 2003 aimed at reforming the entire system of education and training. Under the terms of the reform, the three-year *scuola dell'infanzia* (the new name for nursery schools) is designed to foster 'the education and the emotional, psychomotor, cognitive, moral, religious and social development of children (...)' and to guarantee educational continuity with both childcare services and with schools. The *scuola dell'infanzia* is fully included in the educational system. (Structures of Education and Training Systems in Europe Italy 2009/10 Edition, EURYDICE CEDEFOP ETF Sharing Expertise in Training, p. 13)

General objectives of preprimary school is not compulsory and lasts three years (Organization of the education system in Italy 2009/2010, EURIDYCE EACEA, EU, p.49). It contributes to the affective, psychomotor, cognitive, moral, religious and social development of children and promotes their potentiality of establishing relationships, of autonomy, creativity, learning and to secure equal educational opportunities: in the respect of the educational responsibility of parents, it contributes to the integral education of children; through its autonomy and didactical and pedagogical unity, it carries out the educational profile and the educational continuity together with all childhood's services and the primary school' (Legislative Decree 59/2004, art. 1).

The ministerial documents are in temporal order: 1969 Guidelines for the educational activity, 1991 Guidelines for the preschool, 2004 National Guidelines, 2007 Guidelines for the curriculum, 2009 Revision of the educational organization regulated directions of the pre-school.

After this rule analysis it is useful to make a real argument about theoretical aspects of the psychophysiology of the movement and its didactics.

Recently, it begins a process that starts to break down the wall that rigidly divides the sciences of life and human sciences. Several research methods can be integrated to investigate on the whole phenomenon which may include fields of knowledge completely different such as neurobiology and philosophy to investigate on the theory of mind on motor activities or, in this case, between neurophysiology and motor skills teaching. In the theories of the movement change is big and should correspond with an adjustment in teaching to update the educational theories that relate to the body. Particular nerve cells are called mirror neurons for the property of reflecting in the mind the movements of others or of imagining their own standing still. They do not contribute to the practical execution of the movement while being structures appointed to motor nerve but they perceive it (Rizzolatti, Iacoboni, Gallese, Fogassi, Fadiga, 1996). For this reasons, this theory is called motor imagery. They have the normal nervous activity, they discharge the electrical potential and thanks to x-ray sophisticated instrumentation of brain-imaging

or neuro-imaging such as Positron Emission Tomography (PET), Functional Magnetic Resonance Integrated (fMRI) of Transcranial Magnetic Stimulation (TMS) and Magneto Encephalo Graphy (MEG) it is possible to highlight. All the time occurs that when the people see, hear, proprioceptive feel inside the body information concerning the movements or of other movement when there are a minimum of interest in others. The existence of this phenomenon demonstrates that particular neurons are discharged when there is not movements. However, they can be active even it imagines a self movement but we do not run it. It means that action and perception occur in the same time and help each other in all steps of movement. Thus, there is also knowledge in the same time without the traditional sequential stages of sensitive afferent or perception, development of the motor idea, motion planning, execution of actions and their feedback. The preschool is particularly interested in this new way of scientific development for the consequences that may have on the educational activity; applications may influence the mechanisms of acquisition of motor skills and development of it among motor control by visual perception, motor imagery and performance (fig. 1).

There may also be learning in other fields of knowledge different from physical education where the relationship among body, movement and learning produces spatial, temporal, sequential, linguistic, expressive and musical learning and so on. These "learnings" are the study of the educational psychology that updates its own scientific paradigms in relation to these discoveries. Embodiment and situatedness are the center of learning in early age, which means embodied and situated cognition is into the phenomena on the body and movement to develop the learning way.

However, it is important, to point out some aspects in order to understand better how to take advantage of these discoveries as well as how to avoid an inappropriate use and distorted cultural spreading (Gallese, 2007). Finally, it is important sense-perceptive competencies, the movement in the space and the time and, at least, the body language meant as a communicative-expressive way according to the two more shared scientific paradigms: closed-loop motor control and open-loop motor control. The first provides that the perception is first and then the movement and so constantly in a continuous loop called closed-loop motor control system (Adams 1975). In this case the movements are those that are not present in the memory and are executed with the help of feedback for adjustments and corrections of errors. They are constantly updated through the comparison between what is perceived, called perceptive trace, and what you have in mind, called memory trace.

The second motor control system theory is also expected that first is the perception and then the movement but in one or different scheme called open-loop motor control system (Schmidt 1985). Together two motor control system are the one way to explain how it executive the movement (fig. 2). It clarifies some differences about the past other model that is the movements and its trace are already present in memory and do not adjust themselves with the comparison and they can't be corrected when the feedback occurs below 200 milliseconds because the brain can't process them and use them to elaborate the adjustments and corrections. This theory states that there are in memory a wide range of similar movements among them in a sort of container or register. These patterns are already present at birth but become active in certain circumstances already in a functional manner. The new discoveries about the brain suggest a mixing up of perception/action in a single process where perception and execution are set together without a sequential order and where the knowledge derived from movement is learned in a single process.

The aim of this study is to verify if the ministerial documents of the preschool and if there are aspects of psycho-pedagogy and educational applications of any recent neurological and scientific discoveries on mirror neurons or motor imagery, closed loop motor control system and open loop motor control system. To help a development of an epistemological and psycho-pedagogical framework including any related educational applications about body and movement; to make an epistemological reflection on the theory of human movement in the educational school environment for preschool activities in connection with the primary school.
In synthesis to identify into the preschool ministerial documents the correlation between the educational activities and didactics on pedagogy of body and movement and the new neurological discoveries on motor control and learning.

Methods

Integration of different types of research into a single model with an ecological approach. Theoretical and argumentative research that analyzes methodological and didactic patterns of motor activities according to the main educational psychology and neurological and physiological theories. Historical and documentary research that analyzes the methodological and teaching contents of physical activities in preschool obtained from ministerial papers. Comparative research that correlates the different models of study of physical activities for children.

Results

First of all it declares specifically the contents of single document relating the investigation. Secondly, in declaration, check the didactics and the education sentences to search the neurological and

physiological elements relating the body and movement. The document 1969 Guidelines for the educational activity contains a double orientation: the first one orientated to the harmonic development of the body and its natural expression by guide of the master and the second one to include the complexity of movement to help to develop the child to grow up. There is not nothing elements on motor control system or didactics method to teach.

The document 1991 Guidelines for the preschool contains a strong appeal for a didactic guided by the free doing and acting and the provision of appropriate learning environments for a rich and extensive stimulation. The field of knowledge is divided by areas and that of body and movement is enhanced as other fields of knowledge. The teacher's role is slightly active tending in some cases to director of operations. It is not found evidence related to the new discoveries neither data on the type of motor control. The document 2004 National Guidelines is a mere list of objectives to be achieved in the form of motor skills and there is no single reference to teaching. Basically, it refers to the document above and does not refer to any element related to the theories of motor control or to the recent discoveries.

The document 2007 Guidelines for the curriculum resumes the contents of the document Guidelines for preschool and they are contextualized in a disciplinary process that goes from childhood to the end of the first education cycle. It widens the sense of continuity of teaching action without indicating specific teaching methods. It does not indicate a specific item on motor control and does not address to new scenarios on movement in the light of the discovery of mirror neurons or the other two motor control system theories. In all the documents there is no cultural basis of theories of motor control and there are no elements of new scientific discoveries about the brain from the motor point of view. The psycho-pedagogical paradigms are totally based on the overall contents on learning generalizing the teaching in all fields of knowledge. Ultimately, there is no trace of a scientific specificity about body and movement nor there is a cultural content on the theories of motor control. The last regulation documents (D.P.R. 20 marzo 2009 n.89 2009 Revision of the educational organization regulated directions of the pre-school) does not address the solution way because give at the single autonomy experimentation the leading of next steps. In this moment there is not the results of experimentation and the Minister of Education did give the indications yet.

Discussion

All documents are lacking in cultural references about motor control and there is a total absence of general knowledge and specific one on human movement. However, psychological and didactics aspects are not in relationship to a new discoveries of functioning of mind, but the references are exclusively regarded the pedagogical authors. The unique and overall knowledge is useful for the holistic approach to knowledge but it does not realize at all the objective of the recent scientific knowledge of a field of motor activities. What is needed is a detailed review of the psycho-pedagogical principles at the basis of ministerial documents with the purpose to insert clear links to the theories of motor control and human movement. As Ján Figel says in Early Childhood Education and Care in Europe: Tackling Social and Cultural Inequalities EACEA P9 Eurydice (2009) “Pre-primary education has the highest returns in terms of the social adaptation of children. Member States should invest more in pre-primary education as an effective means to establish the basis for further learning, preventing school drop-out, increasing equity of outcomes and overall skill levels. For this reason, the Commission has identified pre-primary education as a priority theme for cooperation between Member States in 2009-10, in particular to promote generalised equitable access and reinforce the quality of provision and teacher support”. For this reason, it is trying to find some remarkable points to compare the aspects on new scientific research on motor control systems and pre-school educational document.

In this way it wants to give relevance to the European Commission’s attention regarding the infants' institutional education given after 2009 in several states in European Union. It seems to be a quite difficult overview highlighting just a portion of these system without a description of the entire structure.

Because of in pre-schools the average Italian children’s age is between 2 and 5 and the terminology used to identify this type of school philosophy is used in different ways, such as words like ‘kindergarten’, ‘childhood school’, ‘infant school’ or ‘pre-school’. This remarkable effect can be also discovered nowadays in denominations and theories of different states of EU early-childhood educational systems. In some languages, these types of institutes are called ‘pre-schools’ or ‘infant schools’. It may refers to a dominant teaching activity influence. “Italy is a democratic republic organized on the basis of a Constitution drawn up in 1946-47, which came into force on 1st January 1948. Its history since the Second World War has been characterized by tremendous economic growth and unequal advances in modernising the social and political structures of the country. Much negotiation has taken place between the different political

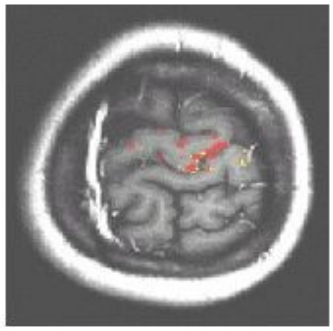
tendencies and between government and the traditional institutions. Over more recent decades, local, provincial, and regional entities have joined the debate, with a very-present emphasis on the values of diversity and decentralisation." (OECD, 2001. p.8.) As it can be know, Italy has more than 50 years of experience in democracy. Developmental process of its educational system traditionally has run together with a changeable democratic society.

Because of it is just quoted that the importance and prominence of Pre-primary education in terms to returns of the social adaptation of infants. Thus, the Member European States should invest more in this segment of school due to the education as an effective means to establish the basis for further learning in Primary school, preventing school drop-out, increasing equity of outcomes and overall skill levels. The Italian state have to follow the European Union's leadership. For this reason, the Commission has identified pre-primary education as a priority theme for cooperation between Member States in 2009-10, in particular to promote generalised equitable access and reinforce the quality of provision and teacher support".

So at the close of the past century, Italy achieves universal provision of preschool education, through a combination of several services programmes, availability and goals. Attendance at a *scuola materna/scuola dell'infanzia* is now commonly accepted as the first and essential stage of the educational system and a vast majority (over 95% state-wide) of Italian three-, four-, and five-year old children now attend some form of pre-primary school. The distinctions among types of pre-primary schools are variously identified, both in conversation and in the literature, as (a) public or private, (b) state or non-state, or, most commonly, (c) state, communal, or private.' (OECD, 2001, p.15-16).

Finally it suggestions to address the traditional way to concern the training' teachers throughout a new one of Master Degree to Preschool education such as in the most states of European Country in accordance to Bologna process and to Dublin descriptors following the new discoveries on motor control system and new didactics in application of it. .

Fig. 1 Soc. Neurosci. Abstr., Vol. 26 p.967, 2000



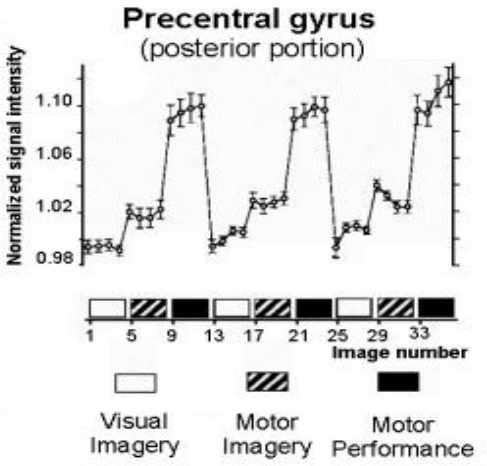
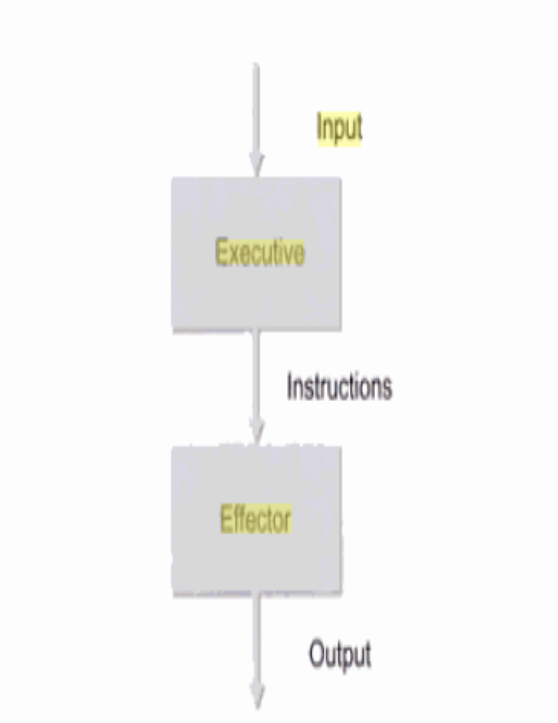


Fig. 2 *Schmidt e Wrisberg* 2008



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STUDY REGARDING THE PHENOMENON OF AGGRESSIVENESS IN SCHOOL

ŞALGĂU SILVIU[1], DOBRESCU TATIANA[1]

Abstract
"If the sports register a public and participation, as well as a financial success, they are threatened by dangers that we must face in order to keep their reputation. These dangers are represented by insecurity, doping, and lack of ethics", warned the president of the International Olympic Committee Jacques Rogge (2004).
The main aim of this research is to observe the manner in which the aggressiveness manifests itself in primary and middle-school, as well as to try to formulate a prevention and intervention program for this phenomenon, with regard to the pupils having this kind of problems.
The data gathered through the analysis and observation of aggressive behaviors (physical and verbal), in the case of primary and middle-school pupil, offered a basis for information on the causes and ways of manifestation of aggressiveness in school.
The aim of this instrument was to identify the frequency and order in which the pupils of different grades perceive the 6 types of aggressive behaviors, considered to be the most frequently encountered in school.
After analyzing the averages and the standard deviations on grades, I got total scores for each type of behavior, the order being from 1 to 6, in the order of the frequency of encounter, 1 representing the most encountered type of behavior, and 6, representing the least encountered type of behavior.
We can observe, on the basis of the general analysis of the grade averages for each of the 6 aggressive behaviors, that they differ, a fact confirmed also by the results of the Kruskal Wallis comparative test for each of the aggressive behaviors included in the "Inventory of the observed aggressive behaviors".
Today in the world, in spite of the well-known adverse effects regarding domestic, school, and mass-media violence, our society continues to give short answers for short terms. In order to diminish as much as we can the destructive ways appearing as a result of childhood violence, we must allocate energetic and financial resources, and time. Predictable resources are necessary, linked to the safety and variety of the environments the children live in.
Key Words: aggressiveness, school, questionnaires, prevention

Introduction

"If the sports register a public and participation, as well as a financial success, they are threatened by dangers that we must face in order to keep their reputation. These dangers are represented by insecurity, doping, and lack of ethics", warned the president of the International Olympic Committee Jacques Rogge (2004). Sports offer the young people the possibility to relax, to solve their emotional tensions, and to take them away from aggression. More, the success achieved in sports strengthens the self-confidence; it favors the social contacts and group cohesion. Sport cannot be considered a "fix-shop" for social acts, but it does have the necessary instruments for fighting violence and for social integration.

Using their leisure time in disorganized environments and lesser structures makes the young people to accept violence and lack of fair play, intolerance, aggression, which they exert in certain contexts up to an extreme level. The activity, often voluntary, conducted for youths in sportive clubs and associations, integrates them and makes them a part of a community of rules and values, thus being able to exert stabilizing influences, contributing to maintaining and developing the features of the young people's personalities.

The contribution that the sports bring regarding the construction and promoting a civilized society, trespasses the limitations imposed by the areas marked by wars and crises. It is well-known the fact that even the best democracies are not guarded against inner conflicts and acts of violence. (Rață G., Dobrescu T., 2006)

The sport, an important field of education for fair play, can be a "school of life", developing skills and values such as: self-confidence, trust in others, honesty, self-respect, tolerance, team work, discipline, trust. The fair play, as a fundamental sportive and moral principle, is threatened today, not only in sports, but also in other fields of life. At the same time, the rules of fair play offer the opportunity to be a guide for us in this extremely competitive world. (Dobrescu T., Rață G., 2006)

What are the chances of fair play to impose itself in today's society, in which obtaining advantages and rule-breaking are more and more common? In a society that is under threat of becoming orientated exclusively towards success, the temptation to break the rules of the game, to focus only on your own advantages, is great. The British author George Orwell wrote in 1948: "Serious sport has nothing to do with fair play. (Quoted by Țopescu, 2003) It is bound up with hatred, jealousy, boastfulness, disregard of all rules." A humble disciple of this principle, Cristian Țopescu was wondering whether "in this world, in which the violence and vulgarity become everyday an alarming virtue, both inside the sports arenas, and outside them, isn't it a little bit cynical to talk about fair

[1]Faculty of Movement, Sports and Health Sciences, „Vasile Alecsandri" University of Bacău
Email: salgausilviu@yahoo.com

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play?" (2003).

But that makes even more of a problem for fair play, when this "irregular" game from the court is continued outside of it, in the stands, or the streets. Today we meet more often than not acts of violence performed not by the athletes involved in the game, but by their moral and financial supporters, by the clubs' staff, the specialists and investors, supporters and fans. (Dobrescu T., Rață B., 2006)

Material and method

The main aim of this research is to observe the manner in which the aggressiveness manifests itself in primary and middle-school, as well as to try to formulate a prevention and intervention program for this phenomenon, with regard to the pupils having this kind of problems.

The data gathered through the analysis and observation of aggressive behaviors (physical and verbal), in the case of primary and middle-school pupil, offered a basis for information on the causes and ways of manifestation of aggressiveness in school.

Considering the detrimental character of the aggressive behavior that obviously perturbs the social activity, and considering the aggressive manifestations observed in school, we set to:

- observe the ways in which aggressiveness is perceived by pupils of different grades and ages through essays and concrete examples of aggressive behavior encountered by them in school;
- identify the most frequently encountered aggressive behaviors in pupils of different grades and ages, in school;
- identifying, based on results, of the real causes of aggressive behavior,
- elaborating a prevention and intervention program regarding the school-encountered aggressiveness.
- including the aggressive pupils in a counseling program.

Based on the emphasized premises, we elaborated the research hypothesis, stating that the identification and the assessment of aggressive behaviors - considered being most frequent in a middle-school institution, constitutes a starting point for a improving intervention.

The group of subjects comprised in the research comprises primary school (303) and middle-school (378) pupils, from the No. 10 School, of Bacau. The group of subjects consisted of 681 pupils. The research conducted on the subjects was according to every ethical standard. The study was conducted over the course of three weeks (October 17 - November 9 2010).

The *research methods* I used were: the documentation method, the observation, the inquiry, the statistical-mathematical method and the graphical representation method.

Based on certain questionnaires given to the subjects of this research, we created an inventory of aggressive behaviors. Their assessment was done on the basis of the 6 stages Lickert scale. The pupils' task was to give a mark from "1" to "6" to each behavior, according to the frequency this behavior was observed in their school, "1" meaning very rarely observed, and "6" very often/frequently observed.

The aim of this instrument was to identify the frequency and order in which the pupils of different grades perceive the 6 types of aggressive behaviors, considered to be the most frequently encountered in school.

I have selected the most suitable tasks for the level of development of the studied children, in order to observe in optimal conditions the aggressive behavior manifested in primary and middle-school pupils.

The questionnaires comprised items such as "What do you understand by aggressiveness?" What is aggressiveness? How can we define it? "Give examples of words that refer to aggressiveness", "What kind of aggressive behaviors do you know?", "What kind of aggressive acts do you know?"

Out of all of the aggressive behaviors offered as examples by the pupils, we selected 6 - the most frequent aggressive behaviors observed in the school, according to the criterion of the frequency, or observation by the pupils inside their school.

Results of the research and discussions

Starting from the negative effects the aggressiveness has in the school environment, visibly perturbing the instructive-educational process, but also the relations between pupils and teachers, and taking into consideration the intervention capacity of the teachers, and especially school counselors (by implementing certain intervention and prevention programs in primary and middle-school), I tried to observe the ways in which the aggressiveness manifests itself in school, by collecting information from the pupils.

This study tries to identify the forms of manifestation of the aggressiveness in school, its gravity, its frequency, and also to identify the differences between the manner of manifestation of aggressiveness - physical and verbal - among the studied pupils. The investigation of aggressive behavior made possible the observation of differences in manifesting aggressiveness according to social class. All the collected data constituted an obvious support for finding certain programs of prevention and primary, secondary and tertiary intervention in the case of school aggressiveness.

In a first stage, we started from the definition of "aggressiveness" given by each individual pupil, as well as each of them offering concrete examples of aggressive behavior and manifestations they observed in school, and which type of behavior they encountered more often. The

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pupils gave examples of concrete situations in which they have observed aggressive behaviors, and named them. At the same time, they estimated the frequency in which each type of observed behavior appears, on a five steps Lickert scale, "1" meaning rarely encountered, and "5" frequently encountered.

As a result of the definitions and the essays given by the pupils, I selected and identified the following ten types of behavior, encountered by the primary and middle-school pupils:

Table 1: Aggressive behaviors observed by the pupils inside the school:

Observed behaviors	Average	Standard deviation
Are pushing each other	4.75	0.05
Are fighting each other	3.70	0.95
Are cursing each other	2.50	1.73
Tripping each other	1.00	2.00
They steal	1.00	0.81
Are arguing with each other	3.00	0.81
They spit	0.50	0.57
They don't obey the rules	1.00	2.00
They threaten	2.70	2.21
They destroy objects	0.50	1.00

Through a statistical analysis of this data collected from each grade, I could note six types of aggressive behavior observed by the pupils in school, marked according to the frequency they encountered them.

The data I obtained is presented in the table below, in which the types of aggressive behavior observed in pupils appear in a hierarchical order:

Table 2: Hierarchy of aggressive behaviors, in pupils of different grades:

Number	Aggressive Behavior	Observation frequency	Hierarchy
1	Are pushing each other	4.75	I
2	Are fighting each other	3.75	II.
3	Are arguing with each other	3	III.
4	They use vulgarities (threats, insults)	2.75	IV.
5	Are cursing each other	2.50	V
6	They destroy objects	2	VI

The results we obtained were analyzed both globally, at school level, represented by the group of subjects, representative for the eight grades we comprised in our study (681 pupils), and according to grades (primary and middle-school level).

Based on the assessments the pupils made regarding the aggressive behaviors in school, I chose them according to the highest frequency they appear, calculating the averages and the standard deviations appearing in these manifestations. I must mention that the hierarchy was done from 1 to 6, from the most frequent behavior observed in school, to the least frequent.

In order to observe how much the aggressive behavior observed in school affects the pupils, I made a statistical analysis, assessing the frequency of observation of these behaviors, on a Lickert scale, from 1 (representing the least encountered type of behavior), to 6, representing the most encountered type of behavior.

After analyzing the averages and the standard deviations on grades, I got total scores for each type of behavior, the order being from 1 to 6, in the order of the frequency of encounter, 1 representing the most encountered type of behavior, and 6, representing the least encountered type of behavior.

Table 3: Statistical start indexes for aggressive behaviors; comparison of the scores for the 6 aggressive behaviors observed in the school:

Aggressive manifestation	Average	Standard deviation	Value of χ^2	Significance of the difference to the theoretical average (p)
1 pushing	7.63	1.96	1.67	P < 0,008
2 curses	7.53	2.84	2.11	P < 0,00
3 arguing	6.96	2.46	1.46	P < 0,02
4 fighting	6.57	2.33	1.35	P < 0,05
5 threats	6.33	2.27	0.92	P < 0,36
6 object destruction	3.87	2.56	1.52	P < 0,01

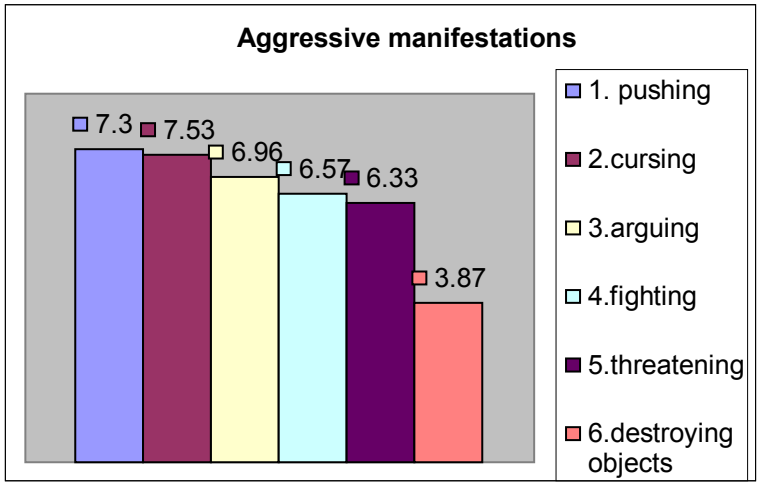

Fig. 1. Graphical description of aggressive behaviors that can be observed in school

From this data, we can see that the pupils consider "*pushing*" as being the most common form of manifestation of aggressiveness, this could have being considered a masked form of physical aggressiveness.

As a consequence, the theoretical average is 6, so we used the standard deviations, the observed averages, for each of the aggressive behaviors. The highest the observed average is for a behavior, the more that particular behavior is manifested more frequently in the school environment. We can see the distribution of the averages in comparison to the theoretical average, for the frequency of the aggressive behaviors manifested in the school. All these deviations of the observed averages from the theoretical average are statistically significant.

We can see that "*pushing*", "*insults*" and "*arguing*" are the most frequent aggressive behaviors. The verbal aggressiveness represents a way of channeling the physical aggressiveness; it is used by the pupils more frequently than the physical one, maybe due also to the fact that it does not attract an immediate sanction. "*Pushing*" represents a masked form of physical aggressiveness. "*The destruction of objects*" appears less frequently, maybe because of the fear of sanctions and punishments that can be applied in schools to the pupils that destroy the school property.

The data were analyzed through the SPSS 12 software.

There are significant differences between the primary school and the middle-school grades pupils, regarding the perception of aggressiveness, so during the collection of data, we compared the frequency of appearance of aggressive behaviors between grades.

In order to see how the pupils perceive the six aggressive behaviors (the most frequently encountered in the school) as being representative (on a scale of "6" - representing the most encountered type of behavior, to "1" - representing the least encountered type of behavior), we analyzed the averages of the scores obtained by grade, in the "Inventory of Aggressive Behaviors". The results can be seen in the table below:

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Table 4. Comparison of the scores regarding the aggressive behaviors observed in the school:

Behaviors	Degrees of freedom	χ^2	Significance thresholds
Pushing	3	15.5	0.00
Fighting	3	11.2	0.01
Arguing	3	6.6	0.08
Cursing	3	26.4	0.00
Threatening	3	15.8	0.00
Destroying objects	3	22	0.00

We can observe, on the basis of the general analysis of the grade averages for each of the 6 aggressive behaviors, that they differ, a fact confirmed also by the results of the Kruskal Wallis comparative test for each of the aggressive behaviors included in the "Inventory of the observed aggressive behaviors".

So the obtained results confirm the hypothesis stating that on the basis of an inquiry, we can make an assessment of the aggressive behaviors considered to be the most frequently encountered in the school. Thus, for each of the 5 behaviors (*pushing, fighting, cursing, threatening, destroying objects*) we got significant statistical thresholds ($p < 0.05$, respectively $p < 0.01$), while for the behavior "*arguing*" we got an χ^2 calculated by 6.6, to which there is a corresponding threshold of $0.08 > 0.05$, the differences of assessment regarding this behavior not being confirmed. In conclusion, in regards to this aggressive verbal behavior ("arguing"), it was assessed approximately the same by all of grades we comprised in the study, not being any significant differences in assessing this type of behavior between the grades we studied.

With reference to the risk factors from the school environment, in this study the most predictable in determining the aggressive behaviors were the ones linked to scholarly failure, or poor performances. Also, other risk factors regarding the pupil's aggressiveness could be taken into consideration. Among these, one of the most important are the normative beliefs regarding aggressiveness.

Other school factors correlated with the aggressive behavior refer to the lack of involvement in school activities, the absence of clear rules and school policies regarding the pupils' behavior, as well as poor attention given to the individual differences inside the school. For example, when the educators fail to establish certain clear rules, or when they establish inconsistent sanctions for the ones that break them, the pupils cease to follow the school rules, or they learn to manipulate them in their own interest, but non-adaptively (Mayer, 1995 quoted by A. Roşan 2006).

The zero tolerance policies and an authoritarian style of discipline applied to the school conflicts tend to exacerbate these dysfunctions.

When the school curricula and the ways of performing the instruction are not adapted to the level of skills of the pupils, they become frustrated or bored, manifesting a total lack of attachment towards their own school. (Scott, 2001, quoted by A. Roşan 2006) This relation is obvious in the case of many pupils who are emotionally and behaviorally troubled, and who present instrumental difficulties in different disciplines.

The relation between behavioral problems and instrumental difficulties are also because of the different instructional volume, offered in time by the teachers to the pupils with behavioral problems, who are aggressive with their non-problematic colleagues.

The teachers have the tendency to interact less with the destructive pupils. In a study on the children risking to adopt an antisocial behavior, Wehby (1993 quoted by Roşan, 2006) found that the teachers use twice the number of negative commands for them, in comparison with the pupils with no problems. The teachers have the tendency to exclude the pupils with behavioral problems from their class, on the basis of certain disciplinary measures (Skiba and Peterson, 2000 quoted by Roşan, 2006).

The types of social interactions that appear in classes with pupils presenting behavioral troubles, most of the times start with the direct demand of the teacher to the pupil to "do something", and the pupil must obey. Also in these classes we could observe the almost total lack of positive reactions from the teachers, even when the pupils who previously created problems now behave adequately.

Other factors that must be taken into consideration are the deficient relationships between the pupils, the hostile climate in the classroom, the lack of close relations, and of an inter-individual perception.

The longitudinal studies on the pupils with behavioral problems proved that more than half of the pupils with average problems in the primary and

middle-school present a high risk of development problems during adolescence and adulthood (Farmer et al., 2001, quoted by Roşan 2006).

These factors, and not only them, must be strictly taken into consideration when we are dealing with intervention in primary and middle-school for diminishing or preventing aggressive behaviors.

Conclusions:

Today in the world, in spite of the well-known adverse effects regarding domestic, school, and mass-media violence, our society continues to give short answers for short terms. In order to diminish as much as we can the destructive ways appearing as a result of childhood violence, we must allocate energetic and financial resources, and time. Predictable resources are necessary, linked to the safety and variety of the environments the children live in.

If we want violence to disappear from schools, we must be pro-active in our decisions and to analyze the origins of the problem. Violence can be prevented in schools, when children are not predisposed to numerous risk factors. The research indicates that the antisocial behavior models that appear early on in children constitute an enormous risk factor with long term negative effects.

We need valid instruments to identify the children presenting a high risk at a young age, followed by a reorientation from these destructive paths, without ignoring the problem in the hope that it will solve itself, because it surely will not. The incidence will be even higher in the absence of proper interventions and supports.

We must have in mind the fact that before developing more effective and accessible intervention models, we must focus on prevention.

The ones studying the aggressive behavior in schools, as well as the decision makers must understand the indestructible relation between early life experiences and physical, emotional, social and cognitive health.

Changes at a cultural level can only produce by furnishing rich experiences at a cognitive, emotional, social and physical level. Before society would offer these experiences, the child's education must come first. The education of the teachers and parents must be continued by a development in the research on the impact of positive experiences on child development. All of these must be used at the same time with the implementation and testing certain programs that would enrich the life of the child and his/her family, as well as certain programs of early identification and pro-active intervention.

Starting from the harmful consequences of aggressive behavior observed in the school environment more and more, and from the need to intervene where this problem proves to be harder and harder to master, perturbing even the adequate performance of the instructive-educational act and the general climate of the school, an intervention regarding this phenomenon must be made.

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IMPROVING THE TEACHING CAREER IN PHYSICAL EDUCATION AND SPORTS THROUGH EUROPEAN SOCIAL FUNDS

STĂNESCU MONICA[1], URZEALĂ CONSTANȚA[1], VASILIU ANA MARIA[1]

Abstract

Aim. This paper emphasizes the specificity of the teacher continuing education programs developed through European Social Funds at the Bucharest National University of Physical Education and Sports.

Methods. To fulfill the aim of this paper, we applied a questionnaire for the program quantitative and qualitative analysis, by including items able to reveal teachers' opinion about the discipline contribution to their education.

Results. Results were structured on: total number of teachers vs. graduated teachers and their attitude towards the continuing education. Each category was analyzed by taking into account teachers' experience and the types of institution they belong to.

Conclusions. Conclusions present the advantages and limits of the continuing education in our specialty field.

Key-words: education, teacher, physical education, sports

[1]National University of Physical Education and Sports - Bucharest, ROMANIA
Email: monica_iulia@yahoo.com

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Introduction

This paper is part of the POSDRU project 19/1.3/G/13096 *Professionalization of the teaching career in physical education and sports from the lifelong learning perspective*, co-financed by FSE through POSDRU 2007-2013, its beneficiary being UNEFS and its implementation being achieved in partnership with the Teaching Staff Houses of Giurgiu, Teleorman, Olt and Dambovita, as well as with the Bucharest Municipal School Inspectorate, during 2 years (2010 – 2011).

Professionalization of the teaching career represents a priority of the Romanian higher education system, in order to get it aligned to the European quality standards, in all the domains (N. Vințanu, M. Stănescu, R. Bejan, 2003).

Starting from the physical education and sports teacher's current status, the UNEFS DPPD (Department for Teacher Training) had the initiative to develop a continuing education offer and to increase the participants' interest in their lifelong professional improvement, by obtaining a co-financing resource from the European Social Funds, through POSDRU 2007-2013, which supports the program progress. Within the mentioned project, the following education programs were accredited by the Minister Order no. 4620/5.08.2010: "Physical education in primary schools - practical-methodical fundamentals", "Extracurricular sports activities", "Methods and means for the effort capacity recovery", "ICT applications to physical education and sports teaching", "Mentorship in physical education and sports", "Sports training in children and juniors". Each program is structured on 60 hours and grants 15 professional credit transfers.

As this project provides continuous education programs, it creates the premises for teachers' appointment in primary schools, by contributing thus to the increase of the employment general ratio, because it builds up competences specific to this education cycle. We also mention that, at this level, specialty teachers have been responsible with physical education classes since the school year 2007-2008, that's why the teaching staff is recommended, by the school inspectorates, to attend some purposely conceived education programs. Due to this specific contribution, the project backs the national policies, by optimizing the quality of human resources training and by stimulating their involvement into the teaching career (D. Byrd, 1981, A. Delhaxe, 2005, P. Santiago, 2005).

On another side, the project has a real contribution to the consolidation of teacher status and role, by reflecting the spirit of resolution adopted within European Committee for Education Conference (Bruxelles, 2005) "Europe needs teachers". "Human resources represent the main value of European Union. Europe will become what Europeans want. Teachers will have the main role on that process. We have to be sure that our teachers will be capable and will want to answer to the challenges of the new based knowledge society." (J.Figel, 2005; U. Fredriksson, 2005). In that way, the continuing education programs, promote new teaching methodologies in Physical Education and Sports, as ICT and advanced training methods for children and young people, from different sports branches.

Aim

This paper aims at highlighting a series of particularities specific to the educational programs developed in the project first year, in order to optimize the continuing education content and organization.

Method

By studying the official documents - grade transcription books, catalogues, we got the information necessary for us to assess students' level of involvement into the education program completing. As a research method, we used the questionnaire-based inquiry to find out students' opinion about the education program contents, respectively the contribution of different disciplines to the development of professional competences.

Results

As we can notice in table no. 1, 308 (82%) out of the 376 students completed the programs by submitting their final oral examination. The relatively high absenteeism can be justified by the fact that these final oral examinations usually took place on Saturdays, when the teachers participated in different sports competitions. This superposition of professional activities also made difficult their participation in the current activities, not only in the evaluation ones. Therefore, we can emphasize a first difficulty, namely the scheduling of education programs by the end of the week, which is a problem for physical education teachers, because sports competitions take place in the same period. With reference to the education program contents, the obtained data revealed a series of aspects related to the disciplines attended within each program.

Thus, for the program *ICT applications to physical education and sports teaching*, developed at Targoviste, we found out that the discipline thought to have the greatest contribution to the development of students' competences was *Measurement and evaluation in physical education and sports through ICT means* (figure no. 1). Further information about this education program showed that students were much interested in the analysis software presentation, because they had been confronted to this necessity in their professional activity (87%).

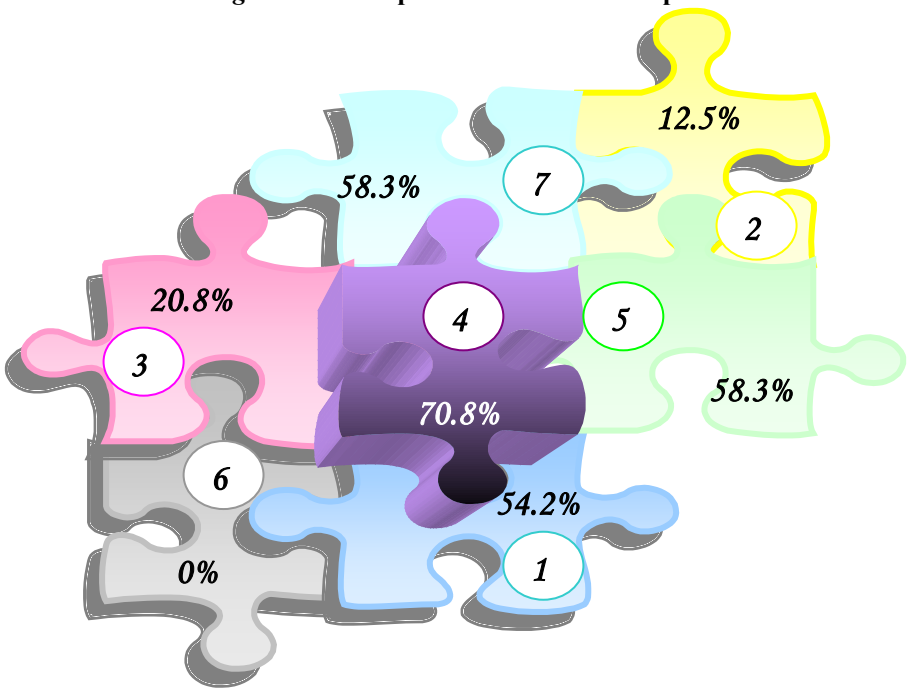
Table no. 1. Situation of the students participating in education programs (the project 1st year)

Education program	Location	Registered students	Students who have completed the program
Physical education in primary schools - practical-methodical fundamentals	Targoviste	42	38
	Slatina	82	73
Extracurricular sports activities	Alexandria	25	18
	Bucharest	28	26
Methods and means for the effort capacity recovery	Bucharest	40	29
	Targoviste	25	21
ICT applications to physical education and sports teaching	Targoviste	25	24
Mentorship in physical education and sports	Giurgiu	23	20
	Slatina	34	26
Sports training in children and juniors	Alexandria	25	15
	Bucharest	27	18
Total		376	308

Table no. 2. Contribution of disciplines in the program *ICT applications to physical education and sports teaching* to the development of students' competences

No.	Discipline	Options (percents)
1.	ICT - general notions	54.2%
2.	Computer-assisted instruction in physical education and sports	12.5%
3.	ICT use in programming activities specific to physical education and sports	20.8%
4.	Measurement and evaluation in physical education and sports through ICT means	70.8%
5.	Audio-video aids in physical education and sports	58.3%
6.	Document drawing up and management in physical education and sports by means of ICT	0%
7.	Informing documentation	58.3%

Figure no. 1. Contribution of disciplines in the program *ICT applications to physical education and sports teaching* to the development of students' competences



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Teachers who attended the education program *Mentorship in physical education and sports* (Giurgiu) laid emphasis on the discipline *Didactics of teaching gymnastic disciplines*, by considering its content necessary and efficient to the instructive-educative process. *Didactics of athletics teaching* was their next option determined by its importance to the development of physical education lessons.

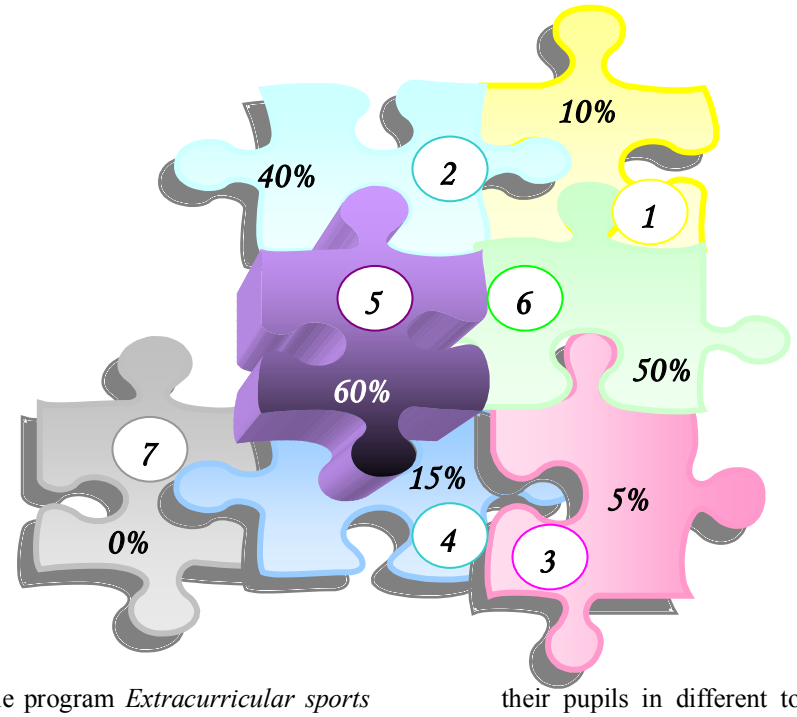
The recorded percentages confirm once more the gymnastics and athletics place and role in teaching the physical education and sports content within the school system (table no. 3, figure no. 2).

Students' suggestions about this education program content mainly referred to the psycho-pedagogic and counseling disciplines, to the approach of some less known sports and to the modalities of organizing extracurricular activities.

Table no. 3. Contribution of disciplines in the program *Mentorship in physical education and sports* to the development of students' competences

No.	Discipline	Options (percents)
1.	Physical education - a curriculum discipline	**10%**
2.	Management of the physical education lesson	**40%**
3.	Evaluation of the physical education teacher's activity	**5%**
4.	Didactics of teaching sports games	**15%**
	Basketball	25%
	Handball	25%
	Soccer	15%
5.	Didactics of teaching gymnastic disciplines	**60%**
6.	Didactics of athletics teaching	**50%**
7.	Didactics of teaching combat disciplines	**0%**

Figure no. 2. Contribution of disciplines in the program *Mentorship in physical education and sports* to the development of students' competences



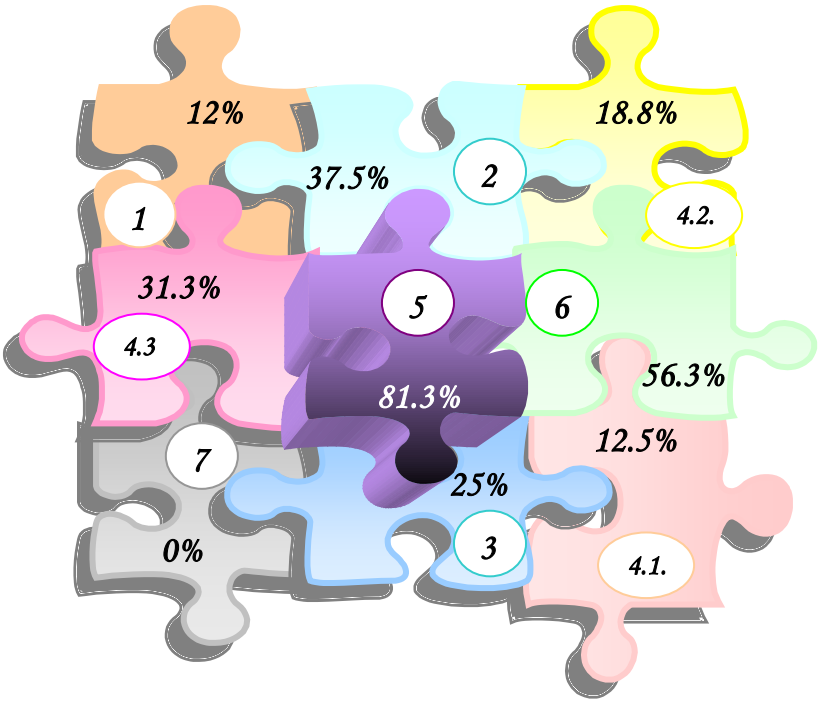
Within the program *Extracurricular sports activities*, most of the registered options were for the discipline *Racket sports* (81.3%) (table no. 4, figure no. 3), the teachers expressing, at least at the declarative level, their intention to introduce badminton and table tennis into the instructive-educative process. *Excursions and trips* represented another point of interest for the students (56.3%), because many of them organize camps and trips with their pupils in different tourist sites, activities for which some special competences are required.

Among the study topics considered by the students to be useful to their professional training, we can mention the didactic communication and the importance of extracurricular activities, as well as the minute description of some contents specific to sports artistic activities.

Table no. 4. Contribution of disciplines in the program *Extracurricular sports activities* to the development of students' competences

No.	Discipline	Options (percents)
1.	Didactics of physical education (extracurricular activities)	12%
2.	Leisure motor activities	37.5%
3.	Sports artistic activities (rhythmic gymnastics, cheerleading, aerobics)	25%
4.	Sports games:	
4.1.	- Indoor soccer	12.5%
4.2.	- Rugby tag	18.8%
4.3.	- Street-ball	31.3%
5.	Racket sports (tennis, badminton, table tennis)	81.3%
6.	Excursions, trips	56.3%
7.	Jogging	0%

Figure no. 3. Contribution of disciplines in the program *Extracurricular sports activities* to the development of students' competences



Nutrition, medication and doping in children's and juniors' training raised problems that captivated the attention of most of the teachers and coaches who attended this education program oriented towards the performance athletes' training (figure no. 4). Some aspects related to the effort energetic substratum, the alimentary compounds and supplements, the effort sustainers and the substances forbidden in performance sports, represented modern topics for children's and juniors' training.

Having in view that the child's personality is in progress at the age when he is involved into the performance competitive activity, his reactions and manifestations, under the contest pressure, being susceptible to negatively influence the result, students considered that they should be informed about the *Competition psychology in children and juniors.*

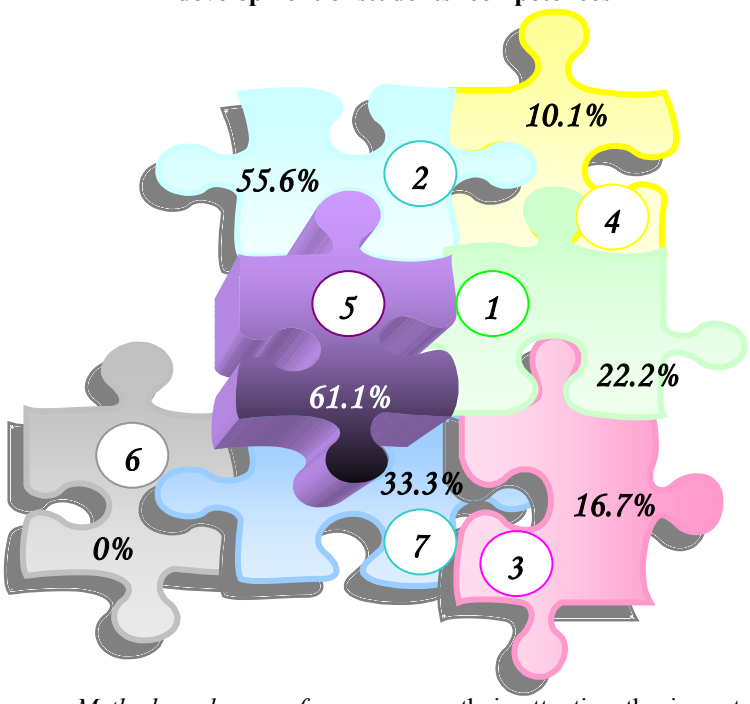
We think that one of the reasons for which teachers and coaches were interested in the discipline *Management of the organization and leadership in performance sections* was determined by the current financial situation of school sports clubs and by their need to support the participation in competitions by their own efforts.

The topics considered by the students to be useful are graphically represented above and they underline the necessity to introduce some further information about the sports training psychological component.

Table no. 5. Contribution of disciplines in the program *Sports training in children and juniors* to the development of students' competences

No.	Discipline	Options (percents)
1.	Training theory and methods in children and juniors (on disciplines or groups of disciplines, according to students' specialization)	22.2%
2.	Competition psychology in children and juniors	55.6%
3.	Effort physiology in children and juniors	16.7%
4.	Planning/monitoring in children's and juniors' training	10.1%
5.	Nutrition - medication - doping in children's and juniors' training	61.1%
6.	Selection for performance sports	0%
7.	Management of the organization and leadership in performance sections	33.3%

Figure no. 4. Contribution of disciplines in the program *Sports training in children and juniors* to the development of students' competences

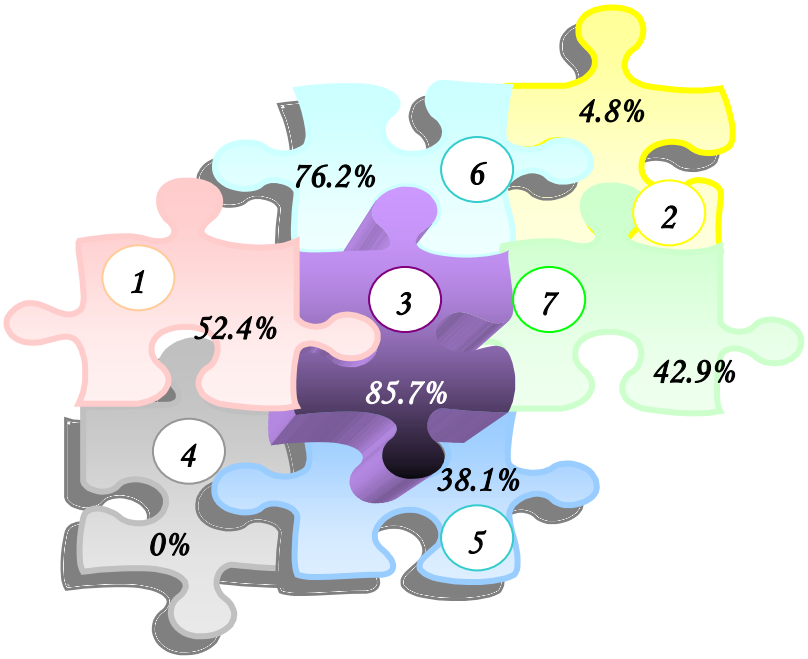


Within the program *Methods and means for the effort capacity recovery,* students thought that *Massage - a recovery means* (table no. 6, figure no. 5) greatly contributed to their professional improvement. The massage manipulations and techniques in this discipline content represented innovating elements for the students and brought to their attention the importance of giving the athlete the necessary time to recover after an effort. Other points of interest for the students, who would like them to be minutely described, are the following: frequent injuries in performance sports, pharmacology notions, notions related to athlete's hydrating.

Table no. 6. Contribution of disciplines in the program *Methods and means for the effort capacity recovery* to the development of students' competences

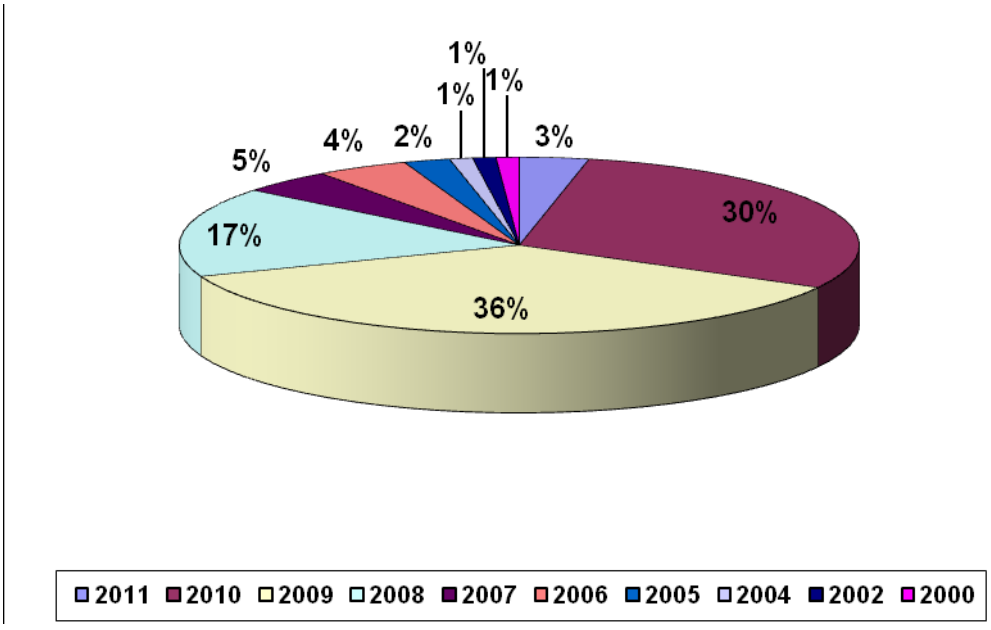
No.	Discipline	Options (percents)
1.	Fundamentals of recovery	52.4%
2.	Physiology and biochemistry of sports effort	4.8%
3.	Massage - a recovery means	85.7%
4.	Psychotherapeutic means	0%
5.	Dietetic and pharmacologic means	38.1%
6.	Active rest (respiratory gymnastics, stretching)	76.2%
7.	Biomedical control of recovery	42.9%

Figure no. 5. Contribution of disciplines in the program *Methods and means for the effort capacity recovery* to the development of students' competences



Statistical reckonings showed that among the total number of graduates from the education programs provided by UNEFS DPPD in the school year 2010-2011, 37% out of the teachers attended the latest professional refresher course in 2009. (figure no.6) The fact that they are being in the process of accumulating the 90 compulsory professional credit transfers every 5 years explains students' increased interest in their continuing education. It is also interesting to emphasize that students, from all the programs, have a mean of 10 to 11 years experiences in teaching physical education.

Figure no. 6. Year of teachers' latest refresher course in the education programs developed within the project



Discussion and conclusion

Students' attendance of the six disciplines included into each education program gave them the opportunity to exchange experiences both with their teachers and the other colleagues. As for the practical activities, there was clearly a need to highlight the direct applications to physical education lessons. Teachers' interest was greater in those contents offering new alternatives to the means already known by the pupils. We refer here to table tennis, badminton and aerobics. Each discipline could represent the topic for a new program.

This project supports the recommendations formulated by the European bodies to keep the motivation for the teaching career by the acquisition of competences allowing the specialists to develop, beyond the didactic norm, further activities, such as the extracurricular and the sports training ones.

We conclude that the continuing education programs provided by the mentioned project enjoyed an increased interest from the teaching staff in Physical education and sports domain. However, competitive activities scheduled by the end of the week, simultaneously with the education programs, represented a limiting factor for students' participation in all the formative activities, even in the final evaluation.

These results will be completed next year, at the final of the project, and future conclusions will represent the premises to develop new educational offer in adult continuing education.

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THE IMPACT OF PHYSICAL EDUCATION AND SPORTS ON THE SOMATO-FUNCTIONAL AND MOTRIC INDEX OF THE UMF BUCHAREST STUDENTS

TUDOR DORU[1], GRIGORE VASILICA[2], TUDOR MARIA[3]

Abstract

Objectivs: The purpose of this study was to contribute at the investigations upon the Somato-Functional and Motric Profile of the medical students. We also wanted to see if the P.E. lessons in our university, based on learning and practicing different sports, are effective on increasing the fitness level of our students.

Subjects: The research was conduct on 120 subjects, boys and girls, students of „Carol Davila" University of Medicine and Pharmacy in Bucharest, first year, from the Volleyball and Fitness Grupes.

Tests: We tried to accomplish the tasks using simple tests , the kind of tests any P.E. Teacher can conduct in his Gym, without using specialized laboratories. We measured the height, the weight and the heart rate of the subjects, and basing on that dates we calculated the Ruffier Index as an idicator of the Functional Potential (Functional Fitness) . We also used athletic tests to evaluate the Motric Potential of the medical students (endurance, upper –body strenght, lower-body power.)

Conclusions:

1. Percentage of boys (37%) and especially the girls (50%) falling in the grade of "unsatisfactory" at Functional Index revealed in Ruffier Tests the at the initial testing shows a worrying state of facts in the secondary education segment.
2. Both Motric Potential and Functional Potential of the students can be improved after attending physical education and sports classes.
3. Differences between the results of the initial and final test can be summarized as follows:
   - decreases the percentage of subjects rated "unsatisfactory" at Ruffier Index of Functional Fitness (from 49% to 28% of girls, respectively from 37% to 22% of boys).
   - all three aspects of the Motric Potential (lower body power, upper body strength, general endurance) improved at Final Tests compared to the initial levels , but the most significant progress was

[1]University of Medicine and Pharmacy "Carol Davila", Bucharest, ROMANIA
[2]National University of Physical Education and Sport Bucharest, ROMANIA
[3]University of Medicine and Pharmacy "Carol Davila", Bucharest, ROMANIA
Email: tuddoru@yahoo.com
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in general endurance.

4. Knowledge of simple methods for assessing the functional status of the organism, especially at medical students, is an effective way of persuading them to understand the necessity of practicing sports regulary, both in physical education classes and recreational sports activities.

Keywords: Medical Students, Phisical Education and Sports Lessons , Somato-Functional Profile, Bio-Motric Potential

Introduction

Contemporary man lives in a changing society. The transformations of the increasingly accelerated economic and social life are targeted to ease the work and to increase quality of people's life (J. D., Cohen, J., Drury, and J. R., Wright, 1988). Nevertheless "in today's society is shaped as a trend the need for phisical exercise but its absence from the usual program of modern people is obvious" (V., Grigore et. al., 2007). As a result people tend to adopt a sedentary lifestyle followed by a whole suite of morbid conditions: obesity, poor body posture, a weak tone of the Core muscles (J., Eilmore, D., Costill, 2005), increased Body Mass Index and adipose tissue, spinal deformity, stiffness (J., Morrow, A. , Jackson, J., Disch, D. , Mood, 2005), lack of mobility and flexibility, muscular atrophy, disturbance of cardiovascular functions, anxiety, etc. (T., Bompa, 2001) .

In this context, taking account the profile of our university, we considered it necessary to know the somatic, functional and motoric profile of future physicians and see how it can be optimized through the methods which the Physical Education and Sports Department of our University has at its disposal. We refer both to Physical Education lessons (based on practicing different sports, depending on the students choice), and recreational sports activities organized by our Department (I Year Cup, II Year Cup , "Carol Davila" Cup, UMF Championship, etc.).

Premises

We started from the need to develop the database of Physical Education and Sports by providing relevant data regarding the current bio-motoric profile of the Medical Students.

Purpose

The purpose of this study was to outline the somatic and functional profile of the medical students. by means within the reach of physical education teachers (without laboratory tests). We also intended to fiind aut in what extent the physical education course based on practicing diffrent sports manages to increase student`s bio-motoric potential. However, we intend that this study should constitute a starting point for broader and more specialized investigations in this area.

Objectives

The operational objectives of the research were: documentation; choosing the somato functional indicators that will be investigated; establishing the most appropriate means to determine these indicators; establishing the sample of subjects; measurements; data recording; data processing,; formulating conclusions.

Hypothesis:

Regulary attending the physical education course based on practicing different sports has a significant effect for optimizing the somatic and functional index and Motric Potential of the students at UMF.

Research Content:

Subjects and research duration:

The **analyzed sample** included a total of **120 subjects** , 60 boys and 60 girls,students of UMF "Carol Davila" Bucharest, Faculty of Medicine and Dentistry, First Year.

For each faculty, Physical Education was included in the curriculum with one lesson per week with duration of 100 minutes in obligatory regime, with mark , having assigned 4 credits . Groups were formed based on students options . The study was conducted during October 2009 - June 2010. Subjects were tested at the beginning and the end of the academic year. Between tests, students attended the P.E lessons in volleyball and fitness groups, following the specific programs of those sports,and participating in recreational sports activities organized by our Department.

Somatic and functional indices were analysed in order to determine the profile of "Carol Davila" students.
Somatic indices analyzed were**: height** and **weight**
• To determine the height was used a taliometer.
• To determine the weight we used a medical scale with 100 grams acuracy (A., Dragnea, I., Bota, 1999).

Based on these values were determined:
• **Ruffier Index** (M., Cordun, 2009) , fitness assessment using the formula: $\frac{(P1+P2+P3)-\ :00}{10}$ where P1 is the resting heart rate , in sitting position; P2, pulse immediately after the execution of 30 squats (rhythmic metronome 90) and P3 pulse one minute after exercise.

Functional indices investigated: **heart rate**
• pulse was recorded by palpation at the radial artery, performed by each subject (previously trained) (Drăgan, I. , 1994).

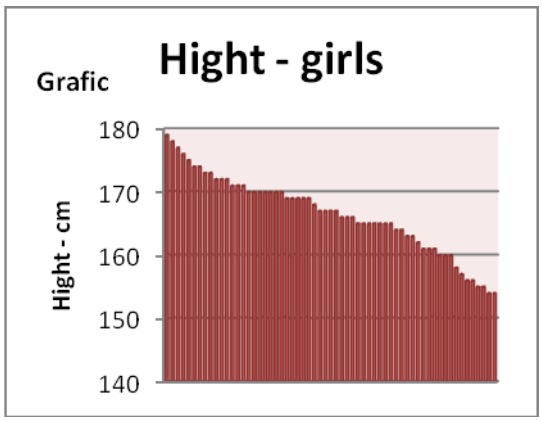
To evaluate the **Motric Potential** we used the following tests (D., Tudor, 2007):
1. **Standing long jump** - to determine **the legs power ;**
2. **Push-ups** - to assess **upper body strength** (for boys - lying on the ground,for girls - with their hands resting on the gymnastics banch or other support 30cm high);
3. **The shuttle** - for **endurance**: launched running on specified distance (interval) (13m - boys 12m - girls) with a minimum time for the scroll (5 sec.) – We recorded the number of complete laps which fall under the specified conditions :

- An audio signal every 5 seconds
- Among the signals the subjects have to scroll the interval
- No one enters the interval before the signal;
- Stop when a performer gives up or does not fall within the time
- The number of crossings is recorded.

State of the somatic indicators

• Height

Girls: the minimum value recorded was 154 cm, maximum 179 cm, and **average 169, 2 cm.**



Boys: the minimum value was 167 cm , maximum 189 cm and the **average 182.9 cm**

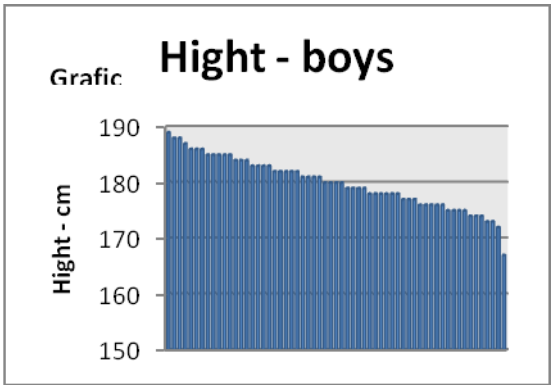
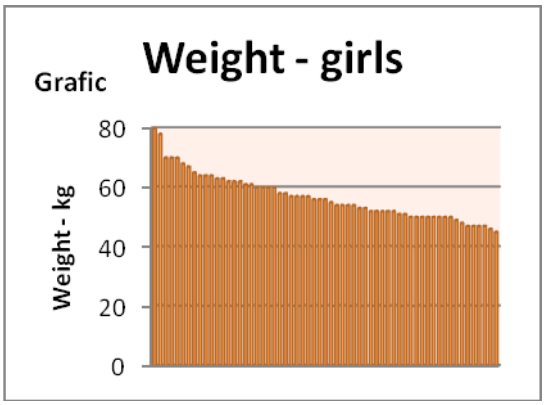


Table 1: The Hight index state

Table 1	Hight (cm)	
Values	Boys	Girls
Min.	167	154
Max.	189	179
Average	182,9	169,2

• Weight

Girls were found with minimum values of the weight of 45 kg, maximum 80 kg and **average value 57,6 kg.**



Boys minimum weight was 70 kg, maximum 90 kg, and the **average 81.3kg**.

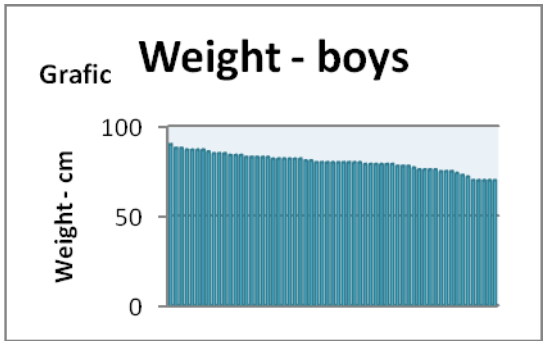


Table 2: Situation of Weight indices

Table 2	Weight (kg)	
Values	Boys	Girls
Min.	70	45
Max.	90	80
Average	81,3	57,6

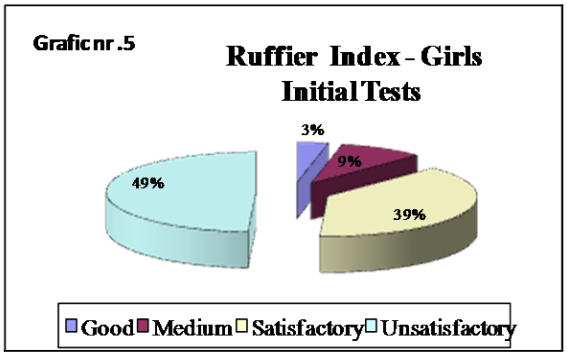
Analysis and interpretation of the Functional Indicators

• Index Ruffier

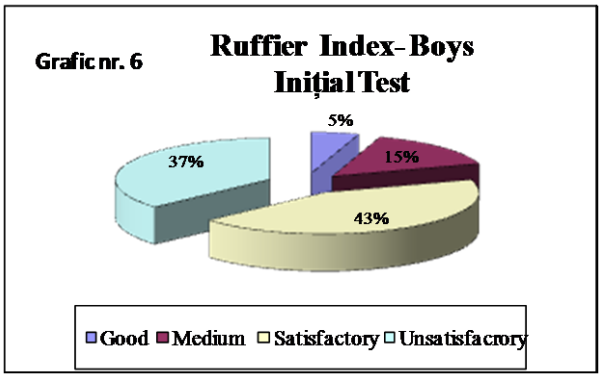
- **Initial Tests**

The Functional Fitness objectified by the Ruffier Index results generally modest at initial testing.

Girls: In initial testing, fitness evaluation 4 girls (3%). rated "good" (Ruffier Index value 0-5) An „average" physical condition (Ruffier index value5-10) occurred in 11 students (9%) and 46 students (39%) were assessed as having a physical condition "satisfactory" (Ruffier index value10-15) Physical condition assessed as "unsatisfactory" had 59 girls (49%) with the Ruffier index values over 15.

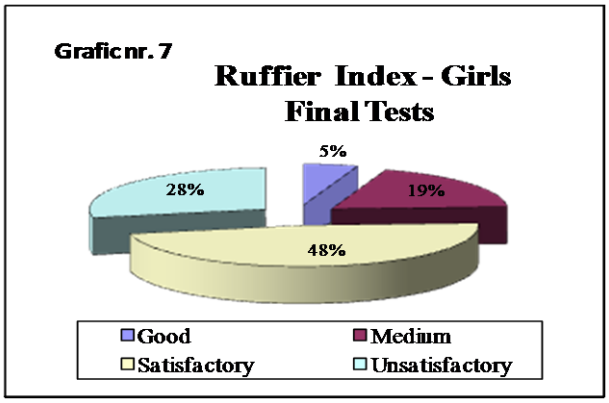


Boys: On initial testing 52 boys (43%) ranked "satisfactory" and 18 (15%) „average",
6 students (5%) ranked „good" and 44 (37%) „ unsatisfactory"
As for female students, for the boys we also note the very high percentage of subjects with poor Functional Fitness.



- **Final Tests**

Girls: The final testing shows that the percentage of female students who received "unsatisfactory" was strongly diminished (from 49% to 28%). We also note the increase in "satisfctory" (39% -48%) and "medium" (9 % -19%). Percentage of girls who ranked "good" increased slightly from 3-5%. The overall rating should be referred to the declining share of "unsatisfactory"(originally 49%!) and rising the proportion of "medium" and "satisfactory. "



Boys: The final testing of students have registered growth of qualifications rates obtained in"good" (7% vs 5% initial testing), "medium" (from 15% to 22%) and "satisfactory " (from 43% to 48%), accompanied by the decrease of the percentage

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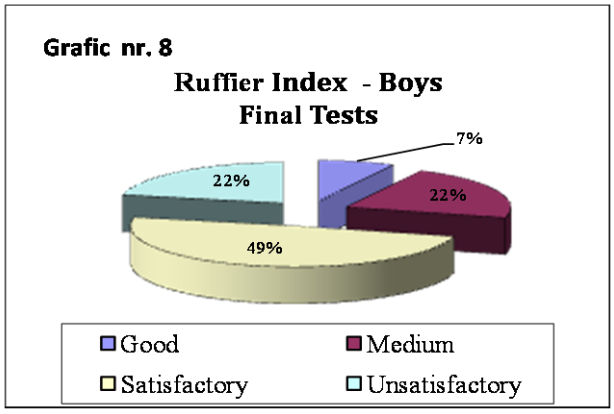
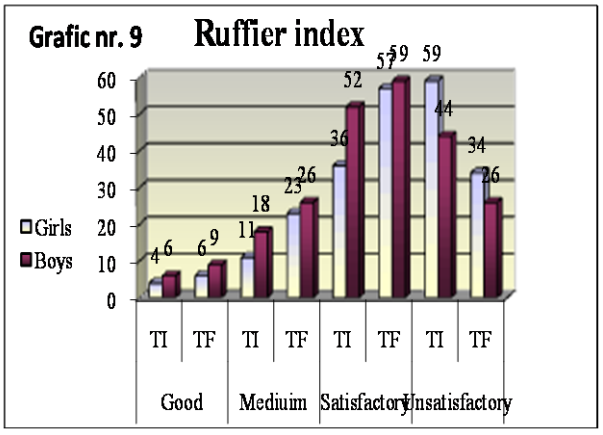
rating "unsatisfactory" - from 37% to 22%. Summing percentages "good", "medium" and "satisfactory" in the two trials we note an increase from 63% to 78%.



Analyzing the graphyc obtained on the whole, boys and girls, we note a distribution in conforme with Gause's curve, shifted to the right, for the satisfactory and unsatisfactory ratings,especially in initial testing. This leads us to assert that during senior high school, students' Functional Fitness is neglected.

Although the final test results are improvin g, overall distribution remains asymmetric.



Analysis and interpretation of the athletic tests

1. Long Jump

Test results for the lower limbs power show a significant increasing trend , the difference between the initial and final testing being 4 cm for both boys and girls.

Tabel 4	Standing Long Jump (m)			
	Comparative statistical indicators			
Values	Initial Tests		Final Tests	
	Boys	Girls	Boys	Girls
Min.	1,70	1,20	1,78	1,23
Max.	2,38	1,80	2,40	1,80
Average	2,09	1,43	2,13	1,47

2. Push-ups

Tabel 5	Push-ups (nr. reps.)			
	Comparative statistical indicators			
Values	Initial Tests		Final Tests	
	Boys	Girls	Boys	Girls
Min.	3	0	8	4
Max.	24	15	27	16
Average	14,60	7,03	17,77	9,03

At the strength test for upper body, there is also a growing trend, the average values of final testing being significantly higher than the initial ones, especially for boys (with the addition of 3 reps) but also for the girls (2 reps more) .

3. Endurance Shuttle

The most significant progres was noted at the endurance test. The number of crossings of the established distance increased on average by 7,2 for boys and 4.73 for girls in the final test compared to the initial one.

Tabel 6	Shuttle (nr. reps.)			
	Comparative statistical indicators			
Values	Initial Tests		Final Tests	
	Boys	Girls	Boys	Girls
Min.	9	10	15	12
Max.	80	45	92	48
Average	32,67	23,37	39,87	28,10

Looking at the overall results achieved in the athletic tests, it can be said that all three aspects of the Motric Potential (lower body power, upper body strength and overall endurance) showed improved results at the final testing. However the most significant progress was found in general endurance.

Conclusions:

1. The **initial tests** showed that **37% of the boys** and **49% of the girls ranked "unsatisfactory"** at the Functional Index revealed in **Ruffier Tests**. This leads us to assert that during senior high school, student's Functional Fitness is neglected.
2. Both **Motric Potential** and **Functional Potential** of the students **can be improved** after attending physical education and sports classes.
3. **Differences** between the results of the **Initial** and **Final Test** can be summarized as follows:
   - decreases the number of subjects rated "unsatisfactory" at Ruffier Index of Functional Fitness (from 49% to 28% of girls , respectively from 37% to 22% of boys).
   - all three aspects of the Motric Potential (lower body power, upper body strength, general endurance) improved at Final Tests compared to the initial levels , but the most significant progress was in general endurance.
4. **Knowledge of simple methods** for assessing the **functional status** of the organism, especially at medical students, is an effective way of persuading them **to understand the necessity of practicing sports** regulary, both in physical education classes and recreational sports activities.

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STUDY ON THE PERCEPTION OF PHYSICAL EDUCATION OF STUDENTS TOWARDS THE UNIVERSITY PHYSICAL EDUCATION TREATED IN TERMS OF ITS EFFECTS ON HEALTH AND SOCIAL INTEGRATION

VAIDA MARIUS[1]

Abstract. Purpose: This study started from the premise that physical education, as well as the other parts of general education, is likely to be improved and that can be achieved by understanding the clear perception of students (those directly involved) towards the phenomenon under investigation. As you know, regular physical activity serves to maintain or improve the structure of various tissues and organs as well as improving various body functions. Also, through the present study we try to determine the perception of youth over the organized movement, and here I refer to physical education in particular, and their awareness regarding the damage that tends to occur based on age and inactivity.

[1]Physical Education and Sport Department, Petroleum and Gas University from Ploiesti, ROMANIA
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Material and methods: In this study 250 students were surveyed, by 50 students (boys and girls) from each faculty (in number of 5) from the Petroleum and Gas University of Ploiesti. The used survey methods were (which was done using a standardized questionnaire) the statistical data processing and graphical method.
Results: The statistical processing of the data reveals that students realize the importance of physical education within the education system, higher values being recorded at the formative nature of the questions on physical education, the importance of social integration, competitive nature, positive personality traits of educating through the educational process instructive physical education, and the most important questions which sought to maintain and improve health by moving in an organized setting. Negative values were found to questions aimed at the systematic and independent ability to practice physical exercises, if practice in an organized manner a sport branch and at the lifestyle.
Conclusions: Following the results we can say that students consider necessary the practice of physical exercises in the physical education classes, the vast majority being not engaged in activities organized that they consider beneficial through the effects they have on the human body. Although the test subjects realize the benefits of organized physical education, the degree of inactivity is high enough in their style of life. Therefore we can say, argued on the statistical results obtained, it is necessary to maintain a regular organized form of physical education, a need which is based on lack of movement of the younger generation outside of existing forms.
Key words: physical education, perception, effects, health, social integration

Introduction

Physical education, along with other types of education (intellectual education, moral, aesthetic and technical training - polytechnic) is a component of general education. These components of education are arranged as a system, between them being various interdependencies and mutual interrelationships. Each system is composed of a variable number of subsystems, and could be transformed, under certain conditions, in systems **(**Gh., Cârstea, 2000) . Physical education plays an important role in the development of the individual being physiological by nature, pedagogical by method, biological by effects and social by the organization and activity(J., Thomas, J., Nelson, 1997).

Physical education as a bilateral process is much more widespread than as an independent activity, and takes place continuously, in time, being demonstrated by the existence of a clear and well defined link between the various forms of physical activity (in which physical education is also included) and the improvement of the quality of life **(**P., Ilut, 2004). Also, physical education being a two-way process consists of two "components", namely, the head of the instructive-educational process (teacher in our case) and subjects (students) **(**M., Epuran, V., Horghidan, 1994).

Physical education through the direct influences held on the harmonious growth and development of subjects and of the role that it plays in motor skills development and learning different skills and specific motor skills, it is a very important component that aims proper training of the younger generation both in terms of both health and in terms of social integration(J., Thomas, J., Nelson, 1996).

Having at the base the assimilation of different specific and nonspecific knowledge, attitudes (being at the base of various social behaviors with the help of which the subject can accomplish various social roles within a group), rules, skills, etc., physical education systematically practiced is an important asset in its support as a compulsory discipline in the educational system today(A., Dragnea, şi colab., 2006).

We can also say that physical education is a very important social process embedded in general education, having a great influence in shaping the personalities of different individuals subjected to this complex process **(**L., Mihailescu, 2006).

This study started from the premise that physical education, as well as the other parts of general education is likely to be improved and that can be achieved by the clear understanding of the perception of students (those directly involved) against the phenomenon under investigation.

As you know, regular physical activity serves to maintain or improve the structure of various tissues and organs as well as improving various body functions **(**M., Epuran, M., Marolicaru, 2003). Also, by the present study we try to determine the perception of youth over the organized movement, and here I refer to physical education in particular, and their awareness regarding the damage that tends to occur based on age and inactivity.

Research methods

Among the research methods and techniques used I mention: bibliographic study method, the investigation (which was done using a standardized questionnaire), statistical data processing and graphical method.

This study was conducted at Petroleum-Gas University of Ploiesti during the academic year 2009-2010, and was conducted on a sample of 250 students in the years I and II.

In this study, the students surveyed (250) were randomly chosen being 50 students (boys and girls) from each faculty (five in number: Letters and Sciences, Economics, Mechanical and Electrical Engineering, Petroleum Engineering and Gas, Petroleum and Petrochemical Technology) of the Petroleum and Gas University of Ploiesti.

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The main research method used was a questionnaire with choosing the answer with a choice of three possible answers (yes, no, I do not know) at the vast majority of questions (items), only three items having different or multiple choice answer, and then was switched to analysis and interpretation of data, the answers being able to help us understand the students' perception of the phenomenon under investigation.

The questionnaire had a total of 14 items (questions), was anonymous and was conducted during the physical education modules within UPG Ploiesti. The questions in the questionnaire are presented below correlate with the results, their representation is both under table form and graphically.

Results

The questionnaire results are presented (both graphically and in table form) and interpreted below.

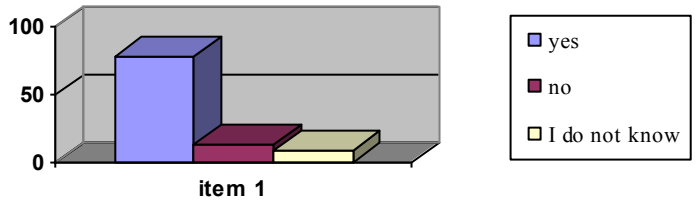
The first question (item) in the survey was: Do you think physical education has a formative nature in terms of subject's preparation for life?

On this question 195 of the subjects (78%) answered "yes", 33 subjects (13%) answered "no" and 22 students (9%) answered "I do not know."

Table 1. Values resulted from the processing of item 1

Item	Yes		No		I do not know		Total	
1.	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*
	195	78	33	13	22	9	250	100

Graphic 1. The percentage values of the data item 1



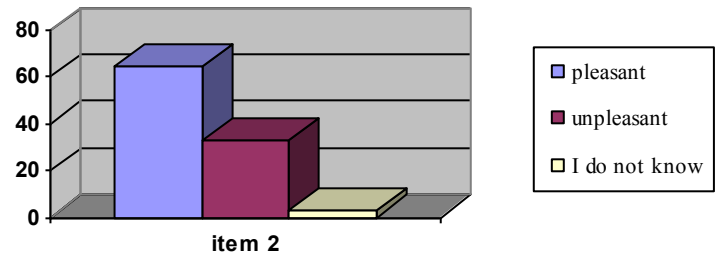
From the results obtained and processed is clear that physical education and sport is considered by most (78%) as having a forming feature in terms of subjects' preparation for life, only 22% of respondents answered "no" or "I do not know".

In connection with item 2, which concerned the question: What do you think the work you are doing during the physical education class?", we can say that the results are slightly different from the first item, only 64% of respondents considering it pleasant, 33% bad and 3% answered "do not know. "

Table 2. Values resulted from the processing of item 2

Item	Pleasant		Unpleasant		I do not know		Total	
2.	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*
	160	64	83	33	7	3	250	100

Graphic 2. The percentage values of the data item 2

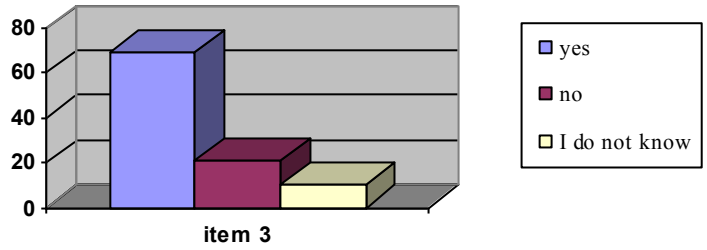


Item 3 corresponds to the question: Do you think physical education is an attractive form of health maintenance? The processed data show that most respondents (69%) think physical education as an attractive form of health maintenance, the remaining 31% answered "no" or "I do not know."

Table 3. Values resulted from the processing of item 3

Item	Yes		No		I do not know		Total	
3.	*Nr.*	%	*Nr.*	%	*Nr.*	%	*Nr.*	%
	173	69	52	21	25	10	250	100

Graphic 3. The percentage values of the data item 3

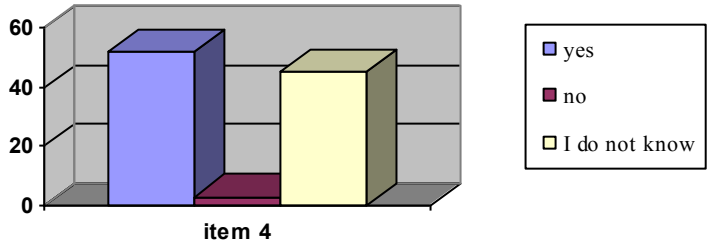


At the question (item 4) "Consider that the competitive nature of physical education has an important role in social integration of the individual?" 52% of students responded yes, 3% negative and 45% responded "I do not know", which shows that nearly half of the subjects in question do not realize the important role of the competitive nature of physical education in social integration by creating certain attitudes, personality traits, etc. that can promote integration in certain social groups and even ascending on the social ladder.

Table 4. Values resulted from the processing of item 4

Item	Yes		No		I do not know		Total	
4.	*Nr.*	%	*Nr.*	%	*Nr.*	%	*Nr.*	%
	130	52	7	3	113	45	250	100

Graphic 4. The percentage values of the data item 4

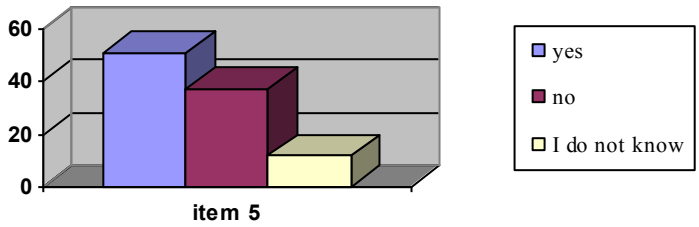


Item 5 was treated from the question: Do you appreciate that through the specific means of physical education the education of positive personality traits is realized? In this case the results are very balanced the relationship between the positive and negative were 51% versus 49% in favor of the first ones.

Table 5. Values resulted from the processing of item 5

Item	Yes		No		I do not know		Total	
5.	*Nr.*	%	*Nr.*	%	*Nr.*	%	*Nr.*	%
	128	51	92	37	30	12	250	100

Graphic 5. The percentage values of the data item 5

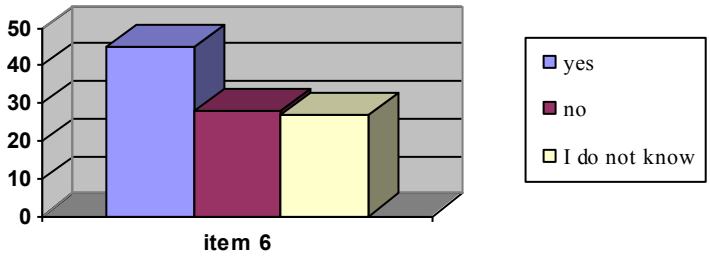


Referring to whether the subjects believe that by maintaining physical education as a compulsory subject in years I and II is done the maintenance of an adequate health status and the increase of body resistance to environmental factors (item 6), 45% of them responded positively, 28% had a negative answer and 27% were undecided.

Table 6. Values resulted from the processing of item 6

Item	Yes		No		I do not know		Total	
	Nr.	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*
6.	113	45	70	28	67	27	250	100

Graphic 6. The percentage values of the data item 6

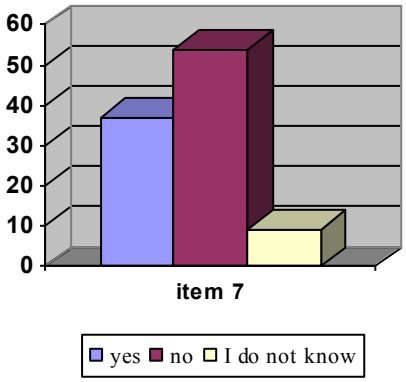


Also, connected to the systematic and independent practice capacity of physical exercises (item 7), 37% of respondents said they have formed this capacity, 54% of them do not have this habit and 9% answered "I do not know" while at the question if in their leisure time they practice in an organized manner a sport branch (item 8) only 18% of respondents said yes, 79% gave a negative answer and 3% answered "I do not know."

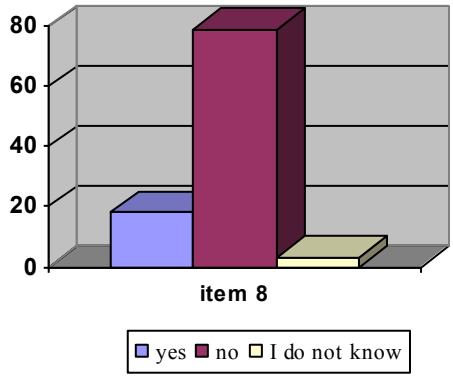
Table 7. Values resulted from the processing of items 7 and 8

Item	Yes		No		I do not know		Total	
	Nr.	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*
7.	92	37	135	54	23	9	250	100
8.	45	18	198	79	7	3	250	100

Graphic 7. The percentage values of the data item 7



Graphic 8. The percentage values of the data item 8

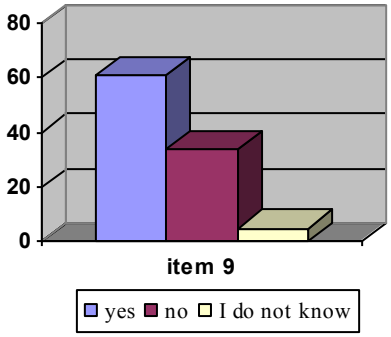


Item 9 corresponds to the question "Do you think physical education positively influence relationships with others persons?". Responses from the researched subjects are positive at a rate of 61%, 34% negative and 5% undecided. Also, at the question "Do you think through the specific activity regular by physical education it is developed the action behaviors during of a community?" which corresponds to item 10, most students responded positively (58%), only 12% had negative responses and about one third (30%) answered "I do not know."

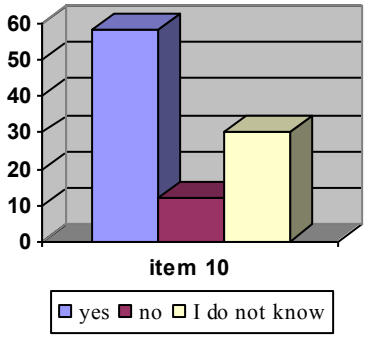
Table 8. Values resulted from the processing of items 9 and 10

Item	Yes		No		I do not know		Total	
	Nr.	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*
9.	153	61	85	34	12	5	250	100
10.	145	58	30	12	75	30	250	100

Graphic 9. The percentage values of the data item 9



Graphic 10. The percentage values of the data item 10

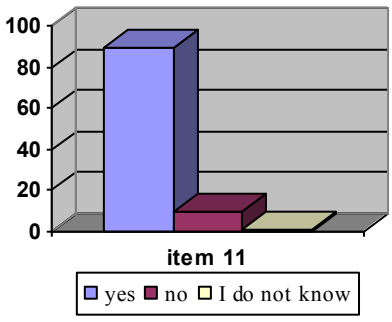


When asked if the lesson of physical education and sport should be based on a branch of sport, or more (item 11) surveyed subjects responded with a positive percentage of 89% positively, 10% negative and only 1% were identified with answers of "I do not know". Referring to item 12, which corresponds to the question "Do you think there is a connection between the supply of various forms of physical activity and the improvement of the quality of life?" responses were positive in 72%, 22% negative and "not know" only 6%. This can be seen in Table 9 and graphs 11 and 12.

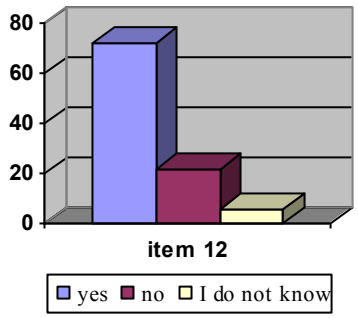
Table 9. Values resulted from the processing of items 11 and 12

Item	Yes		No		I do not know		Total	
	Nr.	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*
11.	223	89	25	10	2	1	250	100
12.	180	72	55	22	15	6	250	100

Graphic 11. The percentage values of the data item 11



Graphic 12. The percentage values of the data item 12

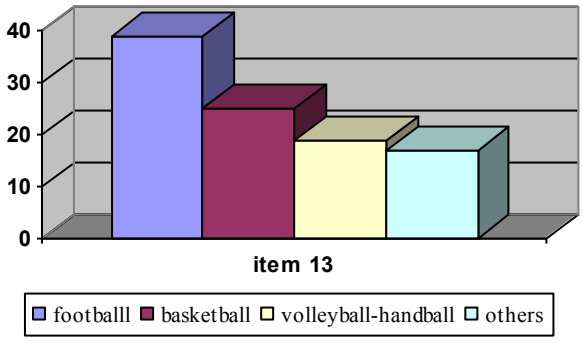


Referring to what sports branches students would like to practice during the physical education and sport classes (item 13) subjects responded that football - 39%, basketball - 25%, handball - volleyball - 19% and others (aerobics, fitness , swimming, etc.) - 17%

Table 10. Values resulted from the processing of item 13

Item	Football		Basketball		Volleyball - Handball		Others		Total	
13.	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*
	98	39	62	25	47	19	43	17	250	100

Graphic 13. The percentage values of the data item 13

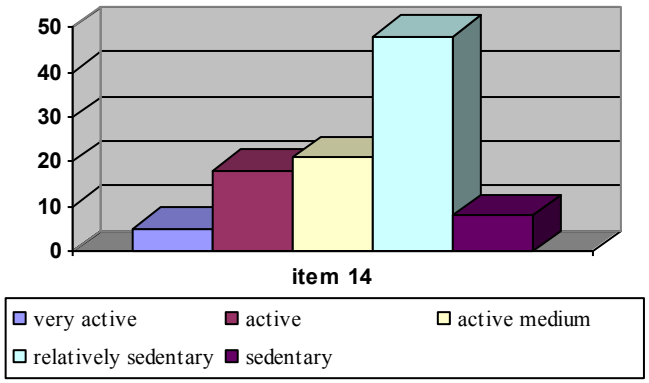


The last item covered by this study (item 14) was related to the lifestyle of the subjects. The results obtained after statistical processing shows that only 5% are very active, 18% are active, 21% intermediate, 48% and 8% are relatively sedentary.

Table 11. Values resulted from the processing of item 14

Item	Very active		Active		Active medium		Relatively sedentary		Sedentary		Total	
14.	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*	*Nr.*	*%*
	13	5	45	18	52	21	120	48	20	8	250	100

Graphic 14. The percentage values of the data item 14



From previous data, presented both in graphical and table form, we can say that physical education has a beneficial role in developing and maintaining good health at post-puberty age, this study being still an argument about the lack of movement of the younger generation.

Conclusions

Avand la baza rezultatele obtinute pe baza cercetarii prezentate anterior putem trage urmatoarele concluzii finale:

1. Although researched subjects believe needed the physical exercise practice during the physical education class, which they consider beneficial by the effects they have on the human body, the vast majority are not engaged in organized sporting activities and do not have the capacity to practice systematic and independent physical exercises.

2. The formative nature of physical education is well defined in the perception of students regarding the subjects' preparation for life, this activity being considered pleasant and an attractive form for the maintenance of health, influencing positive relationships with other individuals.

3. Although the test subjects realize the benefits of organized physical education, the degree of inactivity is high enough in their style of life. Therefore we can say, argued the statistical results obtained, it is necessary to maintain a regular organized forms of physical education, a need which is based on the lack of movement of the younger generation outside of existing forms, the subjects investigated becoming aware of the link between the provision of various forms of physical activity and improvement of quality of life.

4. The important role of the competitive nature of physical education in the social integration of the individual is considered important only by a slim majority of the subjects investigated, nearly half of the subjects in question do not realize the

important role of the competitive nature of physical education in social integration by creating attitudes, personality traits, etc. that can facilitate the integration of certain social groups and even in their ascension on the social ladder.

5. The same tendency of fragile balance (with a majority of 51%) appeared from the item concerning the education of positive personality traits through specific means of physical education.

6. Physical education class must be based on one or more branches of sport, sports games having a very high proportion in students' opinions.

7. Maintaining an adequate health status and increase the body's resistance to environmental factors by maintaining physical education as a compulsory subject in the years I and II is not aware of the subjects investigated, 55% of them responded negatively or were undecided.

8. The high degree of inactivity, lack of movement in the spare time, a total lack of understanding at a relatively high number of the subjects of the beneficial nature of physical education and sports on all its plans (physical, personality, social, etc.) can be a starting point in adapting the instructive - educational process of physical education and sport, this being a direction of applied research, the results of this study may be premises for further research.

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GENDER AND AGE DIFFERENCES IN THE ACHIEVEMENTS AND MOTIVATION FOR ENGAGEMENT IN PHYSICAL EDUCATION IN ELEMENTARY SCHOOL

VIŠNJIĆ DRAGOLJUB[1], ILIĆ JELENA[2], MARTINOVIĆ DRAGAN[3], MARKOVIĆ MIROSLAV[4]

Abstract

Purpose. Since the aim of PE is to help children understand, develop and adopt patterns of healthy lifestyle, it is necessary to investigate and boost their motivation for adoption of this kind of behaviour. In certain cases PE is the only possibility offered to school children to master basic motor abilities and to actively participate in sports. The best way to attain this aim is arising children's motivation for maximal involvement in PE classes. Gender and age are very important factors that can facilitate or aggravate PE classes.

Methods. Our sample consisted of 706 students elementary school from 4th to 7th grade, of both sexes. We were investigated the relationships between student achievement and motivation for engaging in PE. Independent variables were: grade, gender, overall success of the previous grade, grade of physical education, students' opinion on the sufficiency of knowledge acquired in PE classes and engagement of students in sports and dependent one was the score on the scale for measuring motivation for active involvement in PE classes. The data were analyzed by ANOVA, multiple regression analysis and χ^2 test

Results. Girls, regardless of age showed lower levels of motivation. Also, fifth-grade students of both sex showed the highest level of motivation. School achievements were not significant predictors of the level of motivation for engagement at PE but grade, gender, engagement of students in sports and opinion about of sufficiency of knowledge acquired in physical education classes did.

Conclusions. Raising pupils' awareness of the advantages for health, regular growth and development, have their engagement in physical activities, at least in the most basic form, such as active participation in physical education classes, would be important for those students who are not involved to any other physical activity out of school, especially for girls in seventh grade who are not involved in physical activity apart from PE classses.

Key words: motivation, achievement, PE, age, gender.

[1]Faculty of Sport and Physical Education, University of Belgrade, Belgrade, SERBIA
[2]Republic Institute of Sport, Belgrade, SERBIA
[3]Teacher Training Faculty, University of Belgrade, Belgrade, SERBIA
[4]Faculty of Sport and Physical Education, University of Belgrade, Belgrade, SERBIA
Email: jelena.jovanovic@fsfv.bg.ac.rs
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Introduction

Students' educational achievements are the indexes of efficiency of the instruction process. Students' achievements can result from the efficiency of the overall educational process at certain level of education, but can also be observed partially as a result of educational process of a particular subject. In physical education, as well as in other school subjects, it is essential to monitor educational outcomes. Students' achievements in physical education are an entity consisting of more components, each one with particular importance and weight. It is common to monitor and evaluate sports-technical knowledge (skills-motor skills), students' motor abilities, as well as components such as: general and special knowledge from the field of physical education of students; motivation for participation in games and sports activities (exercise – training physical activities); relation of students towards physical activities and acquisition of habits to be involved in exercises. (Višnjić, 2004)

All achievement indexes in PE instruction are monitored and expressed among the others by the grade in PE. The grade in PE, although subjective to a great extent, is one of the students' achievement and index of instruction result. It can be observed as an integral index of instruction achievement index (Martinović, 2003).

Some of factors that may have influence on students' grade are PE curriculum, students' gender, sports' involvement, level and quality of motivation, etc. Educational psychologists and curricular researchers seem to agree that the curriculum has a powerful influence on student motivation. Newmann et al. (1996) argued that the curriculum forms a context in which students spend most of their daily lives in school, and suggested that this context also provides a reference frame for students to define and determine the level of success in education. The curriculum, therefore, can be viewed as the mechanism that energizes students as well as influences the process of internal energizing. Burke (1995) observed that content that stimulates interest, curiosity, and self-fulfillment serves as an excellent motivator. Thus, research on student motivation can be meaningful only when the motivation is studied within the realm of the curriculum for whose goals students are expected to aspire and they are motivated to achieve in the learning process.

Some authors emphasise importance of student–teacher interaction. Drudy & Uí Chatháin (2002) hypothesized that student–teacher interaction patterns can be affected by four key variables: the gender of the teacher, the class size, the gender-typed subject being taught (i.e. feminine-traditional vs masculine traditional) and the gender composition of the class. All these factors are also relevant for quality of teaching process.

Learning in physical education individuals often accomplish by mastering a physical movement through physical training. During this specific learning process, motivation serves as a primary force that leads students to achieve the learning goal (Solmon, 2003). Moreno Murcia et al. (2009) thinks that PE creates exceptionally favourable conditions for creation and development of positive attitudes towards physical activity in general, and especially towards sport at critical period such as adolescence. They found that both extrinsic and intrinsic motivation are positively correlated with the attitudes on importance of PE classes and knowledge acquired in these classes.

Research investigating the motivation of children and youth in physical activity has shown that the beliefs people hold about their ability could be one of the major influencing factors (Wang & Biddle, 2001). This might be an explanation for gender differences: girls may not like sport or exercise because they have a pre-existing belief that they are not 'cut out' to be sporty people and they spent less time participating in physical activity. Also of importance was the support found for the hypothesized gender differences, whereby the boys perceived physical education to be more enjoyable than the girls.

Because individual interest in physical activity is associated strongly with student self-identity, especially gender in contexts in which engagement in physical activity occurred, there is a need to understand the impact of gender on interest to enhance the motivation effects. But, also, in both academic and physical activity settings, some researchers have found significant declines in children's competence beliefs and motivation to learn as they become older (Eccles et al., 1998; Xiang et al., 2003). This is particularly important because of long-term effects of PE at health of children. Sallis & McKenzie (1991) thinks that the most important role of modern PE instruction is actually to prepare children for adoption of healthy and active way of life. They think that is significant for adoption of intrinsic motivation to exercise which further results in active involvement in some sorts of physical activity throughout lifespan.

So, the subject of this paper was investigation of differences between students od different age and gender in PE achievement. The aim of the paper was to deteremine if there were differences between in PE achievement (expressed by PE marks, general success from the previous grades, opinion of self-sufficiency of knowledge acquired within PE classes and extracurricular sports involvement and students' motivation for engagement in PE classes) according to pupil's gender and age.

Hypotheses:

- Motivation level for active participation in PE classes shall be greater in male than in female students
- Motivation level for active participation in PE classes shall be greater in younger students
- Male students will have higher PE grade than female
- Female students will have better general success at the end of the previous grade than males
- Younger students will have higher PE grade than older
- Younger students will have better general success at the end of the previous grade than older
- Male students will be more sports involved than females
- Younger students will will be more sports involved than older.

Method

Subjects

The sample included 706 pupils (401 males and 305 females) of two elementary schools from the downtown Belgrade, with standard conditions for realization of PE syllabus. It consisted of 154 pupils of 4th grade – age 11, 121 pupils of 5th grade – age 12, 184 pupils of 6th grade – age 13, 247 pupils of 7th grade – age 14.

Procedure

The data were collected in the classroom environment and the research was anonymous.

Variables

Independent variables:

- Age
- PE grade observed through five categories (insufficient, sufficient, good, very good and excellent)
- Students' general success from the previous grade classified in five categories (insufficient, sufficient, good, very good and excellent),
- Students' opinion on sufficiency of knowledge acquired through PE instruction expressed by the following categories – sufficient for some students, sufficient for the majority of students and sufficient for all students.
- Sports involvement – actively, recreationally and not involved at all.

The control research variable was students' gender: male and female.

The dependent variable was the result (score) on the motivation scale obtained by replies from the questionnaire measuring students involvement in PE.

Instruments

The research instrument was the questionnaire consisting of:

1. Motivation scale for measurement of involvement in PE,
2. Questions related to the students' achievements (general success from the previous grade, PE grade and the question referring to involvement in sport).

The Motivation scale for measurement of involvement in PE resulted from a revised MSP instrument used for Doctoral thesis of Barjaktarević (2001). The original scale originates from the instrument of Sports achievement motive of (MSP) Lazarević and Havelka (the instrument was created in 1976, and the results were published in 1981 in Serbian), from which a subscale of achievement motives was taken (the instrument also contains subscales for measurement of positive and negative competitive anxiety). The Motivation scale for measurement of involvement in PE consists of 29 items. Some of them were taken from the subscale of Sports achievement motives (form MSP instrument). Certain assertions were taken from the General achievement motives (MOP), created by Lazarević and Havelka (1981, in Serbian). One assertion was added by the revision author Barjaktarević (2001). Scoring was changed with regard to the original scale. Scoring is based on a 5-level Likert scale (1 = never to 5 = always). The possible minimum score on the scale is 29 and the maximum 145 points. The internal consistency of the scale, measured by Cronbach's α is 0,84 ($F = 165{,}1004$, $df = 28$, $p < .000$).

Statistical analysis

The data were elaborated in SPSS program, using the χ^2 test, ANOVA and multiple regression analysis.

Results

In the examination of the relation between gender and general success from the previous grade, there was statistically significant difference ($\chi^2 = 21{,}135$; $df = 4$; $p < .000$). Girls had better general success from the previous grade than boys.

Table 1: The relation between gender and general success from the previous grade

general success from the previous grade	male	female	Σ
good	30	8	38
very good	125	64	189
excellent	246	233	479
Σ	401	305	706

In the examination of the relation between gender and the PE grade, there was no statistically significant difference ($\chi^2 = 2{,}133$; $df = 3$; $p < .545$). In the examination of the relation between gender and students' opinion on sufficiency of knowledge acquired through PE instruction, there was no statistically significant difference ($\chi^2 = 2{,}099$; $df = 3$; $p < .552$). In the examination of the relation between gender and sports involvement, there was statistically significant difference ($\chi^2 = 38{,}513$; df =

4; p ‹ .000). Boys are more invloved in sports whether actively or recreationally than girls who were more often not involved at sports at all.

Table 2: The relation between gender and sports involvement

sports involvement	male	female	Σ
not involved at all	55	93	148
recreationally	95	82	177
actively	251	130	381
Σ	401	305	706

In the examination of the relation between age and general success from the previous grade, there was statistically significant difference (χ^2 = 75,898; df = 12; p ‹ .000). Younger pupils indeed had better general success from the previous grade than older ones.

Table 3: The relation between age and general success from the previous grade

general success	Age 11	Age 12	Age 13	Age 14	Σ
good	1	4	5	28	38
very good	19	19	63	88	189
excellent	134	98	116	131	479
Σ	154	121	184	247	706

In the examination of the relation between age and the PE grade, there was no statistically significant difference (χ^2 = 16,041; df = 9; p ‹ .066). In the examination of the relation between age and students' opinion on sufficiency of knowledge acquired through PE instruction, there was statistically significant difference (χ^2 = 51,271; df = 9; p ‹ .000). Younger pupils thought that knowledge was sufficient for all students and older ones more often thought that knowledge acquired through PE instruction was sufficient for some students or for the majority of students. In the examination of the relation between age and sports involvement, there was no statistically significant difference (χ^2 = 20,744; df = 12; p ‹ .054).

Table 4: The relation between age and students' opinion on sufficiency of knowledge acquired through PE instructions

students' opinion on sufficiency of knowledge acquired through PE instructions	Age 11	Age 12	Age 13	Age 14	Σ
sufficient for all students	79	46	54	47	225
sufficient for the majority of students	50	49	80	116	295
sufficient for some students	26	26	50	84	186
Σ	154	121	184	247	706

It has been shown that higher score on the Motivation scale was achieved by males 12-years-old (M = 106,74; SD = 19,24) and lowes score was achieved by females 13-years-old (M = 92,02; SD = 15,28). There were statistically significant differences according to gender and age (t = 7,927, df = 7, p ‹ .000). ANOVA results showed that male studets permanently had higher scores on motivation scale, no matter on age, and post hoc comparisson by Scheffe test showed that pupils of 14-years-old, both gender, had had statistically significant lower scores at motivation scale.

Table 5: The results of pupils at Motivation scale for measurement of involvement in PE according to their age and gender

Age	gender	M	SD	N
11	male	104,42	14,37	92
	female	99,48	15,50	62
	Σ	102,44	14,98	154
12	male	106,74	19,24	50
	female	100,07	16,77	71
	Σ	102,83	18,05	121
13	male	104,02	15,48	97
	female	94,80	14,02	87
	Σ	99,66	15,47	184
14	male	98,27	16,23	162
	female	92,02	15,28	85
	Σ	96,12	16,16	247
Σ	male	102,13	16,33	401
	female	96,21	15,62	305
	Σ	99,57	16,28	706

The data were analyzed by multiple regression analysis in order to establish whether it is possible to predict the level of their motivation for active participation in PE classes based on age, gender, PE grade, general success in previous grade, students' opinion on quantity of knowledge about PE and involvement in sport. In data processing we decided to use stepwise method, since not all predictors proved to be statistically significant. The coefficient of multiple correlation, obtained by this method with all three predictors calculated was R = .358, F = 17.146, df = 6, p ‹ ,000 and coefficient of multiple determination was R^2 = ,128.

Table 6: Results of multiple regression analysis

Predictors	Unstand. Coeff. B	Std. Error	t	Sig.	Partial Cor.
(Constant)	98,275	8,442	11,641	,000	
age	-1,949	,544	-3,581	,000	-,134
gender	-4,879	1,211	-4,027	,000	-,151
general success from the previous grade	-,855	1,044	-,819	,413	-,031
PE grade	2,809	1,574	1,785	,075	,067
students' opinion on sufficiency of knowledge acquired through PE	-2,942	,787	-3,737	,000	-,140

instruction					
sports involvement	4,096	,735	5,572	,000	,206

- Age, gender, students' opinion on sufficiency of knowledge acquired through PE instruction and sports involvement proved to be significant predictors of the level of motivation for active participation in PE classes, based on the coefficient of partial correlation.Younger boys, who are not involved at sport at all and thinks that knowledge acquired through PE instruction is sufficient for all students had the higher scores at Motivation scale for measurement of involvement in PE.

Discussion and conclusion

If the real aim of PE instruction is to help children understand, develop and adopt patterns of healthy lifestyle, it is necessary to investigate and boost their motivation for adoption of this kind of behaviour and the best way to attain this aim is their motivation for maximal involvement in PE classes. This is not an easy task, since, many factors can interfere.

Gender is a very important factor that can facilitate or aggravate PE classes. Williams (1988) established that girls, contrary to boys, do not like neither the competing atmosphere in the class, or the classes dedicated to team sports. Also, Clifton & Gill (1994) reported that because of social influences, male and female students can develop differentiated individual interest in physical activities. At an early age, boys begin to show preferences for team sports, whereas girls begin to favor rhythmic activities (Lee et al., 1999).

Chepyator-Thomson & Ennis (1997) established that gender-related stereotypes for sports activities are manifested in PE classes as well. Namely, it has been shown that males avoid aerobic classes and high-school female students avoid weight lifting. In the mixed softball game males shouted abuse and critics at females and passed the ball less frequently to them then to their fellow male players in the mixed game of football. Thus, research by Adler et al. (1992) and Thorne (1993) suggests that girls may perceive that it is socially unacceptable to be strong, physical and athletically talented as this is the very definition of a popular boy.

The relationship for girls and femininity to PE is complex, partly because the agenda is at least partially set by the boys (Paechter, 2001) and part of the fear revolved around how they looked to others, particularly to the opposite sex. In the examination of the relation between gender and sports involvement at this sample, there was statistically significant difference.

Boys are more invloved in sports whether actively or recreationally than girls who were more often not involved at sports at all. This result emphasise all over the world detected tendency that girls generaly are less involved in sport activities, of all levels.

Koka & Hein (2003) think that the influence of PE teacher must not be neglected and that PE teacher can be motivator, i.e., role model for his students. Additionally, Koka & Hein (2003) think that a teacher by his/her feedback can contribute to boosting of motivation in his students and desire to achieve good results and to maximally get involved in classes, and one of the basic forms of both colaboration and feedback of students about his/her activities in the school system is actually the grade.

Positive grade can be an indicator of child's successfulness, effort and interests as well as an important motivator for further involvement in physical activity, since it affects child's experience of his/her own competence.

They established that there is high correlation between feedback providing and interest for involvement in PE classes. This research didn't confirmed these authors assumptions since PE grade didn't proved to be important predictor of of the level of motivation for active participation in PE classes, neither general success from the previous grade.

This is consistent with opinion of Nicholls (1989) that as children progressed through school, teachers' assessments were less likely to reflect effort or improvement and more likely to reflect class rank on formally evaluated tests or assignments.

But, there are also gender differences at school achievements. In the examination of the relation between gender and general success from the previous grade, there was statistically significant difference.

Girls had better general success from the previous grade than boys. Also, in the examination of the relation between age and general success from the previous grade, there was statistically significant difference.

Younger pupils indeed had had better general success from the previous grade than older ones.

Reason for this might be more complex patterns of education and enlargement number of school subjects at elder age. According to this, in the examination of the relation between age and students' opinion on sufficiency of knowledge acquired through PE instruction, there was statistically significant difference.

Younger pupils thought that knowledge was sufficient for all students and older ones more often thought that knowledge acquired through PE instruction was sufficient for some students or for

the majority of students. PE classes at elder age are more complex.

Especially reason for the result might be sought in specificities elementary school system in Serbia becouse since the 5th grade classes of PE leads physical education professor instead of a teacher.

This also might be an explanation for result that male studets permanently had higher scores on motivation scale, no matter on age, and post hoc comparisson by Scheffe test showed that pupils of 14-years-old, both gender, had had statistically significant lower scores at motivation scale. Van Wersch et al. (1992) had also shown that as children grow older their interest and participation in physical education (PE) decreases.

This research showed that 5th grade male pupils had the highest motivation. The explanation should be sought in a greater desire of males to compete.

Also, at this age increases the number subjects in school and the numbers of commitments for children so that they have less opportunity to engage in PA outside school. The most probable explication for consistent gender differences in level of motivation for active involvement in PE classes is that in Serbia, in PE classes, the most frequent sports activities are sports games (basketball, soccer, handball and volleyball).

Age, gender, students' opinion on sufficiency of knowledge acquired through PE instruction and sports involvement proved to be significant predictors of the level of motivation for active participation in PE classes, based on the coefficient of partial correlation. School achievements didn't approve to be significant factors fom active involvement in PE classes.

Commensurate with such findings, from aspect of school curriculum, there is a resurgent researchers interest in understanding the motivational processes underlying behavior and psychological well-being in school physical education classes.

PE classes play a more central role in increasing physical activity levels among young people, as these classes contain nearly all members of an age cohort.

As the physical ability, interest levels, and the effortful investment of students within PE classes can be quite discrepant, understanding the motivational issues undergirding participation in this setting is particularly interesting to researchers and practitioners alike.

Finally, it can be sum up that initial hypotheses have been confirmed, that the level of motivation for active participation in PE classes is higher in male than in female students. Younger boys, who are not involved at sport at all and thinks that knowledge acquired through PE instruction is sufficient for all students had the higher scores at Motivation scale for measurement of involvement in PE.

Therefore, it is very important to raise awareness of the advantages for health, regular growth and development of children, provided by involvement in physical activity, at least in the most elementary form, such as active participation in PE classes among those elder girls who are not involved in any other extracurricular physical activity.

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❖ KINETOTHERAPY

EYE-HAND COORDINATION IN SECKEL SYNDROME

BIANCALANA VINCENZO[1]

Abstract
The article reports a motor experience conducted in a female individual aged 28, affected by Seckel Syndrome, and aimed at improving eye-hand coordination.
The scientific literature reports that, today the Seckel Syndrome is only afflicting about a hundred of people (at least, this is the number of those currently notified) therefore, it is appropriate to define it as a *rare* syndrome.
The work was validated in and out, through the administration of the "MO.V.I.T." test, which stands for "Movement Evaluation Transfer Intervention" and went on for six month.
Key words:eye-hand coordination, children

Introduction

The Seckel Syndrome is described as a rare syndrome, characterized by physical deformities of primordial dwarfism. Meaning that, intrauterine growth retardation of the fetus, is already highlighted at the earliest stages after conception.

It is also defined as heterogeneous, as each patient so far diagnosed, does not always show all the characteristics that are listed in the description of the syndrome itself. In fact, of the hundred of cases reported since 1960 up until today, less than one third, seems to match the original criterions established by Seckel. This is not due to diagnostic inaccuracy, but to descriptive incompleteness, which is due to the lack of adequate diagnostic instruments and medical history data.

Having said that, it remains unclear which are the real causes of the syndrome, even though, at the moment, all etiological studies agree that it arises from a malformation on a genetic level, on chromosome 3 and 18. In fact, the three most known genes responsible for the syndrome, appear to be SCKL1, 2 and 3, and are actually located on chromosome 3, 18 and 14. (M.O. Kilink et al., 2003)

The only sure thing, is that we are dealing with a disease that is passed on according to an autosomal recessive inheritance, that is, due to a defective gene present on an autosome.

In about 60 cases reported by the scientific literature, it was found that, in some of them, the patients were children of consanguineous parents (first cousins, in most cases). Whereas in other cases, there was evidence of gestational diabetes developed by the mother during pregnancy.

The main characteristics of this syndrome are: microcephaly (which shows a circumference of the head that corresponds to that of a 1 or 2 years old child), severe mental retardation (with an average IQ around values ranging from 15 to 25 and that, in any case, never exceed 50), psychomotor retardation, lumbar-spine scoliosis, hirsutism, hip dysplasia, proportionate dwarfism (adult height between 100 and 138 centimetres) and clinodactyly of the fingers.

Generally, the individuals who are affected by the Seckel Syndrome are friendly and calm. They show interest in the surrounding environment, and are also attentive to cleanliness and personal hygiene.

The case study

D.L. was born in 1981, she is 129 centimetres tall and weighs 32 kgs. Her mother did not have particular problems during pregnancy. D.L. was born on the 37th week of pregnancy (one week after prematurity), but a defect of the intrauterine growth, had already been detected by antenatal screening, suspecting a prenatal infection.

Soon after her birth, she was hospitalized due to her low body weight of 2.3 kgs and from the very first day, she showed little reactivity to stimuli and reduced spontaneous mobility, together with general hypertonia, especially of the lower limbs.

The cytochemical examinations and the culture of CSF (cerebrospinal fluid) turned out to be negative, but ESR (erythrocyte sedimentation rate) showed very high values. In conclusion, such data, together with a positive amniocentesis (as a result of some episodes of influenza occurred during the last trimester of pregnancy), led to diagnose a possible fetal infection.

As D. grew older, all the characteristics of

[1]Università degli Studi di Urbino "Carlo Bo", ITALIA
Email: vincenzo.biancalana@uniurb.it
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the syndrome were accentuated and obviously still are, like the typical narrow bird-like face, the constant flexion of the knees, significant mobility problems, kyphoscoliosis, clinodactyly, malfunction of the urogenital apparatus and above all that, a severe mental retardation. (Faivre L., et al., 2002)

The psychomotor evaluation of D. has been carried out using the "Mo.V.I.T." test, which was developed by Professor Lucio Cottini in 1996.

The "Mo.V.I.T." test (Movement Evaluation Transfer Intervention)

The purpose of this test, is to give the operators of the motor activity, a method for setting-out and leading their intervention, which is, at the same time, efficient and meticulous, providing guidance for operational goals, outlining methodological paths for intervention and monitoring the results.

Such curriculum is suitable for both able-bodied individuals and people with disabilities. In details, it provides direction for: assessment, functional diagnosis, and establishes the goals. In addition, it delineates the methodological paths relating to the field of psychomotor.

This instrument is characterized by four main aspects:

- it allows an objective evaluation, which does not take into account the educator's interpretation,
- it represents a guide for observation, which can be led during usual activities performed in the gym,
- it can be used as a checklist, with increased focusing level, which allows you to carry out reconnaissance for those individuals with problems, who show deficiencies at the level of motor skills, through administration of comprehensive checklists,
- it allows, not only the assessment of abilities and difficulties of such individuals, but also their potential development.

As mentioned, the checklist included in the curriculum of the "Mo.V.I.T. test"(Table 1), represents an example of a list, with increased focusing level, which allows the systematic observation of the psychomotor area through seven steps, referred to the functional prerequisites and coordinative skills, here below listed:

- tone and relaxation,
- balance and general dynamic coordination,
- segmental and intersegmental coordination,
- hands coordination, eye-hands coordination and handwriting movement analysis (graphonomics),
- structuring of the sense of space,
- structuring of the sense of time,
- laterality.

For each one of such abilities, except for the laterality one, have been identified six behavioural indicators of progressive complexity, which are then reported in a provided summarizing sheet.

The right-hand side of this sheet, is provided with blanks to be filled with the results of the assessments made. The sheet allows you to compare five different evaluations, performed at different times, in order to check for any improvements made by the individual, in regards to each single case. Each *item* of the summarizing sheets, of the different psychomotor skills, is assessed by five different tests, which do not require a specific arrangement of the situation, since they consist in normal activities performed during a normal motor activity class.

This is why the Mo.V.I.T. tests, does not fall into the danger of artificiality, on the contrary, it allows "*an objective evaluation of the abilities, of deficiencies and of the potential development of the individual, observed in his own environment, free to interact with his classmates*". (L. Cottini).

For the performances of the individuals, for each of the five exercises that evaluates each item of the sheets, it is given a score as follows:

2 points, when the assigned task is performed independently, exclusively by voice command.

1 point, when the performance is conditional on the help that the teacher introduces, as a result of an initial incorrect performance.

0 points, when the assigned work is not carried out at all, despite the help provided by the educator.

The score that the pupil achieves within the five tests of each item, is then added up together and written in the provided spaces of the summarizing sheet, bearing in mind to write down also the date of the assessment.

The interpretation to be given to the scores achieved for the different items, is shown in the table below (Table 1).

First of all we can record the different between the motor abilities. The common and brodly shared concept of ability is a mental representation of its meaning with a large, complex and also ambiguous content. Indeed, we include in it our manual, intellectual, social, communicative, instinctive, sensorimotor, artistic, psychologic skills and abilities. In other words we can add a wide justification of a potential availability to the original concept of ability, which goes from know how to make (implicit) to know how to think, from concrete to abstract, from the instinct to rationality. If we start from the three fundamental characteristics which describe the motor task, we can classify the abilities in this way: (Table 2)

According to the organizational method of the motor task, we can distinguish:

• discrete abilities
• serial abilities
• continuous abilities

According to the motor and cognitive elements' importance in the execution of the task, we can classify the abilities as:
• motor abilities
• cognitive abilities

According to the level of the predictability of the environment, we can classify the abilities as:
• open ability
• close ability

The six columns of the form, represent the abilities that have been studied by the individual. The six rectangles of each column show instead the items of the summarizing sheet, which will have to be coloured in black. In order to obtain an immediate visual information of the results of the whole evaluation, relative to the psychomotor area, it is possible to report the results obtained, in the summarizing form, attached to the sheets (Table 3).

An important item of this table, which has particolar importance, is called *potentional development area* or *proximal area* (Table 4).. This notion, which was expressed by Lew Vygotshij around the 1920's, wants to justify that the learning in childhood is the result of a continuous relationship and comparison with other people.

Then, Vygotshij deviates from the *piagetian* concepts that explained a child development done in stages where child was ready for some learning due to the reached maturational stage by child, in order to deepen the dynamic relationships that, according to him, are the only causes that really justify learning development right from the start. These concepts were taken at the beginning of the 80's when cultural psychology becamemore important in epistemological items inside educational contexts, which stresses the mutual growth between individuals and environments improving the role of social interaction in the knowledge's construction processes which mainly occur in school. In other words, learning in not only the result of a transfer of notion or the simple outcome of an individual acquisition, but rather it's a social construction, because it happens with the use of some mediators, signs and symbols, or, as Bruner called them, *cultural amplifiers*, including, nowadays, the use of computer. Indeed he declares that the learning is a *in progress* process, based on the elaboration of the information, the adoption of a lot of operational strategies and on the hypothesis test in a contest which cannot detach from participants' collaboration.

Moreover Bruner believes that the adoption of strategy of collective learning would increase the solution of problems, which is due to its possibility that offers a continuous comparison of interpretation of a certain problem. Also I declare that, the collaborative relationship with other persons allows a continues re-description of their own beliefs and knowledge not only in developmental age, that if we observe them in a *other* size, they can have new and different meaning, or they can be increase in their own implicit meaning so they can be used in different context from their specific context of affiliation. For example, if I observe someone who uses the implicit meaning of *roundeness* as synonym of perfection in order to describe the completeness of Perugino's picture, with a broad meaning of the same secondary meaning of *roundeness as perfection*, I could state that I have drunk a *round wine*. In other words the comparison with other people can give me a continuous possibility for describe many situations that can make me have and use old concepts in a new and different way. So it's not difficult to describe this situation with the term of *learning* which mainly means change. Every time that I learn something from reading, watching a movie or from sensory and motor experiences, I'm not longer what I was before that experience: I mean, that I'm the same person but I have added a new learning. I'm different and changed.

Every learning causes a change and an implied growth.

Of course these statements take a very large virtual meaning if we consider many situations of disabilities which exist. In the case of Seckel Syndrome which we describe, during the learning phase the imitative experiences and educators' contributions are essential for the girl: so Vygotsky's concepts are absolutely right.

The six columns of such form, represent the abilities that have been studied. The six rectangles of each columns show instead the items of the summarizing sheet. Therefore, the Table will be placed as follows:
1. The blank spaces should be coloured, for the items carried out properly by the individual.
2. The blank spaces that represent the area of Potential Development, should be marked by dotted lines.
3. The blank spaces that represent a score that reveals the lack of ability, should be left blank.

Once the score for the different psychomotor skills, has been calculated in its raw pattern, it is necessary to convert such "measurements" into specific prescriptive references.

The score relative to each of the six ranges, has to be then turned into *standard points* or *pondered points,* and expressed on a scale with average 10 and standard deviation 3.

By adding up the *pondered points*, achieved in each of the six scales, one can determine the overall level relative to psychomotor skills, expressed on a standard scale with average 100 and standard deviation 15.

When the score of the pupils is higher than 130, then the level is considered "very high". It is instead considered "high" when the score is between 130 and 116, whereas those students who have achieved a score between 115 and 85, are placed at a "medium" level. Below this threshold, the level is considered "poor" (score up to 70 points) and below that, the level is "very poor".

D.'s evaluation (graph nr. 5) clearly shows that she does not have any item, in which it is possible to assure a complete ability, if anything, it was found that on the 36 items, only in 4 of them, she could achieve a score marked by dotted lines, which indicates the "*Potential Development" area*.

So, in order to carry out a conclusive work, the Mo.V.I.T. final graph, seemed to us as being reductive, therefore we decided to elaborate another graph, where we could take into consideration only the eye-hand coordination skill. We replaced the six columns, originally assigned to the six different skills, with six specific items for eye-hand coordination, and the six items have then been replaced by five exercises, required for each one of them. Such graph, allowed us to have a clearer view on what her real eye-hand coordination skills are.

The items of the new graph stood for:

Item 1. Ability to scrunch up and fold sheets of paper.

Item 2. Ability to grasp a pencil with three fingers and draw lines.

Item 3. Ability to perform functional activities, which require coordinated movements of the hands.

Item 4. Ability to copy shapes and letters.

Item 5. Ability to hit targets with a small ball.

Item 6. Ability to mimic symmetrical and asymmetrical movements of the hands that require fine coordination.

As shown in graph 6, the patient only reported a *potential development* in the first three items, considering that, the required score to fill the blank square with dotted lines, was the minimum. In regards to the first three items, D. managed to get some points in the following exercises:

Item 1.

- *Exercise 1.* Invite the pupil to scrunch up a sheet of paper and make a ball with it, using both hands, 2 points.
- *Exercise 2.* Invite the pupil to unwrap a candy using both hands, 2 points.
- *Exercise 3.* Request the student to fold a sheet of paper in two parts, 1 point.
- *Exercise 5.* Request the student to fold a sheet of paper twice, in order to get the shape of a small rectangle, 1 point.

Item 2.

- *Exercise 2.* Invite the pupil to hold a pencil with three fingers and draw some scribbles, 2 points.
- *Exercise 3.* Ask the student to hold a pencil with three fingers and draw horizontal and vertical lines, 1 point.
- *Exercise 4.* Request the student to hold a pencil with three fingers and draw oblique lines (both single lines and oblique lines in the shape of an "X") 1 point.

Item 3.

- *Exercise 1.* Invite the student to pick up ten objects scattered on the ground (5 small objects that can be held in one hand, and 5 bigger objects that need both hands, 2 points.
- *Exercise* 2. Ask the pupil to unscrew and screw the cap of two bottles, 2 points.

From this final assessment, one can notice the remarkable difficulties that the girl found in performing these exercises. As a matter of fact, analyzing the test, it resulted that, there are only four items in which we observed an area of "potential development", three of which referred to the eye-hand coordination skill and one referred to balance.

In addition to this, it emerged a total lack of assimilation of the concepts of *loud/softly* and *near/far,* which interfered with the whole work and that necessitated a special learning training, which was carried out separately.

Those circumstances, brought out the ultimate aim that allowed us to focus on improving the eye-hand coordination. On this purpose, recreational and sport paths have been structured, alternating between bowl game and activity in the gym.

The training

For obvious reasons of "space" we will only describe some essential phases of the work, taking for granted that the whole series of exercises had a wide repertoire, in both methods and contents.

The first period of the activity was addressed, as mentioned above, to adopt the concepts of *loud/softly* and *near/far,* by working

on the ground, through the use of balls and other objects of different sizes and weights.

The first results for *loud/softly*, were seen after 4 months of intense work, carried out in the gym, using balls of different sizes and weight and positioning skittles at different distances. At the same time and using the same method, we came across the concepts of *near* and *far*.

At the end of this first set of work, we proceeded performing specific exercises aimed to improve eye-hand coordination. Using the same balls, which D. already got acquainted with, we initially started with a very loose method made of throws, tumbles and catches of the various balls.

Lots of difficulties were encountered at the beginning, just to simply keep the volley ball on the palm of her hand, but after not even a month, she could hold it for more than 10 seconds, and that gave her great satisfaction!

The next stage was to learn to keep the ball on the palm of the hand and, at the same time, extend the arm forward. Such movement is particularly difficult, because the act of extension, automatically starts "*sincinesie"* that affected the voluntary movement.

After this further learning, we passed on to both static and dynamic catch, even though still today, flying catches of the ball remained problematic, especially when using small sized balls. The stage of "throws" has been the most difficult for D. and, in fact, it gave poor results.

T he methods used were the following:

- throwing the ball with both hands above her head,
- carry out throws from below, performing first a lunge with the leg ipsilateral to the throwing arm,
- throwing the ball from below with the opposite hand, from the one generally used,
- throwing the ball from above (difficult task that rarely responded to the real intentions)
- performing throws associated to another circuit, such as walking (as much difficult)

The initial phase of this path, performing throws, has been the most critical, as often, the unsure grip of the ball, did not even allow D. to get to the launching position. But, after about a month, she was able to tackle the grip and throws pattern, 6 or 7 times out of 10 trials.

Following this phase, that was initially performed in the gym, we continued the activity in the *bocciodromo,* which is the area for playing bowls, where the elements of throws have been deepened and contextualized.

So, after 6 months of work, we can say that the results are quite satisfactory.

Looking at the results, on the summarizing sheet of the Mo.V.I.T. test, one can notice improvements, even though there are goals, which have not been completely achieved.

But everything has to be declined to the initial situation of D. that, as we already saw, was very difficult. So, also the expectations, could not go beyond those of an improvement, better than the one we achieved.

As we can see from the final graph, one can notice a little improvement in the V item, where D. succeeded and scored one point in two exercises, that were:

- alternatively hit with one hand and then with the other, a ball that we threw her from a distance of three metres,
- same exercise, but with a side throw.

Since she was given a score of 1 point, means that the desired outcome has occurred at a distance of two metres, instead of three metres.

Ultimately, the fact that D. will still have learned something, gives us hope for her future learnings, meaning that, even the smallest achievements, are the "proof" that, a certain cognitive potential is still available and can be stimulated for future learnings.

In fact, every little psychomotor learning has, in its basis, a series of activations of the learning processes, such as focused attention and memory, which represent its justification. And, it will be on the awareness of such cognitive "residues" that the adaptive intervention and the construction of new learning processes, should be based on, both in regards to motor skills and self-sufficiency.

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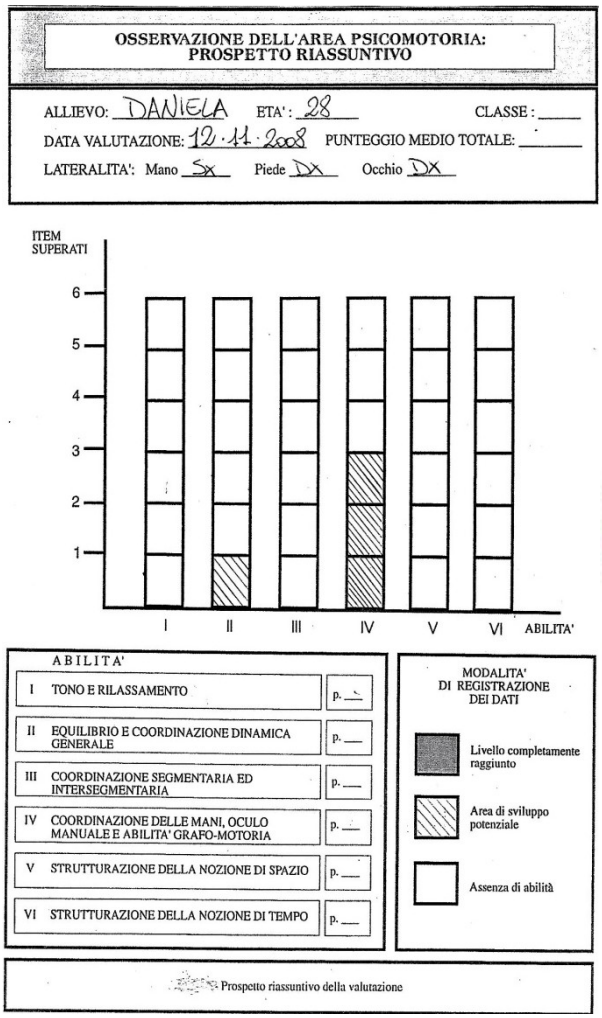

OSSERVAZIONE DELL'AREA PSICOMOTORIA:
PROSPETTO RIASSUNTIVO

ALLIEVO: DANIELA ETA': 28 CLASSE: ____
DATA VALUTAZIONE: 12.11.2008 PUNTEGGIO MEDIO TOTALE: ____
LATERALITA': Mano Sx Piede DX Occhio DX

ITEM SUPERATI

ABILITA'	
I TONO E RILASSAMENTO	p.
II EQUILIBRIO E COORDINAZIONE DINAMICA GENERALE	p.
III COORDINAZIONE SEGMENTARIA ED INTERSEGMENTARIA	p.
IV COORDINAZIONE DELLE MANI, OCULO MANUALE E ABILITA' GRAFO-MOTORIA	p.
V STRUTTURAZIONE DELLA NOZIONE DI SPAZIO	p.
VI STRUTTURAZIONE DELLA NOZIONE DI TEMPO	p.

MODALITA' DI REGISTRAZIONE DEI DATI

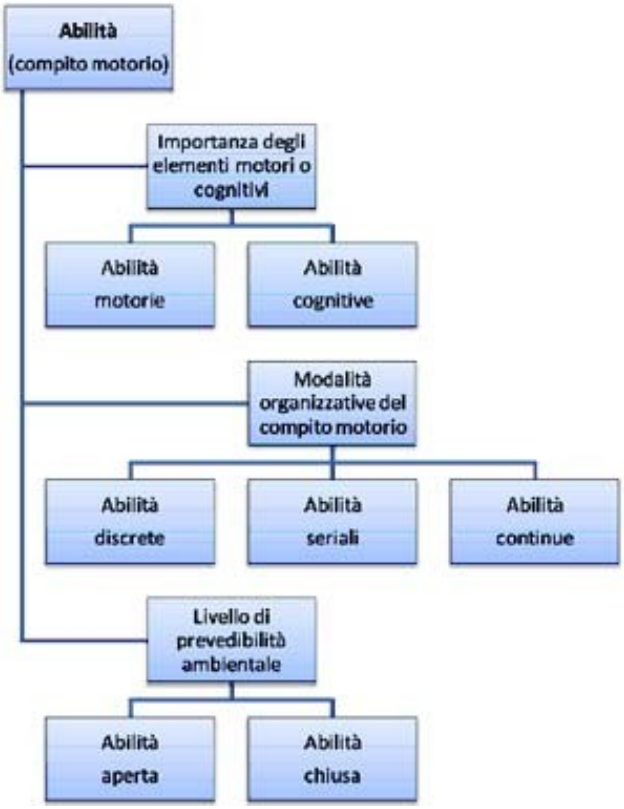
Livello completamente raggiunto

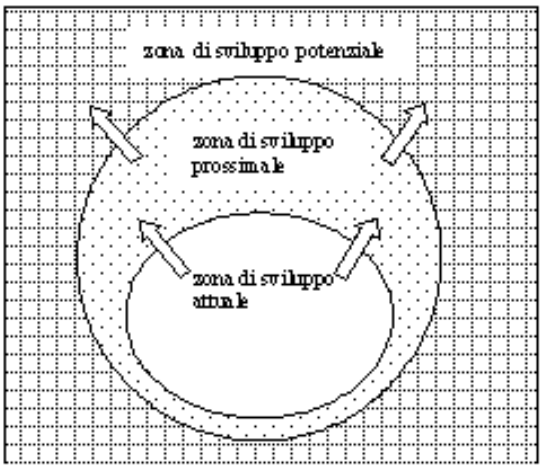
Area di sviluppo potenziale

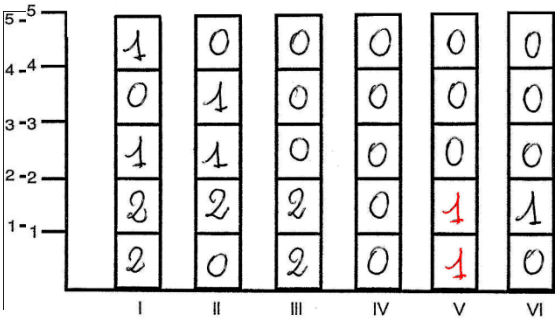
Assenza di abilità

Prospetto riassuntivo della valutazione

Punteggio	**Livello di Padronanza delle Abilità**
10 - 9 - 8	*Livello completamente raggiunto*
7 - 6 - 5 - 4 - 3	*Area di Sviluppo Potenziale*
2 - 1 - 0	*Assenza di Abilità*







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RECUPERATION IN A CASE WITH CERVICAL EPENDYMOMA AND A ATYPICAL ONSET- CASE REPORT

DOCU-AXELERAD DAN[1], DOCU-AXELERAD ANY[2], DAMIAN MIRELA[1]

Abstract

Purpose. This case presentation was meaned to described the atypical onset of the symptomatology, patient complaining in the beginning of walking troubles, progressively aggravated, the paresthesias and weakness in upper limbs being noticeable after a few months. The neurological examination correlated with the imagistic findings determined the surgery, with total surgical resection of the tumor, without postoperative complications with a good recuperaration after initiated the kinetotherapeutic programme and relieved symptomatology.

Methods. This case study relate the relationship between imagists and neurologists and recuperation team can have difficulties in esthablishing an accurate diagnosis and the same importance is the early initiation of a recuperation programme and that shows once again the benefits of team work.

Results. The particularity of presented case release in the pseudotumoral imagistic aspect, even thou the symptoms, neurological signs and evolution of symptomatology were more suggestive for an ischemic stroke. We underline the importance of complete imagistic examination, in our case the absence of contrast substance made it impossible to perform a contrast MRI, examination necessary for a more accurate diagnosis and a correct design of passive and active recuperation has a good outcome.

Conclusions. This case presentation was meaned to underline the importance of clinic diagnosis and correlation of symptomatology with imagistic findings, without minimalize the role of imagistic examination, so necessary for an accurate diagnosis. Another important aspect is that sometimes even experienced imagists and neurologists can have difficulties in esthablishing an accurate diagnosis, and that shows onceagain the benefits of team work.

Key words: cervical ependymoma, imagistic examination,kinetic programme.

Introduction

To underline the importance of clinic diagnosis and correlation of symptomatology with imagistic findings, without minimalize the role of imagistic examination, so necessary for an accurate diagnosis. Another important aspect is that sometimes even experienced imagists and neurologists can have difficulties in esthablishing an accurate diagnosis, and that shows onceagain the benefits of team work.

It is a case study realized in hospital of Constanta, department of neurology in cooperation with Faculty of Physical Education.

Results.

Ependymomas are the most common spinal cord tumors in adult patients, representing ~60% of all intramedularry tumors. Although they may occur at any age, they are notted to occur most frequently in middle-aged patients, and they have no particular gender predilection. There is an association between intramedullary e pendymomas and NF-2 (K. Al moutaery, 1996; P. Celli, 1993; L. Cervoni, 1994). Likewise, most sporadic ependymomas also show mutations in NF-2 gene. The full spectrum of ependymoma is encountered in the spinal cord-cellular, tanycytic, maligniant, mixed and myxopapillary ependymoma, as well as subependymoma. Most often, the myxopapillary ependymoma is found in the filum terminale or cauda equine and therefore is considered an extramedullary tumor(16). Most spinal ependymomas are histologically benign, rarely show infiltrative growth, and do not form tumor capsules; however, the interface between the tumor mass and surrounding normal cord tissue is relatively well defined (F.J. Epstein, 1993; M.J. Fine, 1995; M. Graf, 1999).

In general symptoms are not specific, develop over several years, and are attributed to chronic cord compression causing mielopathy. The differential diagnosis includes other intramedullary tumors such astrocytomas and hemangioblastomas as well as nonneoplastic processes, such as demyelinanting diseases and cervical spondylocitic myelopathy (F.Y. Donmez, 2008; D.R. Lefton, 1998; P.C. Mccormick, 1990).

Dysesthesias caused by spinothalamic tract compression are the most common initial symptoms in numerous series. The MRI characteristics of intramedullary ependymoma, although on T1- weighted images, high signal on T2-weighted ones, marked but heterogeneous contrast enhancement, and a well – demarcated tumor margin. A tumor – related syrinx occurs in approximately 50% of intramedullary spinal cord tumors. The most instances, thetumor pathology is low grade, and therefore treatment objective is to achieve a gross-total resection without inflicting additional neurological neurological morbidity

[1] University Ovidius, Physical Education, ROMANIA
[2] Faculty University Ovidius, Medical School Faculty, ROMANIA
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(R.A. Morantz, 1979; F.G. Moser, 1992; A.R. Rezai, 1996).

The use of adjuvant therapy in the treatment of intamedullary ependymoma is controversial. There is a general consensus that radiation is not required if gross-total resection is achived. However, after subtotal resection, the reccurence rate for these tumors is unacceptably high (Y. Nemoto, 1992; J.S. Schweitzer, 1992).

About the myxopapillary epenymoma who arise from the terminal filum, the most common symptoms are back and radicular pain.

We present the case of a 50 years old, male patient, who was admitted in our clinic for walking troubles and pain in the lumbar region and right lower limb, symptoms with progressive onset of approximately 2 months.

The first neurological examination rise the suspicion of a right L5 paretic lombosciatic, and decided to perform a lumbar IRM examination that proved the existence of several disc hernia of multiple levels L3-L4, L4-L5, L5-S1. After consulting the neurosurgeon and having patient aprovement , the disc hernia it was surgically removed with good postoperative evolution, without pain and walking troubles.

After few months patient returns in our clinic complaining of aggravating walking troubles, paresthesia and weakness in upper limbs, symptoms progressively installed in the last 3 months. The neurological examination showed Frankel D incomplete tetraplegya, with C4 level, predominant brachial; equal exaggerated tendon reflexes, superficial and profound loss of sensibility with C4 level. We decided to perform cervical and brain MRI (with and without gadolinium enhancement), that showed the presence of intramedullary mass extending from C3 to C4, with associated edema localized in the cervical and thoracic cord substance and brainstem(Fig. 1,2,3).

The clinical history and imagistic investigations were positively for a cervical intramedullary mass and imposed surgery, with total tumor resection and posterior medullary decompression. Biopsy of the lesion indicated a grade II intramedullary ependymoma.

After surgical procedure we begun an early recuperation.

Specific litterature data show that approximative 75% of all ependymomas have intramedullary localization, beeing common in patients aged 15-45 years, and by histologic appearance they are myxopapillary subtype.

MRI of the spine with and without gadolinium enhancement is the study of choice. MRI permits evaluation of the cord substance itself for masses and associated findings such as edema, hemorrhage, cyst, syringomyelia, and cord atrophy. Complete surgical resection is the treatment for intraspinal ependymomas. Total resection is generally curative, without postoperative irradiation. In addition to its role in identifying the tumor, preoperative imaging is essential in planning care.

This case study is particular by the atypical onset of the symptomatology, patient complaining in the beginning of walking troubles, progressively aggravated, the paresthesias and weakness in upper limbs being noticeable after a few months. The neurological examination correlated with the imagistic findings determined the surgery, with total surgical resection of the tumor, without postoperative complications and relieved symptomatology.

We initiate passive and active kinetics therapy program:

I. The initial phase, immediately after the surgery:

-in the early stages of the disease, the total or partial paralysis of the limbs is lax;

-the objective of the rehabilitation is the maintenance of the articular mobility in complete amplitudes and the prevention of muscular contractions;

-the correct posture of the limbs in functioning position;

The functional recovery of deficit of upper limbs

The rehabilitation of the upper limb started early, in our case – on the 5th day since the debut of the neuro-muscular deficit.

In the initial phase, when the proximal extremity of the upper limb is taken care of, there must be voluntary control of the shoulder and elbow, if possible, in different plans; all movements should be as far away as possible from the sinkinetic schemes. In the beginning, there is recommended to accentuate the spasticity of the hand to any movement of the upper limb root. Therefore, during the active mobilization of the proximal extremity, the hand shall be kept in an inhibition position, that is: total extension of the fingers and of the fist with the thumb in abduction.

-the passive mobilization of all of the joints of the affected limb is done gently, but it must be insisted in order to carry on the full amplitude of the movement. Every joint should be separately mobilized, holding at the extremities of the mobilized segments (a joint is not passively mobilized through another joint);

-the training of the body symmetry is made through bilateral activities, then alternative unilateral ones, and finally through reciprocal activities;

-when the overall condition allowed it, (on the 30th day since the debut), the Kabat technique is applied, the diagonals for the upper limb; once the

spasticity is installed, the new conditions of the neuro-muscular deficit forced the adjustment of the therapeutic tactics;

-it is important to know that with some hemiplegics there may reside a lack of usage of the hand, although motility is recovered. This is explained by the profound sensory disorders due to the involvement of the upward sensory paths which are very close on the pyramidal path, at the level of the cortex and the inner capsule.

The functional rehabilitation was proximally started, then distally.

Afterwards, the evolution was the following. During hospitalization, the patient went through:

1. Initially, the hand had no voluntary command or can only flex through stereotype movement.

2. At release, she can actively flex her fingers and thumb, but she cannot extend them except in one position; we explain that it is required to have precision in movement, and not force and execution speed.

The rehabilitator tries the "awakening" of the extensor muscles, with the help of the facilitating techniques, especilayy hose that use the position shifts.

The major objective of the lower limb rehabilitation is thus defined: obtaining a balanced command on different antagonist groups and eliminating the sinkinetics in order to recover a walking as close to normal as possible. Most statistics give percentages between 85 and 95 of recovering walking for hemiplegics.

Methodic indications: in order to prevent the typical flexion stiffness and the external rotation of the hip, knee flexion and equinovarus, we install the patient so as to have the basin flat on the bed, with no flexion of the hip and knee, the lower limb totally coupled so as to avoid its fall in external rotation, the feet is maintained at 90˚ on the lower leg.

Spasticity is announced through the exaggeration of the ROT and usually begins with the abductors of the thighs and the quadriceps, in our case, on the 30th day.

For a good rehabilitation of the walk, it is necessary to make a thorough analysis of the muscular deficit, of the repartition and intensity of the spasticity, of the intensity of the sin-kinetics, to sum up, it is necessary to make a functional evaluation of the patient.

The muscular deficit is mostly recorded (the general scheme of hemiplegia) on the following muscles: psoas, abductors and internal rotators of the hip, the knee flexors, and the leg dorso-flexors. The ischio-tibial muscles are partially respected.

During the evolution, the deficit is modified; the first muscles to recover voluntary contraction capacity are the abductors, the quadriceps and then gluteus maximus.

The muscles that remain most often, deficient, are the common extensor of the fingers, the peroneals, and the middle and small gluteus.

Bearing this in mind, the importance of the correct positioning during the flaccidity period is thoroughly justified.

The rehabilitation therapy develops in two phases:

A. In the initial phase, when the proximal extremity of the upper limb is taken care of, there must be voluntary control of the shoulder and elbow, if possible, in different plans; all movements should be as far away as possible from the sinkinetic schemes. In the beginning, there is recommended to accentuate the spasticity of the hand to any movement of the upper limb root. Therefore, during the active mobilization of the proximal extremity, the hand shall be kept in an inhibition position, that is: total extension of the fingers and of the fist with the thumb in abduction.

-the passive mobilization of all of the joints of the affected limb is done gently, but it must be insisted in order to carry on the full amplitude of the movement. Every joint should be separately mobilized, holding at the extremities of the mobilized segments (a joint is not passively mobilized through another joint);

-the training of the body symmetry is made through bilateral activities, then alternative unilateral ones, and finally through reciprocal activities;

-when the overall condition allowed it, (on the 30th day since the debut), the Kabat technique is applied, the diagonals for the upper limb; once the spasticity is installed, the new conditions of the neuro-muscular deficit forced the adjustment of the therapeutic tactics;

-the traction exercised by the upper fascicles of the trapezius and the sternocleidomastoid flexes the head on the affected side and rotates it on the healthy side.

-the body has a lateral inflexion on the hemiplegic part, with lifting and retrusion of the basin with the descent and retrusion of the humeroscapular belt due to the traction exercised by the broadest muscle of the back.

--the entire hemiplegic part is rotated backwards; in order to inhibit or reduce the spasticity that generates this attitude, as well as to correct the anomal tonic reflexes, the change of the key points: the neck, the spine, the scapular belt and the pelvic belt, the fingers and toes: these reflex positions should be localized with every patient and correct every time it is necessary; at the same time there should be attempted to reduce the

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spasticity through the methods described in the general part;

-it is important to know that with some hemiplegics there may reside a lack of usage of the hand, although motility is recovered. This is explained by the profound sensory disorders due to the involvement of the upward sensory paths which are very close on the pyramidal path, at the level of the cortex and the inner capsule.

The prognosis of the functional rehabilitation of the hand is linked to many aspects, among which we mention some references to the etiology and topography pf the lesion:

-the most serious, from a functional point of view, and, unfortunately, the most frequent, are the cortical or capsular lesions following an ischemia, such as is our case in the ICA territory. If at the debut of the illness, the functional prognosis cannot be determined, two months later it may be known according to: the topography of the lesion, the importance of the sensory and motility disorders.

-the functional prognosis is initially mediocre, and its primarily purpose is that of preventing the elbow-shoulder syndrome and learning how to use the arm as a basic helper, as well as the preservation of the future, in case the rehabilitation should occur (after a year), which is sometimes the case.

The functional rehabilitation was proximally started, then distally.

B. Afterwards, the evolution was the following. During hospitalization, the patient went through:

1. Initially, the hand had no voluntary command or can only flex through stereotype movement.

2. At release, she can actively flex her fingers and thumb, but she cannot extend them except in one position; we explain that it is required to have precision in movement, and not force and execution speed.

Conclusions

Given the slow growth and the well-circumscribed quality of these tumors, symptoms generally progress slowly, and the tumors are often present in patients long before diagnosis. It is important to remember that this type of cases can have atypical onset and therefore an accurate anamnesis correlated with the progressive characters of symptomatology could be helpful for diagnosis.

Although it is a rare and slow growing neoplasm, early detection is critical for optimal postoperative functional outcome that is directly related to the preoperative functional status.

Fig. 1: Cervical MRI

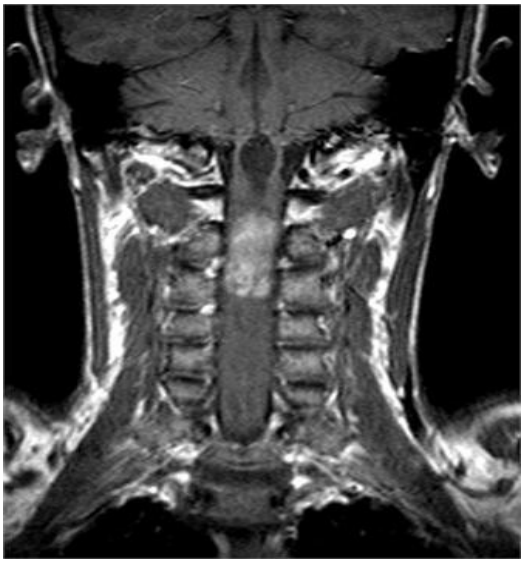

Fig. 2: Cervical MRI

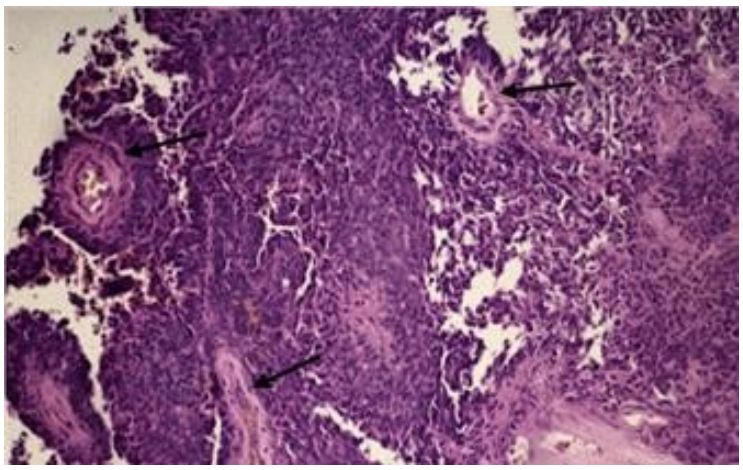

Fig.3: HISTOTAPHOLOGICAL EXAM

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❖ MANAGEMENT IN SPORT

REPRESENTING OF A MODEL FOR COMPILING OF COMPETENCES REQUIRED BY MANAGERS OF SPORT FEDERATIONS IN IRAN

AKRAM SOLTANI[1], IMAN NAZERIAN[2]

Abstract

It is necessary to determine the competency model and intended capabilities for managers of sport federations at present and in the future in order to train them for better execution of works and moving along strategies and purposes for general establishment and development. According to this and given to the existing experiences for determining of the perfect model of competences and capabilities required by managers of sport and even non-sport organizations, management and leadership competencies will be studied firstly that are proposed by the clear-sighted and scholars of the management science. Then competency models of the world's superior and successful sport federations will be studied. Afterwards the most important competencies that are emphasized in most models and theories will be selected and each competency will be defined. At last, competencies are compiled in the form of a questionnaire and they will be distributed among the intended statistical population of sport managers of sport and non-sport organizations in order to specify the effect level of each competency on improving of the individual and organizational performance and also effect of each competency on future success of organizations. Data will be analyzed by means of SPSS software and finally reference model of sport federations' managers is determined.

Key words: management of sport federations, human resource strategic management, competency, capability, empowerment, succession, skill.

Introduction

More attention is focused on the customer and rapid responsiveness to him in today changeable working environment and managers as leaders and guides have been converted to a vital source at the first line of employees through all these conditions. Moreover, an efficient program for developing of individual capabilities in managerial roles is essential for permanent individual development. Therefore, viewpoint of competency and nurturing of competencies becomes important (Hay Group, 2001).

Competencies are the collection of abilities and capacities that enable individuals to have a desirable performance in performing of their working role and duties in the framework of limitations inside and outside of the organization. Furthermore, they guarantee

[1]Department of Human Science of Khomeinishahr Branch, Islamic Azad University, Esfahan, IRAN
[2] Department of Physical Education and Sport Science of Mobarakeh Branch, Islamic Azad University, Esfahan, IRAN
Email: akram.soltani65@gmail.com
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organizational success. In fact, competencies are characteristics which are related to the superior or effective performance in the intended job and are evidences denoting that the individual has characteristics for superior or effective performance (R.E. Boyatzis, 1982).

Training of managers requires a perfect and comprehensive framework to give effect to purposes and strategies of the organization through correct and effective selection and training of managers. Various environmental and inter-organizational variables are considered in designing of such models, so accurate competencies will be identified and proper decisions are made in human resources management based on these competencies (N. Mirsepasi, D. Gholamzade, 2010).

Competencies denote purposeful behaviors that include the following factors: Knowledge, skills, attitudes and values, characteristics, motivation, self-concept and social roles (Babaee, 2008) that are leaded to superior and influential performance of the physical exercise manager in a job.

Competencies denote purposeful behaviors that include the following factors:

- Knowledge: job qualifications, information and specialty related to the job
- Skills: the ability to perform actions related to job purposes
- Attitudes and values: mental preferences or assumptions of the individual
- Characteristics: personality characteristics and the manner to react towards conditions and individuals
- Motivation: internal stimulus and enthusiasm for taking action
- Self-concept: perception of the individual from himself
- Social roles: perception of others from the individual (M.A. Babaee, 2008).

Competency models have been designed as a foundation for the most developed management programs and displacement planning. Without them organizations are rarely able to move beyond a simple displacement approach in management and planning. These models provide primary designs for compilation of the required competency at present or in the future and create a scale and standard for measurement of training necessities of individuals.

They are more important especially when the organization is committed to train treasure of talents, since they provide a standard for all those who should be evaluated (W.J. Rothwell, 2006).

During recent decades various organizations have designed competency models for effective development of their managers. Different environmental and inter-organizational variables are considered in designing of such models so that proper competencies are identified and accurate decisions are made in human resource management by decision making based on such competencies (N. Mirsepasi, D. Gholamzade, 2010).

Through compiling of competencies required by managers of sport federations at present and in the future it is possible to prepare them to identify capabilities of sport federations' managers in environmental transitions, compile formal and informal educational programs, create a compiled and reference system in order to train managers and compiling of perfect model of competencies for managers of sport federations, make proper decisions, enhance the required skills and capabilities of employees, athletes and the society level.

The present survey will be performed towards compiling of the reference model of competencies of managers of sport and non-sport organizations in order to be able to solve one part of management problems in sport organizations.

Objectives of research

1-Compiling of the reference model of competencies required by sport federations' managers

2-Helping to training orientation of managers of federations based on needs and demands

Methods of determining of competencies model

Various methods have been offered for preparing of competencies list and compiling of competencies model that we refer to some of them.

First William Byham's methodology is stated that is the most basic and common method for determining of competencies model and then some of the represented models by researchers and applied methods in organizations will be explained.

1- The method for determining of Byham's competencies model

This approach has five major steps that will be stated briefly in the following. It is noteworthy that many of the clear-sighted have accepted this approach.

A) Studying of research literature and internal documentations: a research is done here to study the existing internal models and external models that may exist for various roles. In fact, opinions of various clear-sighted from previous years until now are studied in this phase and their views about management competencies are exploited. This issue could have two main benefits:

First a complete list of competencies is obtained.

Secondly when competencies are studied from the viewpoint of different clear-sighted it is specified that which competency is more considered by them (identifying of frequency number of each competency).

B) Interviewing with successful and prominent individuals in the organization:

First it is possible to evaluate the prepared list in the previous phase. It is in a way that we obtain a list of competencies through interviewing with prominent individuals.

Secondly it is possible to domesticate competencies to some extent in a way that the intended competencies are specified in a specific organization.

Sherman and et al (2002) are among those who have represented this method. But in this phase they add another section to their method and that is doing interview with experts about competencies and studying

of them from their viewpoint. This issue could include the above-mentioned benefits.

C) Preparing of the primary list of competencies: a list of competencies is obtained by performing of the first and second phases that is indeed the primary list of competencies.

D)Validation of competencies: list of competencies that has been obtained in the previous phase is in fact the raw list of competencies. Because of this it must be validated. Actually purpose of validation is:

1- Each one of the managers of these levels must undoubtedly have specific competencies that are different from other levels. Competencies related to each level (senior, middle and operational) are determined in validation.

2-Competencies are different from one organization to another organization. In other words, all middle managers don't need similar competencies in all organizations.

3-A manager doesn't need all proposed competencies on his management level to a same degree. In other words, various competencies must be weighted too.

E)Preparing of competencies model: after validation of competencies, the intended and valid competencies are identified and then the competency model is prepared for different levels (M. Karami, 2008).

2- The method for compiling of competencies model of Rothwell and Kazanas

Rothwell and Kazanas have three methods for identifying of competencies:

1- comparative evaluation method (benchmarking) or borrowing of a model, 2- method of compiling of competencies proportional to the conditions of the organization, 3- synthetic method.

Each viewpoint has its own advantages and disadvantages and the best way to select a method is to determine it based on situational conditions and factors. Benchmarking method or borrowing of a model from similar organizations is a quick and easy way to have competencies.

Another method in the present changing world is to determine and identify competencies through benchmarking from successful organizations in the world and domestication of the model through experts' views. This method studies similar samples through deep studying in the first place and exploits competencies of similar industries and then develops competencies model of managers of the company by means of opinion poll from managers and experts of that organization (Young et al, 2006).

3- Dan McCarthy's method for compiling of competencies model

Dan McCarthy has stated the following steps for compiling of competencies model respectively:

1- Determining of strategies of the organization
2- Studying and reviewing of competency models of successful organizations
3- Choosing of key competencies that are leaded to the organization's success (8 to 12 competencies)
4- Reviewing of the obtained model by the organization's senior management team
5- Developing of the final model of competencies (D. McCarthy, 2008)

4-Several other operational methods in compiling of competencies model

The following steps have been traversed in communications organizations in Sri Lanka for compiling of competencies:

1- In the first step a list of capabilities and competencies was prepared from the press and research literature.
2- All options of competency were studied in order to standardize the list and those competencies with conceptual similarity took a similar title. At last a list including 107 competencies was obtained.
3- A group of experienced experts and managers of the company were asked to rank the obtained competencies list based on their importance for activities of the company.
4- A group of managers of the company were selected randomly and were asked to rank the obtained list of competencies again.
5- Both obtained lists from the previous two steps were analyzed by two researchers separately and the most important competencies were identified and dualities were omitted.
6- The final list was obtained through analyses and views of two researchers. This list includes 31 competencies that were introduced as competencies model of communications organizations in Sri Lanka (V. Wikramassin, N. Dezoyza, 2008).

Competency models from several companies

Dell Company

Basic capabilities model of Dell Company is a fundamental and benchmarking model for many organizations which has training programs of managers or succession management. All employees of this company are evaluated according to the following capability (competency) when are entering in to the primary ranks, job levels and management posts:

1- technical-specialized skills
2- personal and personality uniformity and confidentiality
3- intelligence quotient
4- business flair
5- commanding skills

In addition to the above capabilities, nine other capabilities have been introduced as successful factors for leaders and managers of this company that complete the above list. They are:

1- the ability to distinguish and regulate priorities
2- skills for problem solving
3- complementarily and consequentiality
4- the ability to constitute effective teams
5- training of subordinates,
6- paying attention to customers and focusing on them
7- the ability to design and manage active organizations,
8- the ability to learn while taking action

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9- the ability to encounter with ambiguity (Falmer and Kanger, 2009).

General Electric Company

General Electric Company that is a sample organization in regulating and compiling of educational-displacement programs of managers has clarified its desirable characteristics for larders of this organization in the 21 century. In addition to general aspects such as 1- cohesive thinking, 2- high intelligence, 3- various and global experiences and etc, these characteristics include three main features which are known as 3E in the General Electric that are:

1- high energy
2- the ability to induce energy to others
3- effrontery or bravery of movement in encountering with a blind (Abolalaee, Ghafari, 2007)

Canada Government

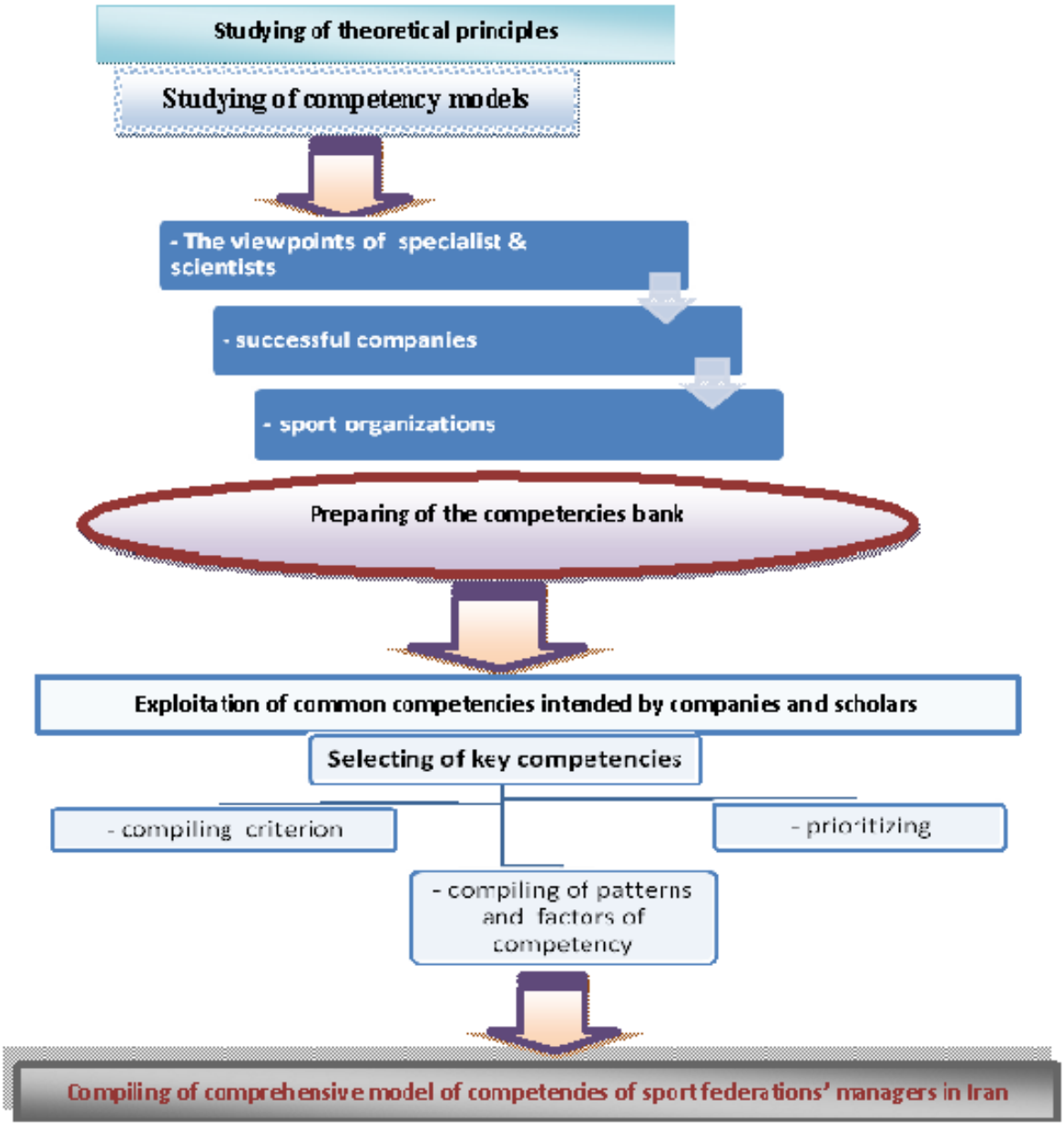
Canada government has compiled competencies as the following for its managers:

1- effective communication 2- customer oriented 3- the ability to have win-win negotiations 4- self-awareness 5- seeing big picture 6- ethics oriented (professional behavior) (Ghafari, 2008).

The model for compiling of competencies of sport federations' managers

Given the stated subjects, we can show the principles and components for compiling of competencies of sport federations' managers in model 1:

Model 1- components for compiling of competencies of sport federations' managers in Iran



Step one: studying of opinions of the clear-sighted in management and examining of management competencies of the successful sport and non-sport organizations in the world

The stated management competencies by the clear-sighted and scholars of management science were studied and a list of competencies were obtained. Then it was examined by different scholars and a list of successful organizations in the world was developed. Competencies model was tested and competencies list of sport federations was studied.

Step two: by exploiting of competencies from models and opinions in this relation the following actions are done.

- Preparing of a complete list of competencies.
- Determining of frequency of competencies and specifying of those competencies that have been more emphasized.
- Choosing of superior and key competencies, determining of competencies of the same group and omitting of repetitive ones.
- Preparing of final bank of indexes.

Step three: definition of competencies

Step four: evaluation of competencies that the following actions are done in this step:

- Preparing of a checklist for competencies.
- Preparing of validation criteria.
- Distributing of the modified checklist.
- Data collection.
- Analysis
- Determining of competencies' priority.

Step five: compiling of competencies model of sport federations' managers on two levels of strategic and key competencies and supporting competencies.

Research methodology

This research is of metrical type.

Statistical population

Statistical population of this survey include managers of sport federations in Iran who are 48 in this survey. contact@analefefs.ro

Determining of the sample volume

Questionnaires will be distributed among managers of sport federations in Iran given the nature of the survey and statistical population.

Tools of data collection

Researcher self-made questionnaire is the tool of data collection in this survey.

Validity

Content validity is used in order to test the validity of the questionnaire. Content validity of the questionnaire is determined in this regard by means of management scientific texts and mainly competencies model of organizations and successful federations of the world, applying of appropriate components and obtaining of opinions of the clear-sighted, advisor professor and guiding professor.

Reliability of the questionnaire

Reliability of the questionnaire in this survey is estimated through alpha cronbach method.

Method of data analysis

Frequency, percentage and mean are used on descriptive statistics level and independent t, T-test, ANOVA test, Friedman test, factorial analysis by help of SPSS and MINITAB software are applied on inferential statistics level if necessary.

Conclusion and discussion

Improving of sport performance in sport federations requires trained managers and employees. When managers obtain appropriate capabilities and competencies they can play an effective role in proceeding of the group. An oriented training and working for managers of the federation necessitates determining of those capabilities they need to perform their present and future duties. Therefore, compiling of reference competencies model give rise to purposefulness of education and it is possible to compile an appropriate educational program for employees. The result of the present article is compiling of the required competencies for which we can reduce decision making and managerial error of sport federations' managers to a large extent.

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AUGMENTATION OF SPECIFIC MANAGEMENT IN SPORTS PERFORMANCE CLUBS IN THE COUNTY OF CONSTANTA

GEVAT NEJDET[1], LARION ALIN[2], MIHĂILESCU STANA[3], ALEXE DAN IULIAN[4]

Abstract

Purpose: The hereby paper represents a vocational and theoretical study, being an attempt to implement high quality management within the structures of performance sports clubs in the district of Constanta, from the perspective of a scientific managing that can efficiently lead sports in Constanta in order to achieve high results. From the theoretical point of view, the paper promotes the high managerial strategy or challenges the modern management which links the virtues of the qualitative organizing methods of the cultural and sportive activity. Having a real base, our investigations are directed towards: labeling all relevant information for approaching the necessary changes within the sportive structures to elaborate a managerial project which can lead to efficient and effective development of the activity of the performance sports clubs in the district of Constanta.

Methods: direct observation, method of data analysis and theoretical generalization literature, SWOT analysis, correlation method between different organizational structures from another country and from economical or social domain through comparative management.

Results: According to the variables shown in the investigation field, when the observing methods validated our expectations, we passed from their analyses to their linking. Studying the correlation between these variables forced us to use the methods of the questionnaire and interview. The two of these merged in the method of analyses – diagnoses SWOT – directed both towards the activity of the functional managers (managers, directors) and towards the operational managers (technical directors or coaches involved in the training process). The investigation was based on the analyses of the answers of questionnaires, on the internal documentation of the clubs regarding the real situation of the material, financial and human resources, the organization programs of the sports clubs (where they existed). The SWOT analysis unearthed strong points that can be implemented that can be logistic support in the current organization of specific structures in sport from Romania, develop a network linking the different approaches to issues facing sports clubs in the current economic and social situation.

Conclusions: The research was conducted in the domain of structural and procedural organization and focused especially on the sportive organizations from the county of Constanta. The scientific investigations made in this paper had as main aim the promoting of high quality management within the performance sportive clubs marked by the social and economic characteristics of the transition period of our country. Certainly, these investigations were centered on several independent variables presented in the work hypotheses which were partially confirmed because a lot of activity sectors (including performance sport) are determined or closely related to the social-economic factor.

Key words: management, sport, sport clubs

Introduction

As the science of leading, the management covers the totality of principles, rules, knowledge, requirements and means, and as an art, it involves the talent, the ability and the skill of making possible the transformation into indicators and parameters the maximum efficiency of the practical activity. When going into details, we can consider the action, the art or the way of leading an organisation, a company or a group of people, or directing, planning and coordinating and controlling all the decisions which are taken in a specific area of interest. The leadership of the sport phenomenon, which in the last decade has known a spectacular expansion all

[1]County School Inspectorate, Constanţa, ROMANIA
[2] Ovidius University of Constanta, ROMANIA
[3] "N. Rotaru" High Scool Sports, Constanţa, ROMANIA
[4] "V. Alecsandri" University, Bacău, ROMANIA
Email: alinlarion@yahoo.com
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over the world, in quantity as well as in quality, did need the discovery, the use and the adapting to new methods of direction and modernisation of the structure of the communitarian organisation for masses sport. According to the concept of the sport management – the modern one – the sport for all does not have to be entirely under the financial authority but it is necessary to maintain the "humanity", however without neglecting the significance of the economical side, i.e. the money, in the life of the individual.

The managers are those finding, planning and using the physical and human resources in order to reach the targets (A. Larion, 2005). This definition does not include guidelines about the way in which these targets are being reached. One can lead and control the behaviour by the way you can predict or explain it.

This means that, if we can understand the reasons of a high class service, of an ethical behaviour or anything else, then we can act correctly in order to manage it properly. If predicting and explaining consists in the analysis, then the management consists in the action (C. Gevat, A. Larion, 2005). Unfortunately, we see too many cases in which the managers act without analysis, searching a fast solution of the problem. The result is often a disaster. It is important not to overanalyse a problem. It is rather necessary to attack the problem having a systematic understanding of the knowledge of the behaviour.

The hereby paper represents a vocational and theoretical study, being an attempt to implement high quality management within the structures of performance sports clubs in the district of Constanta, from the perspective of a scientific managing that can efficiently lead sports in Constanta in order to achieve high results. That is the very reason why we consider that reaching the main objective of the board meaning efficiency in all domains, by directing resources and efforts towards final targets, the integration in the European Union and the solution for the proposed strategies in order to harmonise the legislation specific to sports, we can thus draw an access way to sports performance by means of high quality scientific managing (A. Larion, 2005).

From the theoretical point of view, the paper promotes the high managerial strategy or challenges the modern management which links the virtues of the qualitative organizing methods of the cultural and sportive activity (C. Gevat et al, 2009). The extrapolation and the challenge of the modern management at the level of performance sports clubs in the district of Constanta implied the conducting of serious studies and scientific research in a period of great social and economic turmoil and of structural changes caused by transition and not only. Moreover, we consider that in this situation the results of our scientific investigations become efficient, contributing to the enrichment of the theory and practice of the Romanian cultural and sportive management.

Research motivation

The choice of a theme is subjected to the Romanian social economic reality, which is in full process of development, process which triggered off similar phenomena in all domains of activity, including performance sports. Considering that the theme of this paper can be taken a step forward, bringing permanent improvement, the reasons invoked , such as the scientific research we conducted can act as a subsidy for the purpose of this paper.

When the tasks which are sustaining the realisation of the objectives of the organisation have been distributed among the individuals and departments, the action of reaching them must be coordinated until the actual fulfilment of these objectives (J. A. Seiler, 1988). We can identify five basic methods of coordination, the process of facilitating the synchronisation, the communication and the feedback.

a) Direct supervision. This is a traditional form of coordination. It means to act according to the circuit of the hierarchy, of the supervisors or special designated managers in order to coordinate the work of their co-workers. Some of the activities are mainly routine, so that the technology itself can offer a way of coordination and only a small amount of direct supervision is needed in order to do the coordination

b) The standardisation of the results. Even when the direct supervision is minimal and the processes are not standardised, the coordination can be done by the standardisation of the results. The preoccupation moves from the way of work to the fulfilment of certain physical or economical standards.

c) The standardisation of personal abilities. When the processes and the results cannot be standardised and the direct supervision is not measurable, the coordination can be obtained by making a standardisation of personal abilities.

d) Mutual adaptation. The mutual adaptation is based on informal communication for the coordination of the activities. Surprisingly, this is useful for the coordination of the most simple as well as for the most complex divisions of work. As a comparison, we take a small flower shop who's owner works in the shop, a seller and messenger. It is very possible that these persons are coordinating their work by informal processes, adapting themselves mutually to their existing needs. On the other hand, let us think to the managing team of each sport club. Such teams are made of people with different educational background (finances, marketing) and are challenged to think of non-routine matters. Again, mutual adaptability is necessary in order to coordinate the efforts because

the standardisation is not possible. We may conclude that the method of coordination which is used is influencing the design of the jobs the same way the working division does it. As we move from left to the right on the continuous of the coordination, the potential of better job designs is rising. In the same context, an inappropriate strategy or coordination can destroy the intrinsic of a job. In a traditional way, most of the professional work is coordinated by some own way of standardisation of the abilities. If the manager of a research lab decides to coordinate the work by more direct supervision, the motivation potential of the supervised jobs may go down. The manager is doing the work *they* are supposing to do.

Other methods of coordination

a) Integration. (The process by which the coordination between the differential departments is obtained (G. Johns, 1998). A good integration makes the coordination without diminishing the differences that give the possibility to each one of fulfilling his job. In the increasing order or the degree of elaboration, there are three methods of integration: boundary roles, operational groups and permanent integrators.

b) Boundary roles. A boundary role within a department, is done by a person which is designated to realise the coordination with another department, as part of his tasks. In other words, he is a person who gives part of his working time for part-time connection between two departments. Sometimes, the other department can act by mutuality, appointing a connection person. Therefore, in a professional sport club, one can ask the best ones to act as connecting persons with certain sport clubs. It is possible that the connecting persons to do this specific task as part of their job.

c) Operational groups. When there are problems arising which involve simultaneously several departments, the boundary roles are not very efficient. The operational groups are groups designed especially to solve coordination problems which may arise. Representative individuals of different departments are included, either *permanently* or *part-time*, and when the proper integration is done, the group melts itself. Which are the implications of the structural characteristics in satisfying the employees in their job? There is no easy association between rising and lowing the professional satisfaction. The formalisation produces often dissatisfactions of work, except for the individuals who need more safety given by rules. The formalisation is a particular problem for the interface type of employees having direct contact with people outside the organisation. There are few studies about the individual reaction to the variation of the control area. One important mechanism by which the structural characteristics influence the job satisfaction is the design of the working place. For instance, the extreme division of work will reduce the variety of tasks of each job and generates dissatisfactions. Analogically, the coordination of this divided work by a powerful formalisation, results into a decreasing of the autonomy and the stimulation of the dissatisfaction. A careful attention should be paid in this case to the intimate relationship between the structure and the job design. Generally, the classical theoreticians incline to favour the mechanical structures (organisational structures characterised by height, specialisation, centralisation and formalisation). These structures have a tendency towards height, thight control area, specialisation, a high degree of centralisation and formalisation. The other structural and staff aspects from the figure are completing these basic prescriptions. By analogy, the organisation is structured as a mechanical device, each part serving a separate function, each part being in a close coordination with the other ones.

The flexibility and informal communication are preferred to rigidity and strictly hierarchical circuit. Therefore, the organic structures match more with those going with the flow of human relationship type of thinking. Generally, the strong mechanical structures are more suitable in a steady environment with a routine technology. Organic structures work better when the environment is less steady and the technology has less routine. The global competitions, as well as the improvements in technology and communication lead to positive changes in the sport field and such new structures were implemented. A typical example is when a more adaptable organisation was created by removing the unnecessary bureaucracy and decentralisation of the decision making process. An extreme case is the appearance of the **network** organisations.

Within the **network organisations,** the different functions are coordinated in the same measure by market lead mechanism as well as by managers and lines made by the local and central authority. Therefore, the emphasis is on who can do what more efficiently and economically and not on the steady boundaries imposed by the organisation chart. All the actives necessary to make a product (in our case the move), are part of the network as a whole and not kept “at home” by one company/department

Ideally, the members of the network co-work, share information and personalise the services in order to satisfy the needs of the organisation “Sport for all” from a certain division. One of the organisational tendencies of the ‘90s was to reduce the staff. In this period of time more jobs disappeared because the organisations tried to encourage the efficiency and to reduce the costs in an age of global competition of changing governments, corporate assaults and of more advanced technologies. One useful rule is to avoid the unnecessary formalisation and the centralisation in matters which can have a negative impact in the

given operation. One tactic is to reduce in a great measure or even to eliminate whole departments of administrative councillors at central level. The human resources department can be reduced and the judicial one can be as well eliminated. Many such administrative units became with the time overfilled and are known as isolating the managers from the real problems of the departments and as sources of buroucracy in the decision making process. Therefore, the reduction can lead to decentralisation, given to the line managers more power and accelerates the decision making. The outsourcing of some activities can be a valid strategy but it is clear that some consulting arrangements can be more expansive than the inner departments. One useful rule is to think well before we reduce the staff, what work can be done and *who* should do it.

Reflections in advance about the structural aspects of the staff reduction can replace the involving of the employees in such plans. Taking people by surprise by diminishing the labour will result in: lower motivation, weak sport results, and continuous mistrust in the management team.

Target

Having a real base, our investigations are directed towards: labeling all relevant information for approaching the necessary changes within the sportive structures to elaborate a managerial project which can lead to efficient and effective development of the activity of the performance sports clubs in the county of Constanta. In the same time, we had in view to take advantage of the human resources, financial and material, which can lead to the improvement of the strategy in sports clubs.

Objectives

The aim of the research can be divided into the following research objectives:

- First doing a survey about the real state of developing the managerial activity within the performance sports clubs by analyzing the organizational structures, work division and coordination, existing jobs, the management style etc.
- Identifying the relevant information for approaching change, agents (managers) involved in the change, the causes of change resistance , as well as the solutions of optimizing the entire activity within the clubs;
- The elaboration and putting into practice a managerial project which can lead to forming a new organizational pattern, as well as of a new organizational culture. Thus, further targets of the program are:

- anticipation, explanation and delimitation of the organizational pattern;
- identifying the best degree of specializing and standardizing work assignments;
- fighting and preventing errors;
- passing from a centralized level in the management of clubs and sportive associations at a level of self-administration and high management;
- to be easy to put into practice and programmed at all levels and managerial domains in order to form a unitary concept of administrative thinking and acting in the district of Constanta and all over the country.

Hypotheses

The contemporary society is characterized by the depth, complexity and the rhythm without precedent of the economical, technological or other kind of transformations which trigger off changes at all organizing levels of the social life (family, work team, school etc.) .

In this context we emit the following *hypotheses*:

1. We believe that the change in the sportive structures must be realized gradually within a systematic process of diagnoses and analyses of the inside and outside environment, which will allow the identification of the factors (strong parts, weak parts, opportunities and threats which may influence in a positive or negative way both the efficiency of the management domains and the entire activity.
2. We consider that the old organizing structures of performance sports are rarely (or partially) efficient and as a result we have to elaborate and put into practice some new developing strategies.
3. We consider that the procedural and structural changes can be projected and the construction of the project has to envisage some reference elements.
4. Any change of the sports structure means the effort of the entire group as well as team work. We believe that these ideals are the very base of success and have to boost the activity of the new sportive structures.
5. We think that the present stage of economic development (of transition), the problem of using the logistics within the club is a real problem which has to be solved at national stage, in the same time with the organization of a Logistic Center for the economic system.

Discussion

The research had the following **stages**:

- **first stage**: establishing the objectives, the subjects (4 sportive structures representative for the city of

Constanta), the elaboration of the questionnaire, the presentation of the questionnaires to the functional and executive managers from the sportive structures involved in the research, the analyses of the balance sheets for the results of the clubs in the period, carrying out a prospective project of developing these structures;

- **the second stage**: putting into practice the prospective project of developing performance sports organizations. According to the variables shown in the investigation field, when the observing methods validated our expectations, we passed from their **analyses** to their **linking**. Studying the correlation between these variables forced us to use the methods of the **questionnaire and interview**. The two of these merged in the method of analyses – diagnoses SWOT – directed both towards the activity of the **functional managers** (managers, directors) and towards the **operational managers** (technical directors or coaches involved in the training process). The investigation was based on the analyses of the answers to the two types of questionnaires, on the internal documentation of the clubs regarding the real situation of the material, financial and human resources, the organization programs of the sports clubs (where they existed) and the job requirements.

According to what was mentioned above, we drew out a project of institutional development based on the following factors:

Strategic targets	**Strategic options**
Curriculum/programming 1. Selection campaign extended to the entire county; 2.Periodical assessment of the level reached in training by using sets of efficient tests; 3. The elaboration of some evaluation instruments for the proposed targets according to the documents	1.1.colaboration with the schools of the city; 1.2.watching the contests between schools; 1.3.the organization of competitions in order to find future sportsmen; 2.1.establishing at the end of each training cycle examination and control tests for each training level; 3.1.permanent monitoring of the activity by registering partial and final results; 3.2.drawing out some progress sheets for sportsmen; 3.3.statistic analyses of the results from comparative events.
Human resources 4. Improving relationships, trust and competence delegation in team work 5.The elaboration of the behavior code of the pupils	4.1.resorting to team work in the elaboration of all the documents for school (project of institutional development, managerial plan, rules for internal order, behavior code); 5.1.the behavior code of the sportive pupils should be easily understood by pupils, and its elaboration should represent the result of team work.
Material and financial resources 6. using and developing the already existing material and financial resources	6.1.making available periodically for the sponsors the sports bases; 6.2.renting the sports bases; 6.3.selling tickets, badges, emblems etc. which represent the club.
Human relationships 7. The real involvement of the parents committee in solving the school problems; 8. Developing some local partnerships	7.1.inviting parents to sportive events; 7.2.attracting parents and creating a familiar direction for their involvement in the activity of the club as financing partners by taxes, subscriptions etc. 8.1. collaboration with the local radio and television channels; 8.2.new partners: sponsors and attracting in the administration council some bank managers and financially strong firms.

Conclusions and recommendations

The research was conducted in the domain of structural and procedural organization and focused especially on the sportive organizations from the county of Constanta.

The scientific investigations made in this paper had as main aim the promoting of high quality management within the performance sportive clubs marked by the social and economic characteristics of the transition period of our country. Certainly, these investigations were centered on several independent variables presented in the work hypotheses which were partially confirmed because a lot of activity sectors (including performance sport) are determined or closely related to the social-economic factor.

As a result of the analyses conducted at the studied sportive structures, the financial accountancy domain has to be linked to the proposed targets; the sponsorship being on a high position in the organizational culture of the sportive club;

- attracting parents and creating a familiar direction for their involvement in the activity of the club as financing partners by taxes, subscriptions etc.;

- organizing at a national level some perfecting courses for sports and educational management, according to which the entire staff should be assessed at central level in the organizational structure of the performance and high performance sport;

- the preoccupation at institutional structural level of creating manager positions in sport (by transforming the vacant ones, by redistribution, by change, by restructuring etc.).

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USE OF NEW MEDIA BY TURKISH FANS IN SPORT COMMUNICATION: FACEBOOK AND TWITTER

SELAMI ÖZSOY[1]

Abstract
Purpose. This research examines the use of Facebook and Twitter, two social networks, for sportive reasons in Turkey.
Methods: To this end, the literature was surveyed and a 5 Likert type data collection tool consisting of 21 questions was developed by the researcher based on the expert views. The sample of the research was 460 sport fans who are college students at Abant İzzet Baysal University and Sakarya University.
Results: It was found in the research that 91.7% of the participants had a profile on Facebook and 13.3% had a profile on Twitter. The rate of opening an account on Twitter, which still has no version in Turkish language, was low. It was found that the fans mostly followed the official site of their favorite team on Facebook, got informed about the sports activities through Facebook and learned news, which they did not hear from other sources. It was also ascertained that male fans used social networks for sportive reasons more than female fans did ($p<.05$).
Conclusion: it is possible to say that social networks such as Facebook and Twitter have become a rapidly-developing alternative medium in sports against traditional media such as newspaper and television.
Key words: Sports, media, social networks.

Introduction

The Internet, which was introduced into people's lives within the last 20 years, has changed the mass communication media radically. As Internet has become widespread, personal and institutional web pages (Web 1.0) have shared the effectiveness of classical mass media tools such as newspaper and television. However, social media, which are called Web 2.0 applications, emerged at the early 2000s and have become an alternative to classical media by spreading rapidly. Social media are a rising phenomenon and can be defined as "relating to the sharing of information, experiences and perspectives through community-oriented websites". Thanks to social media, the geographic walls that divide individuals are crumbling, and new online communities are emerging and growing (T.,Weinburg, 2009.).

Social media are a part of what is referred to as Web 2.0. Web 1.0, followed by Web 2.0, was characterized as mostly a one-way communication system. On Web 1.0, a person or company would generate a website and expect the target people to visit the website. Internet sites would offer a limited setting to create and spread a distinctive content personally. Today, the number of people having personal website is quite low. The new Web 2.0 has largely changed the communications medium. In the new media setting, users generate their own content and spread easily

[1]Sport and Physical Education High School, Abant İzzet Baysal University, Bolu, TURKEY
Email: selamio@gmail.com
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at very low costs. Thus, everyone has a voice in the new media setting. Some examples of social media include blogs, forums, message boards, picture- and video- sharing sites, user-generated sites, wikis and podcast. Each of these tools helps facilitate communication about ideas that users are passionate about, and connects like-minded individuals throughout the world (T.,Weinburg, 2009.).

When the expanding process of social media is observed, it is understood that it has grown fast, incomparable to the classical mass communication tools. While radio reached 50 million users after 38 years, TV reached this number of users in 13 years. However, Facebook accrued 100 million users in the first nine months (P. Steinbach, 2009.).

Upon strengthening of the Internet infrastructure and use of mobile tools, opportunities to access social media have diversified. Social media have become more than settings accessed through only desktop or laptop computers. Thanks to the developing information technologies today, access to social media through mobile phones, television and other similar devices has become possible. Mobile phone companies in many countries provide free access to social networks. There are more than 200 million active users currently accessing Facebook through their mobile devices (facebook.com/press). A research conducted by the research company Forrester Research has revealed that the young people in the USA spend most of their time on social networks. According to this research, 51% of the ones at the age of 12-17 and 70% of the ones at the age of 17-22 are active users of social networks (koniks.com, accessed February 2011). In another research carried out on college students in Canada, participants reported spending an average of 38.86 minutes on Facebook each day and had between 25 and 1000 Facebook friends (E., Christofides, A., Muise, Desmarais 2009.).

79.6% (17,762) of the Internet users in Turkey use social networking sites. The social network most frequently used by the Internet users is Facebook at a rate of 72.4% (12,770) (comscore.com, 2009). According to a research carried out on college students in Turkey, 70% of the students have Facebook membership. 28% of the Facebook users visit the site once a day while 17% of the users visit the site more than once a day. In each visit to Facebook, 52% of the users spend less than one hour while 39% spend 1-2 hours (G., Göker, M. Demir, & A., Doğan, 2010.).

Use of social networks for sportive reasons

Sports events, the most attractive subject for people, have become accessible through new generation media as well as the classical settings. Social networks such as Facebook and Twitter, which are spreading day by day, are the most commonly used media for disseminating sports-related news. The reports show that the online sport demographic is one that is growing at a very fast rate. The people watching sports online are typically people with large disposable incomes (K., Knight, 2007). Many sports organizations also use online marketing methods to increase their income. Use of social networks in sports sector for marketing reasons is also becoming common. 51% of active Twitter users follow companies, brands or products on social Networks in USA (Edison Research, 2010).

The effects of social networking sites in advertising the sports activities were researched as a case study in a marathon in USA. The program and promotion of 2009 Cincinnati Flying Pig Marathon was made through favorite social networks such as Facebook, Twitter and Youtube and thus the awareness of this organization by a large mass was increased at almost zero cost. The marathon gained popularity and the interest in the organization was much more than that in the previous years. Several big companies offered sponsorship for the next years' organization (R.,Schoenstedt, 2010.).

Interactive features of the social media ensure a close connection between the athletes and their fans. The celebrities use social media to establish a direct connection with their fans on Internet. An analysis was carried out in which the contents of the broadcast in the traditional media and social networking sites were compared after a car accident that caused the famous American golf player Tiger Woods a heavy injury. After the accident, Tiger Woods had to disclose his extramarital affairs and got divorced. The analysis suggests that social-media sites are valuable public relations tools that athletes can use to quickly generate support that counteracts perceived negative media framing. Social-media sites also enable fans to enhance perceptions of closeness with athletes as fans interject themselves into athletes' media narratives (J.,Sanderson, 2010,).

Facebook

Facebook, which is one the largest social networks in the world, has more than 500 million active users. Facebook was founded in 2004 by a Harvard undergraduate named Mark Zuckerberg. The site was limited to Harvard students in its first month but quickly expanded in response to growing popularity. By the end of 2005, the site had expanded to over 2,000 colleges and 25,000 high schools (P.,Sakuma, 2007). The Facebook is a social networking site that allows users to create their own virtual profile for the world to see. Users express themselves by putting up their picture, giving basic biographical information, and writing down their interests. Once a user has created their own page, they can interact with other members by visiting their pages and "friending" them. Adding someone as a friend gives a user access to that person's profile and enables them to interact with them using a variety of applications. The followings are some of the most common applications available to Facebook members.

Facebook site includes an "info" section with descriptive data about the page subject, a section where discussion forums can be created, and a section where photographs and videos can be uploaded, and the page can be linked to other social media channels and Web sites. All pages are configured with a "wall", a Facebook feature that allows both page creators and Facebook users to write commentary about the page subject, to which other Facebook users can respond. Facebook users also have the ability to indicate that they "like" the page, and when this action is taken, this decision is broadcast to all the user's Facebook friends. In addition, Facebook provides page creators with data that record how many people each day "like" the page, the number of daily postings on the page, and the number of daily and monthly active users (J.,Sanderson, 2008.).

According to Facebook's data, users spend 700 billion minutes each month on Facebook. There are over 900 million objects that people interact with (pages, groups, events and community pages) and more than 30 billion pieces of content (web links, news stories, blog posts, notes, photo albums, etc.) shared each month. Facebook is used by being translated into 70 languages in the world. 70% of the Facebook users are outside the United States of America (facebook.com, accesed March 2010). One of the most common reasons for using Facebook was to find a friend when it was founded. A research analyzing the aims of using social networks such as Facebook in high schools revealed that social networks were used mainly to contact with friends and relatives. According to the research, common social network activities included posting photos both for distribution and archival purposes; broadcasting information about social gatherings and sports events; gathering background information about new friends and casual acquaintances; and making contact with lost friends and physically distant acquaintances (D. Agosto, & J. Abbas, 2010). According to the researches, other main objectives of use of Facebook are as follows: Monitor and audit, video, picture, music and opinion sharing, playing games, organization, politics, e-trading, sexual, and notifications (J.,Sanderson, 2010.).

In their very short history, social media have had a profound effect on sport, as many leagues, teams, and athletes have embraced these platforms as a way to talk directly about their lives without having their messages filtered by any marketing or public relations figures.

Framing athletes register for a Facebook account; he or she can create "official" Facebook pages for businesses, brands, products, organizations, artists, bands, or public figures. Facebook requires creators to denote that they are legitimately affiliated with the entity and are authorized to create an official page. These pages mimic a standard Web page, and users have a number of configuration options available to help them design the page. Social networking sites are used in sports marketing as in other marketing fields. It is stated that the unsold 500 tickets for the football match of the Utah University team in 2008 were sold on Facebook. The authorities contacting 15 thousand fans on Facebook as well as classical press bulletins sold the tickets in a very short period of time. Lessiter, Assistant Sport Director of Utah, said for the usage of social networks: "Press releases are still a very important part of what we do in terms of getting information out, but we realized that in Facebook, Twitter and other social media, we had really powerful ways of getting the word out and letting others spread the word." (P.,Steinbach, 2010.).

In a research carried out on Facebook (sportintelligence, 2007), it was found that the number of fans of the official Facebook sites of famous sport clubs reached millions. According to this research, Turkish club Galatasaray ranked the first with 4.1 million followers, Barcelona ranked the second (3.4 million) and Fenerbahçe ranked the third (2.8 million) in the most popular sports club ranking, having an official account on Facebook in 2007. The ranking for the other sports clubs was as follows: Real Madrid Spain the fourth (2.7 million), LA Lakers USA the fifth (2.3 million), Liverpool UK the sixth (1.9 million), NY Yankees USA the seventh (1.8 million), Beşiktaş Turkey the eighth (1.5 million), Boston Red Sox USA the ninth (1.3 million), Manchester United UK the tenth (1.26 million) . In an interview published in Sports Intelligence, Ebubekir Kaplan, in charge of marketing and social media of Galatasaray club, answered the question "Why are social networks, especially Facebook, valuable to Galatasaray?" as follows:

We have a lot of fans but only a tiny number of them, relatively, can be in our stadium at the same time. However, all the fans want to meet, both with each other and to stay in touch with the club. Social networking allows this to happen. In Turkey, about 30 percent of the country's total population is using Facebook, and about 19m adults. The rate of users aged 18 to 44 is 74 percent. Turkey is globally the fourth most active country on Facebook, and we can reach out to our fans via Facebook. Players come and go, managers come and go, club officials come and go, but fans are constant; they're the most important people.As in Galatasaray case, many sport clubs in Turkey use social networks to contact their fans.

Twitter

Twitter is perhaps one of the most popular social networking and communication technologies at the present time. It allows individuals to create "microblogs" where in they can construct and distribute communicative messages to other. User accounts are linked to a user name preceded by the @ symbol, and messages, or "tweets", are limited to 140 characters per message. People become connected to others by choosing to follow other users. Each tweet that a person sends is transmitted to each of his or her followers, who can respond by sending a tweet of their own. With the 140 character limit, tweets rely largely on abbreviations. Twitter has become increasingly popular with celebrities, journalist, and sports personalities (J.W. Kassing and J. Sanderson, 2010.). Based on its characteristics, Twitter is often referred to as a microblogging service. Microblogging can best be described as a derivative of blogging, which involves the transfer of news, personal opinion, and ideas in an online setting. Whereas blogging typically involves a dedicated Web site with a main-page focus on expansive content produced by an individual or small group. Twitter uses a much less media-rich interface, where the primary focus is on short bursts of content from a large number of users (G. Clavio and T.M. Kian, 2010). Although Twitter was introduced after Facebook, it has grown rapidly. While Twitter had 1.22 million visitors in April 2008, it reached 17.10 billion visitors in April 2009 with an increase of 1298%. On the other hand, while Facebook had 22.48 million visitors in April 2008, it reached 71.29 million visitors with an increase of 217% (Johnson, 2009). Only 5% of the population in the USA was informed about Twitter in 2008 but the rate increased to 87% in 2010. It was found that 17 million people have an account on Twitter in the USA. While the rate of Twitter users was 7%, the rate of Facebook users was 41% in the USA (Edison Research, 2010).

According to the data published by Twitter in 2011, the fifth anniversary of its foundation, nearly 1 billion tweets are sent weekly. It took 3 years, 2 months and 1 day to reach 1 billion messages sent since its foundation. In March 2010, the users sent approximately 50 million messages in a day. In March 2011, the number of tweets sent in a day reached 140 million. Nearly 460,000 new accounts are opened in a day on Twitter. The number of Twitter users on mobile phones increased by 182%

compared to the one in 2010 (twitter release, accessed March 2011). Nearly two third of 17 million Twitter users in the USA access social networks through mobile phones (Edison Research, 2010).

Social media and Web 2.0 have also transformed the interaction between sport fans and their sport heroes. In Web 1.0, fans could visit a team, league, or athlete Web site and peruse the content posted on the site. The only interaction available to them was through e-mail or, if the Web site had one, a message board.

With Web 2.0, the situation has changed. Teams, leagues, and athletes area embracing social media and using them to bring fans closer to the game (A. Pegoraro, 2010). The social-networking phenomenon of Twitter has made considerable inroads into the sport communication landscape since its introduction in 2006. One of the fastest growing Web 2.0 applications in the new-media marketplace, Twitter combines several unique aspects of communication, which makes it attractive to both sports fans and sport organizations (G.,Clavio and Kian, 2010.). Twitter has brought fans closer to their sport heroes because it allows athletes to communicate as openly and honestly as they wish without any third-party mediation.

Twitter offers a setting ensuring direct communication between fans, athletes, trainers and sports reporters. The NBA had accrued over 1.93 million followers on Twitter, with the NFL (1.63 million), the Los Angeles Lakers (1.56 million), and the Orlando Magic (1.01 million) also reaching seven figures in Twitter followers in June 2010.

Twitter accounts of many world-famous athletes have millions of followers. For example, Shaquille O'Neil basketball player for Boston Celtics has 3,5 million, Kaka in Real Madrid has 3 million, Cyclist Lance Armstrong 2,8 million, Skateboarder Tony Hawk 2,4 million, Christiano Ronaldo in Real Madrid 2 million, Tennis player Serena Williams 2 million, Dwight Howard basketball player for Orlando Magic 1.9 million, Chad OchaCinco Johnson in Cincinati Bengals 1.8 million, Skateboarder Ryan Sheckler 1,8 million, Paul Pierce in Boston Celtic has 1.8 million followers (tweeting-athletes, accessed March 2011).

Use of Twitter in sport communication has been a subject to several researches. These researches have examined the use of Twitter in sports media and the contents of the sports-related messages (Debatin et al. 2009, Sheffer & Schultz 2010a; Sheffer & Schultz 2010b; Sanderson 2010; Pegoraro 2010; Clavio & Kian 2010, Kassing & Sanderson 2010, Johnson 2010).

In a research on the effects of Twitter on sports journalism, it was found that sports journalists of different demographic structures perceived new technologies in different ways. Younger and broadcast journalists were more likely to see Twitter as having stand-alone value and use it in forward-thinking ways. Older and print journalists were more likely to use Twitter for traditional purposes such as promoting printed work on other platforms (Sheffer & Schultz, 2010a: 226). In a study which examined how sports journalists used Twitter for their profession, the journalists indicated that they used Twitter most often for breaking news, followed closely by promoting work on traditional media outlets, and then connecting with audiences. Sports journalists indicated that they seldom used Twitter to express their own personal opinion (M.L. Sheffer & B. Schultz, 2010b.).

Another research which examined the contents of Twitter messages of the athletes in USA revealed that the athletes post messages about their daily routines, weather, party reference, charity work and family life, professional training, traveling, game preparations, promoting products about their personal lives as well as other games in their league, college or minor-league games of the same sport and equipment about their sportive lives. The athletes also post messages about TV shows, movie, musician or group, actor or actress politician and famous landmark about pop culture (A.,Pegoraro, 2010.).

In a research which analyzed the followers of a retired female athlete, the followers indicated that they followed the athlete for her competency in her field the most. 89% of the 216 participants of the questionnaire stated that they visited the Twitter page at least once a day. The rate of the male participants stating that they followed the athlete because they found her physically attractive was found to be meaningfully more than the female participants did (Clavio & Kian, 2010: 492).

In a research which examined the use of Twitter by professional athletes to contact with their fans and other players, the tweets were gathered under six categories such as interactivity, diversion, information sharing, content, promotional, and fanship. Many of the tweets fell into the interactivity category (34%) (Hambrick et al., 2010: 454).

Facebook and Twitter both function as social networking services. However, Facebook as a social network is much flexible and versatile. You can upload pictures, videos, games, and apps to profile; embed videos from some sites; and post calendar events. Twitter, at first glance, only allows for text, more text, and even more text with links. Also, Twitter is a microblogging service while Facebook has many facets including a microblogging component.

A major difference between Facebook and Twitter emerges in their methods of communication. Facebook is meant to be more passive. In contrast, Twitter seems a much more active form of social communication in which the way you talk to people on the social network emerges as much conversational. Twitter has been linked to a giant party where you know no one but wish to make many friends. In contrast, Facebook would be a wedding reception filled with family and friends. When looking at these two tools, one issue comes up quite frequently the issue of privacy. Privacy seems paramount to the users of Facebook, but Twitter users tend to embrace the feeling that everything is public. Simply look at this difference in the two services: Facebook gives you friends, while Twitter gives you followers (C.,Taghmeier, 2010.).

Twitter in Turkey

Despite its fast growing graphic, Twitter has fallen behind Facebook in Turkey since it has no Turkish version. However, that many statesmen such as the President and Prime Minister, politicians and athletes generate profiles and their tweets come to the agenda of the media increases the attractiveness of this social network.

Many clubs, athletes, technical staff and managers in Turkey have been opening an account on Twitter recently and these accounts are followed by fans whose numbers increase day by day. Galatasaray and Trabzonspor, Sport Toto Super League clubs in football which is the most common sport in Turkey, are the two of these clubs. Trabzonspor announced the opening of its

official Twitter site in its official Internet site in May 2010 as follows:

"Our club which has fans all over the world has planned to contact with our fans in a wider and updated setting. Our fans will have the opportunity to broadcast on their personal websites the news through the links provided below the news in our official website" (Trabzonspor.org, accessed March, 2011).

It is known that some athletes have problems because of their tweets on Twitter. Galatasaray football player Colin Kazım - Richards had to face the reactions of the opponent fans because of his sarcastic tweets as "BJK, 8JK ha ha" before the Beşiktaş derby when he was a player in Fenerbahçe (Hurriyet, 2009). That Aykur Kocaman, Technical Director of Fenerbahçe, criticized Gökhan Gönül, football player at Fenerbahçe, for his discussion with the Galatasaray fans on Twitter, opened the door for a new discussion in Turkey. Upon this, the internet site of the Hürriyet newspaper introduced a questionnaire on **"**Should athletes use social networking sites, especially Twitter?". According to the results of the questionnaire, the most voted view was "Athletes should be on such websites but should not give wrong messages" (Hurriyet, 2011). Moreover, athletes sometimes had to face penalties for their statements on Twitter. Mark Cuban, the owner of the Dallas Mavericks, was fined $25,000 for criticizing the referees after a game on Twitter.

Twitter piracy

Some celebrities, including athletes, in Turkey face some difficulties due to the accounts opened in their names by others on social networking sites. Use of unreal news on these accounts by print and visual media leaves these celebrities in the lurch.

Showman Cem Yılmaz said for the accounts opened in his name: "People, who are suffering from the illness of opening an account for somebody else's name, which can be called as "electronic insanity", that I considered as the illness of the age, give statements and make announcements on behalf of me. I have no virtual account or initiative on popular networking sites of the Internet world (Facebook-Twitter)".

Emre Belözoğlu, football player at Fenerbahçe, and Arda Turan, football player at Galatasaray, are two of the football players having problems because of the Twitter accounts opened on behalf of them. Before his transfer to Fenerbahçe team, Emre Belözoğlu, had to declare that neither his wife nor he had membership to any social networks after the news on press as "He heralds transfer to Fenerbahçe fans through Twitter". Arda Turan also had to declare he had no membership to any social networks by stating that the media broadcasted news from the accounts which did not belong to him (sporyolu.com, 2010).

Purpose

The purpose of this research is to examine the use of Facebook and Twitter, two of the most favorite social networks, by fans in Turkey to follow the sports events.

The following hypotheses were tested in the research:

H1: Fans use Facebook, among social networks, for sportive reasons.

H2: Fans use Twitter, among social networks, for sportive reasons.

H3: Use of Facebook and Twitter by fans differs according to gender.

H4: Use of Facebook and Twitter by fans differs according to age groups.

H5: Use of Facebook and Twitter by fans differs according to level of income.

H6: Use of Facebook and Twitter by fans differs according to their physical exercise habits.

METHOD

620 students studying at Abant İzzet Baysal University and Sakarya University participated in the research. 460 participants who declared to be a fan of a sports club were the sample of the research.

A 5 Likert type data collection tool consisting of 21 questions was developed by the researcher in line with the literature survey and comments of two experts and user opinions. The data collection tool was applied to the students, who were randomly selected at School of Physical Education and Sports, Faculty of Arts and Science and Vocational School at the two universities in October 2010.

The obtained data, percentage values and independent samples were tested by the *t*-test and one-way variance analysis (ANOVA). The reliability coefficient was found to be α=.9151 in the reliability analysis of the 21 items.

21 questions in the data collection tool used in the research consisted of the subjects categorized under 3 main groups. The first group included questions about the participants' following Internet and blogs on Internet; the second included those about Facebook and the third included those about Twitter. Factor analysis was applied to the data collection tool and the 21 items were reduced to three factors. These factors validating the three question groups built at the beginning of the research were labeled as "Internet and blog use", "Facebook" and "Twitter". The three items obtained in the factor analysis explain 70.7% of the total variance. Kaiser-Meyer-Olkin measure of Sampling Adequacy 0.915 and Bartlett's Test of Sphericity were found to be meaningful at .000 level.

The interviews with the social networks users and the message sharing followed by the researcher on his Facebook and Twitter accounts were used as qualitative data supporting the findings.

FINDINGS

Personal Information

46.5% of 420 college student fans, the samples of the research, are female while 53.5% are male. 78.5% of the participants study at Abant İzzet Baysal University while 21.5% study at Sakarya University. 48.9% of the students study at School of Physical Education and Sport and the others study at different departments (27.4% at Faculty of Education, 14.1% at Bolu Vocational School and 9.6% at Faculty of Arts and Science). 35% of the participants are freshmen, 27.2% are sophomores, 20% are juniors and 17.8% are seniors.

According to their age ranges, 28.9% are between 17-19, 43.5% are between 20-22, 19.1% are between 23-25, and 8.5% are over or at the age of 26.

According to their families' level of monthly income, 13.5% of the participants have an income less than 600 TL (approx. $380), 40.4% between 601-1200 TL (approx. $ 380-$770), 29.8% between 1200-1800 TL (approx. $770-$1150), and 16.1% over 1801 TL (approx. $1150).

17.2% of the participants stated that they were active in sports while 82.8% stated they were not. 91.7% of the participants stated that they generated a profile on Facebook, 13.3% on Twitter, 8.5% on Myspace, and 0.9% on Friendfeed. 7.2% of the participants are not a member of any social networks.

Table 1 – The social networks on which the participants generated a profile

Site	Yes		No		Total	
	n	%	n	%	n	%
Facebook	422	91.7	38	8.3	460	100
Twitter	61	13.3	399	86.7	460	100
Myspace	39	8.5	421	91.5	460	100
Friendfeed	4	.9	456	99.1	460	100

Although the fans who participated in the research follow Facebook frequently (x=4.50), the average of the ones who stated that they followed Twitter was lower (x=1.38).

The average of the fans following sport news on Internet sites was high (x=4.05). The fans frequently follow the official profile of their favorite team on Facebook (x=3.45). The fans stated that they were informed about the sport activities through Facebook (x=3.33). The fans stated that they mostly learned on Facebook about the sport news they did not hear from other sources (x=3.31) (Table 2).

The fans also stated that they mostly shared the sport videos on Facebook (x=3.17). Video sharing is one of the most commonly used functions of Facebook. The fans post the goals shot in the matches on their Facebook profiles by giving links to video sharing sites like Youtube. It is observed that mostly the goal videos and interesting moments in matches are shared by the fans following the matches on Sport Toto Football Super League in Turkey.

After the league matches in football, the fans make comments on Facebook about the status of their favorite teams (x=2.99). Members share humorous messages with their team's fans or opponent fans after matches on Facebook, which is popular for giving opportunity to share opinions and ideas among members.

After the first derby match in Türk Telekom Arena, the newly built stadium of Galatasaray, where Fenerbahçe beat Galatasaray 2-1, Fenerbahçe fans posted various messages on their profiles. Some of them are as follows:

- A Galatasaray fan has the right to glory for 75 minutes the most... The remaining minutes are a bottle of rakı...

- Not again, even in this stadium. TOKI should build a new one so we can beat them there, too.

- 3D: Derby, Decibel, Drama

- 3D: Déja vu, Déja vu, Déja vu... Enough is enough.

- Fenerbahçe registered Türk Telekom Arena officially. Enjoy it!

- The stadium changes, the players change but the winner is the same.

The fans stated that they followed sport blogs on Internet sites less than they did on Facebook (x=3.00). They stated that they mostly followed their favorite athletes (x=1.28) and the official account of their favorite club (x=1.25) on Twitter, where the following rate is low (Table 2).

Table 1 – Use of Facebook and Twitter by the participants

ITEMS	Average
1. I follow Facebook.	4.50
2. I follow sport news on Internet.	4.05
3. I follow my favorite team's official website on Facebook.	3.45
4. I am informed about sport activities in my community through Facebook.	3.33
5. I am informed on Facebook about the news not available on other resources.	3.31
6. I share sport videos on Facebook.	3.17
7. I follow sport blogs on Internet.	3.00
8. I post a message on Facebook after my team wins.	2.99
9. I post comments on sport on Facebook.	2.52
10. I broadcast sport news on Internet sites through Facebook.	2.46
11. I make friends with athletes through Facebook	2.11
12. I make friends with other fans through Facebook.	2.07
13. I write blogs on sport sites on Internet.	1.98
14. I follow Twitter.	1.38
15. I follow my favorite athletes through Twitter.	1.28
16. I follow my favorite team's official site on Twitter.	1.25
17. I am informed through Twitter about the news not available on other resources.	1.25
18. I follow fan groups of my favorite team on Twitter.	1.23
19. I am informed about the sport activities in my community through Twitter.	1.23
20. I post sport tweets on Twitter.	1.22
21. I broadcast the sport news on Internet sites through Twitter.	1.19

Use of Facebook and Twitter by fans according to gender

The independent samples *t*-test carried out to find out the differences in use of social networking sites by fans according to gender revealed that male fans followed

social networks for sportive reasons more frequently than female fans did. As a result of the test, meaningful differences were found for the 12 items according to gender (p<.05).

Accordingly, men follow sport news (*t*=13.5, p<.05) and sport blogs (*t*=8.29, p<.05) more frequently. Male fans write blogs more on sport related Internet sites (*t*=6.80, p<.05). Male fans follow Facebook (*t*=4.95, p<.05) more frequently than female fans do. There was a meaningful difference (*t*=6.15, p<.05) in male fans in following the favorite team's official site on Facebook (*t*=6.17, p<.05) and sharing sport videos compared to female fans. It was found that male fans made friends with athletes (*t*=4.11, p<.05) and other fans (*t*=5.31, p<.05) through Facebook more than female fans did. Male fans were found to post more comments on sport (*t*=7.54, p<.05) and messages on Facebook after their favorite team won (*t*=4.15, p<.05). Through Facebook, male fans are more informed about the sport activities (*t*=4.17, p<.05). Male fans broadcast sport news on Internet sites through their Facebook accounts more than female fans do (*t*=4.73, p<.05).

Use of Facebook and Twitter by fans according to their physical exercise habits

Meaningful differences were found in the *t* test analysis made to analyze the use of social networks by the college student fans according to their physical exercise habits. According to the test results, fans who are active in physical exercises follow sports news (*t*=5.20, p<.05) and sports blogs (*t*=4.68, p<.05) and write blogs in sport sites (*t*=4.58, p<.05) more than the fans who are not. Also, the fans who do physical exercise make friends with athletes through Facebook (*t*=4.29, p<.05) more than the ones who do not.

Use of Facebook and Twitter by fans according to level of income

No meaningful difference was found in the One Way Variance Analysis (ANOVA) made on the four groups according to the variable of level of family income in use of social networks by the sample fans (p< 0.05).

Use of Facebook and Twitter by fans according to age groups

In the One Way Variance Analysis (ANOVA) made according to age groups in use of social networks by the sample fans, differences were found in the items of following sport news, following sport blogs and writing blogs.

The Tukey test made to define the groups having differences revealed that the fans at the 17-19 age group followed the sport news on Internet more frequently than the ones at the age groups 20-22, 23-25 and over 25 did F (3,455)=9.415, p<.05.

It was found that the 23-25 age group followed the sport blogs on Internet more frequently than the 17-19 age group did F (3,452)=3.372, p<.05.

The fans at the 23-25 age group write more blogs on sport sites than the ones at the 17-19 age group do F (3,447)=3.146, p<.05. It was also found that the 23-25 age group shared more sport videos on Internet than the 17-19 age group did F (3,454)=3.146, p<.05.

Discussion and conclusion

This research revealed that fans studying at a university in Turkey follow sport news frequently on Internet (x=4.05). Internet has reached a large number of users in Turkey as in the world. According to a measurement in April 2009, there are 17,762 million Internet users in Turkey. In terms of largest online population in Europe, Turkey was the seventh largest with 17,762 thousand million visitors while Germany's online audience was the largest with 40 million visitors, followed by the U.K. (36.820 million visitors), France (36.3 million visitors), Russia Federation (31,303), Italy (21,230) and Spain (18,636). Internet users in Turkey were also found to be the most engaged users in Europe, spending an average 32 hours and viewing an average 3,044 pages of content per month (comscore.com, 2009).

The fans in the research stated that they followed sport news on Facebook as frequently as they followed the sport news on Internet. According to the data obtained, 91.7% of the participants followed Facebook, the most common social networking site in Turkey. This rate is higher than the one measured in another research examining the prevalence of Facebook. According to another research on college students in Turkey, 70% of the participants have a Facebook membership (Göker et al., 2010: 192).

The necessity to access new media through only computer has disappeared thanks to technological innovations such as 3G and 4G. Today, easy access to social networking sites has become possible through mobile phones and palmtop computers (PDA) which are commonly used, which ensured access of fans to news about sport events and match scores regardless of time and place. New media are preferred more due to their low cost. That GSM operators, providing mobile communication service in Turkey, ensure free access to social networks, although limited, is one of the reasons for the increase in prevalence.

In this research, the participants stated that they mostly shared sport videos on Facebook (x=3.17). One of the reasons for use of social networks for sportive reasons is that they give opportunity to follow instantly changing circumstances such as goals in a match and scores. The users also have the opportunity to watch the videos as much as and when they like.

In the research, the rate of following Twitter was found to be lower than that of Facebook (% 13.3). In a research conducted in the USA in 2010, the awareness rate of Twitter (87%) and Facebook (88%) was found to be equal. Still, Twitter has 17 million users in the USA and the rate of this number to the population is 7%. On the other hand, the rate of Facebook users in the USA is 41% (Edison Research, 2010). In another research in the USA (Clavio & Kian, 2010: 492), 89% of the participants stated that they visited their Twitter page at least once a day. Low level of use of Twitter in Turkey, which is a common social networking site in the world, can be related to nonexistence of the Turkish version of the site.

Social media, such as Facebook and Twitter, are also effectively used by sport journalists. This fact is supported by many academic studies (Sheffer & Schultz, 2010b: 472). News resources of the media such as clubs, managers and athletes have started to release statements through social media. Fans have the opportunity to learn the events at the same time as the sport journalists by following the social media they follow. Thus, the rate of following new media increases. It may be envisaged that the effectiveness of traditional mass media tools will go down and the classical media failing to renew themselves will fall behind in the race in the future.

This study carried out on the fans studying at a university revealed that there were meaningful differences in status of following sport events on social networks by

the participants in terms of their gender, age, physical exercise habits and level of income ($p<.05$).

It was found that male fans followed social networks for sportive communication more frequently than female fans did, according to distribution by gender. The obtained data are parallel to the results of the study carried out in the USA. According to the results of the research conducted by Nielsen / NetRatings Net Wiew 58.18% of the online sport audiences are male while 41.82% are female (Loechner, 2007). That men follow sports more than women do in Turkey can be explained by the fact that the most popular sport is football and football is mostly followed by men.

Although there is almost an equal distribution among the groups considering the level of family income of the participants, no difference was observed in use of social networks, which results in the fact that social networks are used at the same frequency whatever the level of income is. Moreover, free access to social networks provided by GSM operators, which offer mobile communication service in Turkey, is one of the reasons for the increase in prevalence.

It was found that the fans were informed about the sport activities in their community through Facebook and learnt news on facebook which are not available on other resources. As in many countries in the world, the media mainly release football news in Turkey. Branches other than football and local amateur sport activities are not commonly broadcasted on mass media. For this reason, sport fans share events about amateur branches on new media settings such as social networks. Thus, sports news which is not given in classical media like newspaper and television is circulated on social networks. It is observed that national or local sport activity organizers open pages on Facebook to announce many local and national sport activities. Announcement of local organizations, particularly with minor target group, through social networks is becoming common.

In the analysis made according to the ages of the participants, no meaningful difference was found in the use of Facebook and Twitter. There was difference only in the items of following sport news on Internet, following sport blogs and blog writing. Despite the fact that the sample college students were at a narrow age range, it is possible to say that this generation, that can also be called young, use social networks regardless of age.

In conclusion, sport news reaches the target group through not only traditional mass communication tools like newspaper and television but also internet-based new media today. Sports fans using communication technologies now learn the sportive events such as match scores, statements of athletes and managers through new media that are more practical, cheaper and faster. It is possible to say that social networks are more commonly becoming an alternative to classical information obtaining methods for the fans. The research revealed that the fans, the sample of the research, followed Facebook, one of the social networking sites, and this site played an effective role in transmitting sport news. However, the fact that the sample of the research consisted of college students, whose aptness to and interest in communication technologies were expected to be high, must be taken into consideration when interpreting the results.

Recommendations

This research may be repeated on fans at different educational and socio-economic levels. This research may also be repeated for other social networking sites. Likewise, the use of social networking sites by athletes may be explored.

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PERFORMANCE MANAGEMENT IN THE INSTITUTION OF PHYSICAL EDUCATION AND SPORTS - THE OBJECTIVES FOR THE FOUNDATION OF THE DOCTORAL THESIS

SIMION GABRIEL[1], TURCU IOAN[1]

Abstract

The path followed by this thesis covers succinctly the majority of the concepts and components of the performance management in the institutions of physical education and sports – brought to light by the greatest specialists in this field – from a new perspective of the modern organization management and knowledge based on society. Our research is based on an exploratory-descriptive investigation which serves our goal the most and allows the gathering of information from significant groups from the point of view of their contribution to identifying the problems and the solutions from the field of physical education and sports.

Hypotheses:

1. The subgroups of the research batch offer diverse information from the point of view of the problematic and solutions in the field of physical education and sports.
2. By processing the information we observe a large number of statements regarding the things that are not functional and a smaller number regarding the possible solutions.
3. Regarding the managerial solutions in the field of physical education and sports we observe mainly theoretical explanations in the detriment of practical solutions.
4. The collection of data offers per ensemble valuable and original literature for the extraction of viable solutions in the problematic of physical education and sports.

General objectives:

The research goal is to integrate the institutions of physical education and sports in the economic-social structure of the country in the context of the European integration and the internationalization of the organizations.

The main objective of the research is to identify the present problems in the field of physical education and sports and to find possible solutions to get over them.

Specific objectives:

- Positioning the institutions of physical education and sports in the gear of the Romanian society.
- The role of the management in the contemporary world and its impact on the management of the institutions for physical education and sports.
- Predictable mutations in the contemporary world and their impact on the management of the institutions for physical education and sports: the necessary assimilation and adaptation to change.
- Elements of the general management involved in the management of the institutions for physical education and sports and their impact on creating a new segment of management.
- The economical, organizational and managerial impact based on knowledge in the management of the institutions for physical education and sports.
- The concept of performance in the activity of physical education and sports and its role in the contemporary world.

[1]Faculty of Physical Education and Montain Sports, Transilvania University of Braşov, ROMANIA
Email: simiongabriel77@yahoo.com
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- The specificity of the management for the sports performance and its role for completing the mission of the institutions of physical education and sports.
- The material resources of in the institutions physical education and sports and the role of the financial management in the acquiring and administering these funds.
- The systemic approach of the activity of physical education and sports in the general context of education and civilization.
- The necessity for editing a manual and producing a specialty like the management physical education and sports.

All these opinions form a large spectrum, but we made a selection of four categories of respondents implied in one way or another in the theme of the thesis.

Key words: physical education, sports, management, manager, performance.

Introduction

More than 20 years ago under the name of informational society the real flux of goods and services started to be replaced by the flux of information with the help of virtual economy. Nowadays this economy appears under the name of *society of knowledge* having the continuous improvement of the human part as main factor in the progress of humanity.

As it is presented in the UNESCO report ”Higher Education in a Learning Society” we can say that ”the societies formed in the present and in the near future become more and more *societies of knowledge and learning*. Production, transmition and application of knowledge in any domain of activity are means of raising the productivity. At the same time, if there is no continuous learning, the personal adaptability or the individual way of living become of poor quality in content and performance, and the quality of life decreases in terms of economic standards, of diversity and profoundness of actions or cultural experience.

The intelligence based on knowledge and professional competence which is analyzed through the assimilation of new abilities and knowledge indicates a personal life of high quality capable to contribute to the development of national and local community.”

In this society of knowledge and learning we observe that the world’s leading orientation is the performance. The performance really and highly evaluates all kinds of resources, being the most efficient and certain way in achieving this goal.

The performance is the object and the subject of the management and therefore we are witnessing a fundamental interest of the management towards the performance.

Performance is the starting point for competitiveness and therefore the performance must become the basic philosophy for the modern organization and for its management.

Although semantically the performance is widely accepted and utilized, from a practical and theoretical point of view the concept is poorly defined and has major consequences on multiple levels.

The performance is accepted in general as a complex and dynamic manifestation of exceptional execution of human work and management whose finality is the progress, the efficiency and efficacy, the prosperity and satisfaction.

Therefore it can only result from a performant management. I dedicated two distinct chapters of my thesis to the performance and performance management and I analyzed them from an economical point of view as well as from the point of view of the physical education and sports *The Concept of Performance in the Activity of Physical Education and Sports* and *Performance Management and its Specificity in the Activity of Physical Education and Sports*).

The fundamental characteristic of the performance remains in any case the fact that it regularly causes *a change* for the better.

This approach gives shape to the conceptual part of the doctor thesis entitled *Performance Management in the Institution of Physical Education and Sports,* realized in the context of the predictable mutations of the 21st century change, globalization, economy, organization and management based on knowledge), based on a vast selective scientific research and its afferent conclusions which together build a quarter of the economy of the thesis.

All these mutations have still not been clarified, not only conceptually but more so operationally, especially the knowledge capital the intellectual capital) which represents the essence of these mutations.

Thinking of Peter Drucker who said that the only certitude for the future is that it will take place in waters more turbid than the present ones, I considered it necessary to present the new orientation of the modern management towards the phenomenon of change both as an opportunity and as a threat for the sports organization of the future. Therefore it is necessary to quickly identify the transformations of the society and economy at all levels in order to have the certain opportunity of survival as well as of a long term development. Under these circumstances the main task of the management is to help the necessary organizational culture to get over crises, to adapt to sudden

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changes, but also to exploit new opportunities in order to raise its value.

Analyzing these issues while the "hazard" leaves its mark on the nature of things and apparently the "chaos" rules, when a socio-economic structure "jumps" on a new step of complexity, we can firmly say that civilization has arrived- one that is based on knowledge and brings a new way of life consisting of: diverse resources, interchangeable and relatively easy to replace; production methods which replace the actual obsolete fabrication systems; training systems based on individual virtues and capacities versus the one based on the group. This *change* to the post-capitalistic society leads to a vast analyses of the performance field in the whole front of scientific research.

The Performance Management in the Institution of Physical Education and Sports will be generally based on the intangible intellectual resources and on the knowledge capital. On account of the importance of the predictable mutations of this century I will try to emphasize in a distinct chapter a series of defining elements of these mutations *Elements of the general management involved in the management for the activities of physical education and sports in the context of change, globalization, economy, organization and management based on knowledge- chapter 3*), but also changing the nature and type of creation of the value in the company based on knowledge.

The modern organization is predicted to be a type of organization which will have a major impact on all its resources in general and on the knowledge resources in particular. In the new society, that continuously grows, the valuable creation remains the primordial objective to motivate the organizations on their path to performances on all hierarchic levels.

The phenomenon of globalization has a great influence on the educational field, especially in the eastern European countries, where from the integration perspective the educational system finds itself in a permanent reorganization.

Starting from this idea the first chapter is therefore dedicated to *the specificities of the institutions of physical education and sports and to its impact on the management.*

The sports institution is the type of human organization which trains and forms athletes for their participation to the national and international competitive system.

The activities of the sports units take numerous forms depending on the level of the material development, the concentration level of the activity, the level of the scientific activity, the nature of the property, the national specificity and last but not least on the professional capacity and competence of the field specialists.

The sports unit can be compared to a complex organism where the combination of the organizational factors is based on certain rules of practical instruction, scientific research, work, capital, which lead to performances necessary for its existence.

The characteristics of the system of physical education and sports rise from the social-political ensemble of life, but also from the economic, scientific and cultural life of our people:

a) Based on a scientific development the phenomenon of practicing physical exercises with all its manifestations imposes its circumscription in the area of aspiration and motivation of the human being. I. Abrudan, 1996)

The system of physical education is a reflection of the specific phenomenon among numerous interfaces and the science of physical education and sports.

b) Our system has a series of open and dynamic organizational characteristics and features which lead to the "spiral" form and a never ending ascendant path in a perpetual progress.

c) The Romanian system of physical education and sports has a strong national character, is part of the human condition of our society and creatively emphasizes some traditions like revitalizing our national sports, "oina" and "trânta"). It represents a cultural act and has an essential contribution to maintaining and strengthening our health, to the growth of the physical and intellectual capacity, the profitable use of spare time, the harmonic physical and moral growth of the population.

d) The components of the subsystem have the capacity of regulation and auto-regulation on both the level of the "whole" and of the "parts". They fight continuously against desynchronization, against entropic random actions realizing a reciprocal relation on one hand and with the whole system on the other hand.

The actual state of the physical education and sports can be debated from all points of view, but the solutions offer a larger spectrum of debates. We can only find opinions without any connection to the Romanian or global realities and needs.

In order to offer a milder view upon the situation the second chapter *Physical Education and Sports as Activity of Education, Health and Civic Activity*) analyses from a theoretical point of view the importance of the physical education and sports in the Romanian economy and society. The physical education and sports carry out diverse missions: educational, social, psychological, economical, of health and of image.

It is wrong to analyze sports only from the point of view of performance and competition, because sports are also practiced in order to prevent health problems, to relax and to build social relationships.

Sports are extremely interesting for applied sciences. It can offer new jobs, for the fact that in this field competence and creativity can lead to performance results. The sportive performance is the consequence of individual training of the sportsman) assisted by an interdisciplinary team.

The motivational component is essential for the sportive performance and its management. A new type of management needs to be introduced - a motivational one. Therefore the major goal for the future managers must be the motivational management oriented towards performance. Following this path the managers' performance is to bring people to work with them and for them.

Under the present circumstances of a society based on knowledge the management of any modern organization which has as major goal achieving performance needs to acknowledge the major implications of the motives of the employees, of the creativity and innovation, of raising the standard of quality, ethics in business and social responsibilities towards the creation of long-term values on a organizational level, even if it is a sportive one. All these are the base of the chapter *The Motivational Component in the Sportive Performance and its Management.*

Although the majority of the specialists say that the following two are not part of the concept of physical education and sports- *the material resources* halls, stadiums, gear, materials etc.) and *the economical-financial management* governmental subventions, local budget funds, sponsorship, honoraries, leasing etc.)- they are indispensable components which complete the concept of physical education and sports.

The financial capital is one of the most important strategic resources for the sports organizations, whereas the capability to acquire, integrate, stock, spread and apply helps the organization to create value and acquire competitive advantage.

This is the reason why the chapter *The Financial Management in the Activity of Physical Education and Sports* follows right after the chapter *The Material Resources of the Activity of Physical Education and Sports.*

Therefore the performance management in the institutions of physical education and sports will take diverse dimensions insisting upon monitoring the acquirement and application of the financial capital which has a great influence on the value of the sports organization.

As a result the concept of financial management represents a quarter of the thesis including its functions, the material resources of the activity of physical education and sports, the management of the acquirement and application of the resources or financing the sports activity depending on the organizational structures and the management.

Taking into consideration the mutations generated in the whole society but mostly in the institutions of physical education and sports the educational and civilization role has grown impressively generating an impulse for us to dedicate two chapters to this phenomenon *The Activity of physical education and sports – through education towards civilization and performance* and *The Process from Bologna*).

In this context we presented the Romanian system of physical education and sports, the present situation and the demand for modernization, its relationship with the educational system and the research. We can not leave out the Bologna Declaration and the new demand regarding the training of the specialists for the activity of physical education and sports. As a result the education in general and the physical education and sports in particular take up 20% of the economy in this doctor thesis.

The last part of the thesis consists of selective scientific research which leads from a practical point of view to the substantiation of certain aspects treated along the thesis from a theoretical-methodological point of view. I. Bogdan, 2006)

Because of a mixture of interdisciplinary approaches a miscellaneous research methodology was necessary in regard to: the study of a general and a special bibliography concerning the theoretical and practical state necessary for the elaboration of a thesis founded scientifically; referring to the bi-dimensional and/or tri-dimensional – past, present, future – while elaborating concepts and phenomena from the general to the particular or from the particular to the general; the questionnaire method for the elaboration of a selective scientific research.

Our research is based on an exploratory-descriptive investigation which serves our goal the most and allows the gathering of information from significant groups from the point of view of their contribution to identifying the problems and the solutions from the field of physical education and sports. M. Herciu, 2005)

Before initiating any research we must determine a set of presumptions which in the end will be proved right or wrong. We get started from the following **hypotheses**:

1. The subgroups of the research batch offer diverse information from the point of view of the

problematic and solutions in the field of physical education and sports.

2. By processing the information we observe a large number of statements regarding the things that are not functional and a smaller number regarding the possible solutions.

3. Regarding the managerial solutions in the field of physical education and sports we observe mainly theoretical explanations in the detriment of practical solutions.

4. The collection of data offers per ensemble valuable and original literature for the extraction of viable solutions in the problematic of physical education and sports. I. Bogdan, 2007)

The motives for choosing the theme for the thesis entitled *Performance Management in the Institution of Physical Education and Sports* are:

- I am working in this field; I am lector at the Faculty for Physical Education and Sports of the University *Transilvania* Braşov, assistant chief at the Department for Theoretical Disciplines and Collective Sports;

- the sports activity has a deep managerial character anywhere and no matter how it is being practiced;

- the management plays an important role in the contemporary world;

- the activity of physical education and sports is reevaluated on a governmental and institutional level, and under the circumstances of a deep study one can find the possibilities for a managerial promotion on the steps of the hierarchy.

The research goal is to integrate the institutions of physical education and sports in the economic-social structure of the country in the context of the European integration and the internationalization of the organizations.

The main objective of the research is ***to identify the present problems in the field of physical education and sports and to find possible solutions to get over them.***

Starting from the unity trough diversity the four subgroups of participants beneficiaries of the sports activity, professors, managers and postgraduates in the management) all bring complementary information which will outline a whole on two different levels:

- problematic
- solutions

In order to achieve the goals and general objectives of this thesis we set a number of specific objectives resuming the opinions of the questioned regarding the following aspects:

1. Positioning the institutions of physical education and sports in the gear of the Romanian society.
2. The role of the management in the contemporary world and its impact on the management of the institutions for physical education and sports.
3. Predictable mutations in the contemporary world and their impact on the management of the institutions for physical education and sports: the necessary assimilation and adaptation to change.
4. Elements of the general management involved in the management of the institutions for physical education and sports and their impact on creating a new segment of management.
5. The economical, organizational and managerial impact based on knowledge in the management of the institutions for physical education and sports.
6. The concept of performance in the activity of physical education and sports and its role in the contemporary world.
7. The specificity of the management for the sports performance and its role for completing the mission of the institutions of physical education and sports.
8. The material resources of in the institutions physical education and sports and the role of the financial management in the acquiring and administering these funds.
9. The systemic approach of the activity of physical education and sports in the general context of education and civilization.
10. The necessity for editing a manual and producing a specialty like the management physical education and sports.

All these opinions form a large spectrum, but we made a selection of four categories of respondents implied in one way or another in the theme of the thesis. I. Lador, 2000)

The first group of respondents, the beneficiaries, solves the problem situations on a pragmatic level by anchoring the state of things from the field of physical education and sports to the reality without passing them through the filter of experience in this specialty. They will offer great value to the research because change is very important at this level. Their opinion counts.

We are asking from the second group of respondents, from the educational system, to operate the problem situations and to solve them practically with the person as the beneficiary.

The third group, the managers, is expected to offer solutions by respecting the equation costs-benefits referring to the modalities of modernization. They aim for the investment system.

The fourth group, the postgraduates in the field of the management, who show a large spectrum of interests and preoccupations and who use the newest sources of theoretical and practical

accumulation of material, will offer dynamic point of views and interactive visions. I.Turcu, 2007)

The results of this research stand as reference point not only for the institutions involved in the analyses but also for all factors involved or interested in this problematic who believe that it is important to offer professional education to the people involved in the activity of physical education and sports and those who practice the performance management in these type of institutions.

All these objectives are the foundation of the doctor thesis entitled *Performance Management in the Institution of Physical Education and Sports,* which is built on the consultation of a vast biography part of which, 60%, were edited after the year 2000.

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❖ SPORT AND HEALTH

BODYBUILDING-FITNESS INFORMATISATION HALLS WITH eFit APPLICATION

HERLO JULIEN NARCIS[1]

Abstract
Purpose. To develop a monitoring computer software programs bodybuilding and fitness. The eFit software, also monitors somatic-functional indicators.
Methods: bibliographic method, experimental method, statistical and mathematical observation, history method.
Results. Currently software is being tested.
Key words: digitization, workouts, fitness, bodybuilders, eFit

Introduction

This paper proposes the development of computer software in order to monitor specific training programs for fitness and bodybuilding.

eFit software will also monitor, morphological and functional indices such as body mass index, the elasticity of the chest, chest area, abdominal area, perimeter arm, leg area, blood pressure, heart rate, pre-exercise, intra-and post exercise-effort, body weight.

Doing a comparative study between an existing software worldwide and eFit I noticed that there are many similarities, but none of the software does not contain all particulars of eFit. There are a variety of computer programs worldwide such as: Bodyfitdb, Crosstrainer, Weightmania, Freetrainers, Fitness Assistant Bodytrans, which monitors the training program, the necessary calorie per day diet plan etc.

In Romania, we identified two particular software, Brilsports ID and Wellness Gate. Even if the software applicable to the sport, their basic feature is the orientation of the sports complex manage, manage stocks of existing products, controlling the flow of people within a sports center, counting the number of persons in various areas of the sports center, customers on the photo identification, development of statistics, etc.

In this context, Romania, the only solution eFit system computerization programs of fitness / bodybuilding, and monitoring of morphological and functional indicators of the subjects involved in research.

For optimal performance of the project we considered as binding as some preliminary activities:

- theoretical documentation to develop training programs and adjusting them to the optimal time;

- implement software, hardware and testing equipment optimal configuration of the computer

[1]"Vasile Goldis" Western University Arad, Faculty of Physical Training and Sport, ROMANIA
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system

- connecting to the system of monitoring devices morphological and functional indices and testing their interfaces

- making an initial training, with Panoramic Gym staff and with potential subjects

- conduct preliminary measurements and determination of morpho-functional indices to test equipment used.

The main project objective is development information software eFit. This objective is an inventory of activities related to specific software available on the national and international research literature in computer science, methodology of fitness and bodybuilding training, ergophysiology, somatometers etc., purchase of equipment, measuring instruments and monitoring.

The secondary objective of the research consists of developing and implementing strategy in the program eFit bodybuilding fitness room Panoramic Gym in Arad. In this respect we need the following related activities:

- selecting a representative sample for the project

- initial testing of the subjects involved in research

- developing individualized training programs, the level of physical training which is at the initial, intermediate, advanced)

- adaptation of the training process to the individual needs of the moment

- permanent feedback to the athlete's / student by providing it, in automated, at fixed intervals of time, its individual sheet e-mail)

- ongoing monitoring of morphological indices body mass index, elasticity, chest perimeter segmentation) and functional blood pressure and heart rate

There are many areas of software application solutions in the field of physical education and sport.

From information gathered in the documentation, note that internationally there are many software software solutions applicable in the bodybuilding, fitness area, among which:

- BODYFITdb

This software analyzes:

• diet;

• caloric needs;

• weight and body composition lean body mass and adipose tissue);

• blood pressure, heart rate and cholesterol levels;

• aerobic capacity.

http://www.bodyfitdb.com/

- CROSSTRAINER

Crosstrainer Software helps create food diaries, journals, training and management's wellness. Crosstrainer is designed to help fitness instructors to constantly monitor customers. It can also create customer profiles and nutrition plans based on client objectives.

Monitors client progress and adjusts the training program as required.

Develops nutrition programs, detailed workouts days, weeks or even months. Provides customers the reports and charts via e-mail, the journal of training and nutrition plan.

http://www.crosstrainer.ca/product.php?Product=Crosstrainer% 20Online% 20Trainer

- WEIGHTMANIA

This program manages the diet plan, workout, cardio workout and weight changes. Monitor the caloric needs and carbohydrates. It can monitor more than one person simultaneously. Register fluctuations in body weight, and 24 indicators such as BP, FC, cholesterol and blood sugar, etc. adipose tissue.

http://www.weightmania.com/lpfitness.htm

- FREETRAINERS

Personalized fitness plan, this program is included in the package allows a choice FREETRAINERS level of preparedness, the number of days of training per week, the user receives a report as a chart of progress, not least by sharing personal report reports of other users.

http://www.freetrainers.com/

- FITNESS ASSISTANT 3.0

This software monitors both individual diet and personal fitness program. Register fluctuations in body weight, flexible diet based on individual needs and goal: increase or decrease in body weight. Can store a log of fitness training, diet, exercise and activities cordio post-exercise recovery.

http://www.x3msoftware.com/

- Bodybuilding CYBERGENICS 60 DAY TOTAL PROGRAM

Cybergenics 60 day total bodybuilding program is based on extensive research generally called AMA Anabolic Matrix Alteration). This system uses seven isolated chemical formulas, which have a higher bioavailability than regular supplements. These substances are called Isolates used in combination with a specific bodybuilding

training, with a maximum duration of 60 minutes. This system can be used by athletes at any level of ability, allowing a significant increase in muscle mass, strength and force of the explosion, while decreasing body fat.

http://www.trulyhuge.com/cybergenicstotal bodybuildingsystem.htm

- BODYTRANS

BodyTrans is organized into three modules: training, nutrition and mental state. This program recommends training six days a week and calls for proper nutrition that is provided through six balanced meals a day.

Training module is separated into two parts: the training of strength and cardio workout that the module allows you to search for food nutrition in a database.

http://fitness-software-review.toptenreviews.com/bodytrans-review.html

- BRILSPORTS ID

Nationally, it was noted BrilSports ID software. This allows control of the entire flow of people within a sports center, through identification cards or bracelets.

The main features of this program are:

- limiting customer access to the center, the RFID identification systems, turnstile or door type systems with electromagnetic locks
- to provide identification bracelets with different access rights to facilities within the sports center, according to the subscription type
- replace the standard key to the locker room with wristband
- identifying the customer in the sale and the possibility to start cashing consumptions
- counting the number of persons in various areas of the sports center to avoid congestion, the calculation of time spent in various areas and the possibility of differential taxation.

http://www.brilsports.ro/ro/products_id.asp

- WELLNESS GATE

Also, the software Wellness Gate, originally from Hungary, was implemented in our country in Oradea Ars Nova). This software provides complete control of operation of club sports, fitness gyms given customer, to speed up servicing.

Other features of the software:

- management of settlements, checks inventory, receipts, disbursements) administrative, business members list, regular monitoring
- facilitating the work manager, statistics, schedules, forms, instructors salary calculation
- Support for marketing and e-mail campaign

In its basic form the system contains the following modules: member identification by bar code card, magnetic and proximity, product identification by bar code, text, digital signature, billing, invoice printing, printing ticket, access ticket zone, magnetic card, barcode, picture identification, user setting arbitrary levels, with turnstile access control, electronic gates and magnetic closures, parking management.

http://www.wellnessgate.hu/

Method

Thus, the literature, we see that there are wealth of useful software in the bodybuilding and fitness programs on proper training, nutrition, post-exercise recovery, etc.

However, in Romania, the "eFit" form and content is developed, the first place. Analyzing its components and comparing them with different software from other countries, we see many similarities, but nevertheless observed eFit degree of originality of the product.

Regarding software eFit contributions relative to existing software world, there is some technical elements which do not contain the latter. Thus, the application allows eFit permanent feedback between the user and system via a touchscreen.

Also, adjustments can be made dynamic factors through user interaction with the training and not least, the system provides real time information to the user.

Doing a comparative study between an existing software worldwide and eFit note that there are many similarities, but none of the software does not contain all particulars of eFit it with an original character.

The results of this research project can be realized through:

- building a database of essential elements in preparing athletes / practitioners for subsequent realization in specialized publications
- use information obtained to improve the preparation of plans / projects Practical training;
- design and planning of training, based on data collected in order to optimize the preparation of athletes;
- objective monitoring of each sport;
- preparation of papers / publications / articles in professional journals;
- writing articles and posting them on the research results on the website eFit presentation.

Documentation on the methodology of theoretical fitness and bodybuilding by:

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- literature study documentation necessary to achieve a custom workout plan
- analyze the concepts of fitness, bodybuilding, exercise capacity, specific power
- identify the limiting factors of the specific force force under the resistance) to determine the somatic type, typology of skeletal muscle fibers
- presentation of the so-called "Weider Principles" training specific to each level of training

Methodical training on fitness and bodybuilding

As in any sport and bodybuilding is a priority as specific training to be conducted carefully, taking into account certain methodological issues.

In this context, one can see, the great importance they have training norms.

In what follows, we will refer to both the number of repetitions, number of sets, the number of recommended exercises, and the load used, the pace of implementation, rest breaks, maximum load, etc.

The number of repetitions performed in a series will be closely interlinked with the objective pursued. Thus, if we are to develop muscle strength, number of repetitions can vary between 10-15, to develop muscle strength is recommended approximate 6 to 10 repetitions, for muscle growth hypertrophy) will perform 6-8 repetitions, and for developing explosive strength power) 1-3 repetitions. These values are given, each player adjusting the number of repetitions, sets and exercises specific to its individual needs.

A basic rule of the bodybuilding workout that is always on the large muscle groups such as deltoid, pectoralis, Ridge, quadriceps muscle group before it will work as well as smaller brachial biceps, triceps brachial, femoral biceps, calf, forearm, etc. The only atypical in that particular case and this rule is repealed, on the principle of priority Weider. If that will work at the beginning of training, weak muscles, whatever they may be.

Recommended number of sets for small muscle groups such as the brachial biceps, triceps brachial, femoral biceps, calf, forearm is 8-10, and for medium and large muscles as the deltoid, pectoralis, dorsal, quadriceps is recommended to 12 -14 sets.

Number of exercises for a particular muscle group may vary for major muscle groups between 3-4 and 2-3 for smaller muscle groups.

Load used in bodybuilding training can be:
- over maximal it has values of 101-175% of IM full load), in this case using exclusively the principle of negative movements Weider retro gravity)
- representing 90-100% of maximal IM
- high ranging between 60-90% of IM
- having average values between 30-60% of IM C. Bogdan, 1998)

Regarding the pace of implementation, the vast majority of exercises within a workout should be performed in a deliberately slow. Throughout the movement of cargo must be kept under control, without any tendency of jerky, throwing, balance, etc..

Rest break between sets will range between 1 and 3 minutes, depending on the type exercises basic exercises performed with high loads require a larger rest period in relation to years of isolation), and not least according to The training principle applied normal rest break is to be reduced if the principle of quality training).

It is particularly important for training effectiveness is the appropriate choice of intensity of work, which involves determining the maximum load IM), because on that basis to be able to choose the optimal training load.

To determine IM use the formula to calculate the maximum load from O'Connor:

$$1\ IM = W \times 1 + 0.025 \times R)$$

where:
IM = maximum load
W = weight lifted
R = number of repetitions
http://en.wikipedia.org/wiki/One-repetition_maximum)

In bodybuilding, unlike other areas, "more " does not necessarily mean "better. " In this respect, which is interested in a workout intensity of his effort and less volume, volume to be kept within reasonable limits.

To increase the intensity of effort, bodybuilder is traversing several ways. One would be to increase the load used several pounds load), but it is known that no load can be increased every day because it is physiologically impossible. However, to increase the intensity of effort, even if working with the same load can speed up execution of the exercise. This method is recommended only if you work with loads of 65-85% IM also, increasing exercise intensity can be achieved by reducing the break and rest between two sets. This method is recommended if you want to build muscle mass mainly because the decrease in rest breaks is counterproductive if heavy exercises aimed at muscle hypertrophy.

In conclusion, for a training to have maximum effectiveness, it is recommended that the duration should not exceed 60 minutes, to be sufficiently intense to produce adaptive changes in the muscle fibers and basic exercises to be performed in strict form. J.N. Herlo, 2005)

Regarding post-exercise recovery period, expressed in hours, it is dependent on training load as follows:

- extreme load = 72 hours recovery time
- high load = 48 - 72 hours recovery time
- substantial load = 24 - 48 hours recovery time
- average load = 12 to 24 hours recovery time
- low load = <12 hours for recovery

V. Zatsiorsky, W. Kraemer, 2006)

Discussion and conclusion

Developing software solution eFit by:

- making an inventory of existing specific software on a national and international
- the study of computer science literature, methodology fitness and bodybuilding training, ergo physiology, somato meters etc.
- purchase of equipment, measuring instruments and monitoring

eFit software testing by:

- the connections between the devices at both hardware and logic to detect and correct any problems on communication protocols, such as software conflicts, etc.
- conducting a pilot study

eFit software implementation by:

- implementation strategy eFit in bodybuilding fitness room Panoramic Gym in Arad
- selecting a representative sample for the project
- initial testing of the subjects involved in research
- developing individualized training programs, the level of physical training which is at the initial, intermediate, advanced)
- adaptation of the training process to the individual needs of the moment
- feedback to the athlete's permanent / student by providing it, in automated, at fixed intervals of time, its individual sheet e-mail)
- ongoing monitoring of morphological indices body mass index, the elasticity of the chest) and functional blood pressure and heart rate)

eFit and user interface of the images can be viewed below:

Figure A
a) personal card scanning

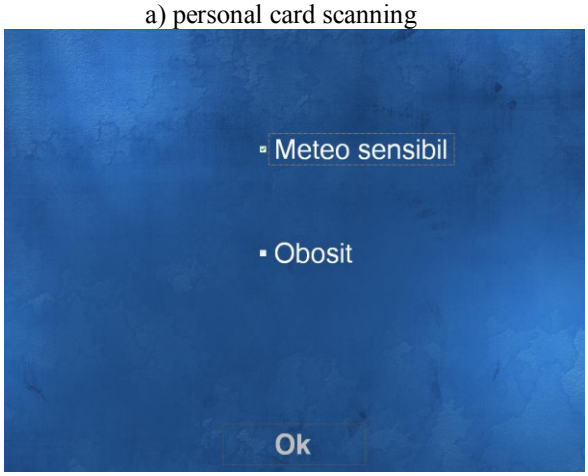

Figure B
b) the choice of a state optional)

Figure C
c) view custom program

Figure D
d) determination of body mass

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http://www.brilsports.ro/ro/products_id.asp
http://www.x3msoftware.com/
http://www.wellnessgate.hu/http://www.bodyfitdb.com/
http://www.trulyhuge.com/cybergenicstotalbodybuildingsystem.htm
http://www.crosstrainer.ca/product.php?Product=Crosstrainer%20Online%20Trainer

HEALTH AND PHYSICAL CONDITION EVALUATION AND KNOWLEDGE CONCERNING AEROBICS AND PILATES PROGRAMS IN THE ADULT POPULATION

GRIGORE, VASILICA[1], TUDOR, MARIA[2], TUDOR DORU[3]

Abstract

Purpose. Our purpose was to evaluate the health and fitness level of adults who are willing to practice Aerobics at the gym of our University. We also wanted to determine the degree of public awareness uppon the issues related to Aerobics and Pilates Programs.

Methods. We used two different approaches to study the proposed issues: Test Method for assessing the health and fitness level of the subjects and the Inquiry Method based on Questionnaire for determining the degree of knowledge concerning Aerobics and Pilates Programs.

Results. Worse aspects where reported especially in terms of Fitness Index FI), Body Mass Index, BMI) and Balance,

[1] National University of Physical Education and Sport Bucharest, ROMANIA
[2] University of Medicine and Pharmacy "Carol Davila", Bucharest, ROMANIA
[3] University of Medicine and Pharmacy "Carol Davila", Bucharest, ROMANIA
Email: tuddoru@yahoo.com
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Physical Fitness level being low. The inquiry showed a poor knowledge on matters related to Aerobics and Pilates Programs, and particularly of their specific objectives.
Conclusions. Considering the findings, we believe that is necessary a better public information regarding Aerobic and Pilates Programs and their benefits uppon fitness and health,.
Key-words: Health, Physical Condition, Aerobics, Pilates, Adults

Introduction

Modern Society , in an amazing effervescence confronts people with new challenges every day..... " In this sense, one`s attitude towards hymself and hence towards health is an issue that has caused and continues to attract interest. Having good health is a dimension of quality of life " V. Grigore, D. Vasilescu, 2011).

The multitude of studies and researches conducted in recent years in different areas, highlights, in addition to many other issues, that a sedentary lifestyle causes obesity, poor body posture, a weak tone of the Core Muscles, increased Body Mass Index and fat tissue vertebral deformity, lack of mobility and flexibility, stiffness, muscular atrophy, disorders of cardio - vascular function, anxiety, etc.

Physical inactivity, alongwith other factors smoking, unbalanced diet), are constant elements of modern life, inherently leading to a rapid increase in the number of people suffering from diabetes, cardiovascular disease or obesity. These diseases can be largely prevented. The preventive measures recommended by WHO are moderate physical activity for 30 minutes a day, quitting smoching and healthy eating.

Confronting sedentary lifestyle has become a governmental problem in some countries .Thus, in some developed countries a new lifestyle is promoted by providing the public facilities for encouraging the developement of population's fitness levels: creating safe routes for running, cycling, creating parks or green areas for leisure development, laws to punish smoching in public places, promoting outdoor movement in schools, communities, etc..

In this context we enroll our approach, which is trying to contribute to a better understanding of issues related to the practice of Aerobics and Pilates Programs in order to improve health, fitness level and enhance the quality of life of Adult clientele.

Purpose:

Evaluation of Health and Physical condition level and knowledge concerning Aerobics and Pilates programs in the adult population willing to practice recreational sports at the gym of the Medical University "Carol Davila", Bucharest.

Objectives:

1. Measuring, recording and interpreting the values of Somatic and Functional Indices to assess Health and Fitness level of the studied sample .
2. Assessing the public level of awareness regarding the characteristics and objectives of various Aerobics Programs and Pilates.

Hypothesis:

1. Stage level of the Fitness and Health parameters of the adult population willing to practice Aerobic and / or Pilates exercise Programs is low.
2. Adult population does not have sufficient information on issues related to Aerobic and Pilates Programs.

Subjects, place and duration of research:

The study was conducted on a sample of 41 adults, female, who have expressed the desire to practice Aerobics and / or Pilates at the Gym of the University of Medicine and Pharmacy "Carol Davila" Bucharest, between September 2010 - February 2011.

Methods:

To achieve the objectives, we used the following methods:
• **Tests Method** - for assessing the Health and Fitness level
• **Survey Method** based on **Questionnaire** - to determine the public level of knowledge regarding the characteristics, objectives and benefits of Aerobics and Pilates Programs.

I. Assessment of physical fitness in terms of health

What interests us in this case is the physical condition of **adults who do not practice** a **high level** competitional) **sport activity**. In this context, the physical condition corresponds to a functional state în wich different organic systems of the human body are operating at optimum level. This state coresponds to **the definition of health**, given by WHO: „Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" WHO,1948).

For assessing the physical condition we applied a series of tests, most of them inspired by those recommended by the Council of Europe for the evaluation of the health- related fitness status of the adults sedentary or engaged in moderate physical activity). These are simple tests based on

Sub-maximal effort, targeting the following parameters:

- Aerobic capacity
- Muscle Strength and Stamina
- Mobility and flexibility
- Balance

Somatic Index registered were: **Height, Weight**. We also registered the **Age** ofb the subjects

Functional indices: heart rate after effort

1. Aerobic capacity - was tested using the 2 km test, consisting of crossing distance of 2 km on flat ground, walking as quickly as posible without running. The time in minutes and seconds) and heart rate after exercise are recorded . Based on these values we calculated:

Tabel 4 Mobility şi flexibility Rate	Age			
	20-29	30-39	40-49	50-59
Very Good	41	41	39	39
Good	36	36	35	34
Average	32	31	31	30
Low	25	25	25	24

- **Body Mass Index** BMI), using the formula formula BMI = G kg) / I m) 2
- **Fitness Index** FI), using the formula:

IF = 304 - min. x 8,5 + sec. x 0,14 + HR x 0,32 + 1,1 x G/I²) – A x 0,4 , where HR= Heart Rate and A=Age.

The data where interpreted acording to Tables 1 and 2.

Tabel 1. Interpretation of body mass index
National Institutes of Health SUA)

Value BMI)kg /m²	Interpretation
< 16	very severe weight impairment
16 < 17	serious underweight
17 < 18	moderate underweight
18,5 - 25	NORMAL
25 < 30	moderately overweight
30 < 35	seriously overweight
35 < 40	very seriously overweight obesity grade II)
> 40	morbid obesity, monstrous Grade III)

Tabel 2. Interpretation of Fitness Index

IF Value	Interpretation
< 70	Very low
71 -89	Low
90 -110	Medium
111 -130	Good
130 <	Very Good

Tabel 3 Abdominal Strength Rate	Age			
	20-29	30-39	40-49	50-59
Very Good	15	15	15	15
Good	15	15	15	13
Average	15	15	13	7
Low	15	11	6	5

2. Muscle Strength and stamina were determined using the abdominal flexion test, recording the maximum number of executions in 30 seconds.
The results where interpreted using Table 3

Table. 3 Interpretation of abdominal strength test

3. Mobility and flexibility have been recorded using the combined test of the lumbar spine and hips mobility and posterior thigh muscle elasticity by bending of the trunk from sitting. The results were interpreted according to Table no. 4.

Table nr. 4 Interpretation of mobility test

4. Balance was tested by recording the ability of maintaining for 60 seconds the position: standing on one leg, barefooted, with the other leg stretched out sideways. We recorded the number of imbalance resulting free-kick touchdown during the established time.
Interpretation was done according to Table no. 5

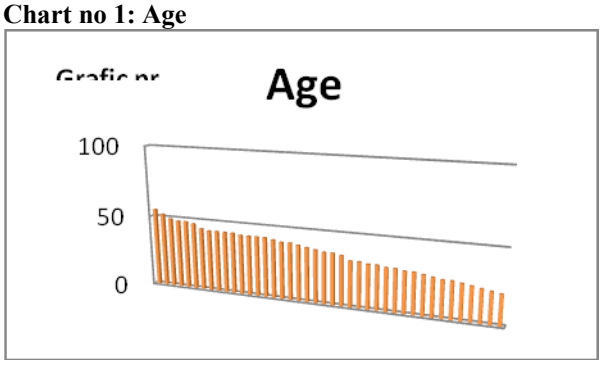
II. Determining the level of knowledge

To evaluate the level of knowlege among the target audience of the aspects regarding Aerobic and Pilates Programs and their benefits, we conducted a questionnaire-based survey. The questionnaire had a total of six items.

Results and interpretation

Age Chart No. 1) was between 21 and 55 years, with an average of 36 years and 3 months Age distribution was relatively balanced , with five values between 20 and 25 years, eight values between 25-30, five between 30-35, seven between 35-40, ten between 40-45, four between 45-50 and two between 50 - 55. Highest Frequency range was at 40-45 years, with 10 cases.

Chart no 1: Age

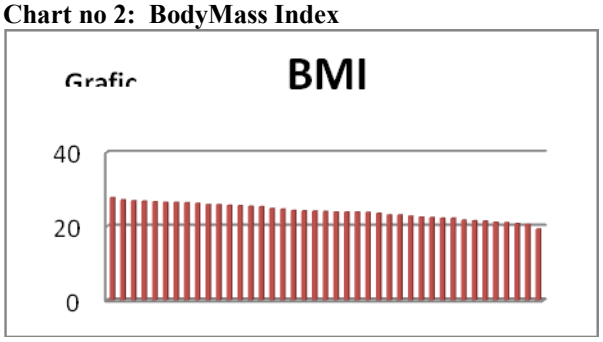


I. Assessment of fitness level

1. Aerobic exercise capacity

• **BodyMass Index** Chart no. 2) at the sample studied vary between 19.3 and 27.8, with the **average 24.02.**

Chart no 2: BodyMass Index



The majority of values falls in the normal range 18.5 to 25) according to Table no. 1,but the average is closer to the upper value, showing a tendency to overweight of the studied sample . In fact, more than one third of subjects 15 cases, ie 36, 5%) had values over 25, falling in the overweight category . Furthermore, 9 of those 21.9%), had values above 26 and 2 4.8%) .are over 27 .

In conclusion, even if the body composition of the persons in the studied sample, is geenerally situated within the normal range, We can see a tendency to overweight for a significant part of the adult female clientele.

• **Fitness Index** index of physical condition) Chart No. 3)

The fitness index distribution values very wide, min. =40 and max,= 105.2). The **average is 81.2** reanking "Low" according to Table No. 2.

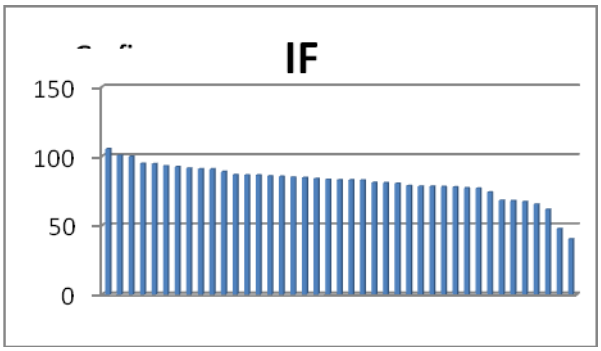


Chart no 3: Fitness Index

Fromthe range of values, 7 results 17%) falls in the category "very low" IF <70), 24 58.5%) in the category "low" 71 <FI <89), 10 24.6 %) in the category "medium" 90 <IF <110), with **no value for the categories "good " and "very good"**. In conclusion the the fitness level ofthe persons in the studied sample is alarmingly low, considering that 75.5% of results are below average, of which 17% very low.

2. Strength and muscular endurance

Abdominal muscles strehnght and endurance test results shows good results , according to Table 3 Average =12.1, Minimum = 8, maximum = 16). This shows that this parameter is less correlated with the general level of fitness.

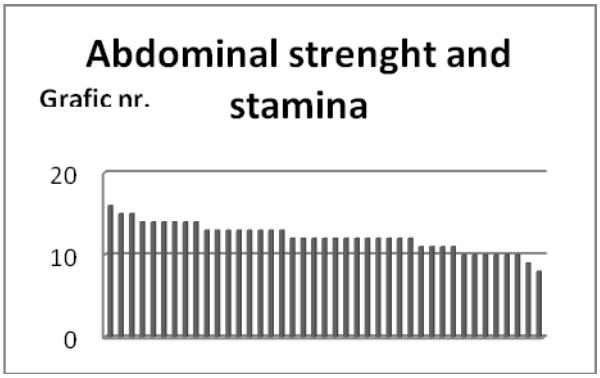


Chart no 4: Abdominal strength and stamina

3. Mobility and flexibility

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The average at this parameter 25.4) is low , according to Table 4. The results show that 20 cases 48.7%) fall into "weak " rank, while only two results 4.87%) reach "good"level .

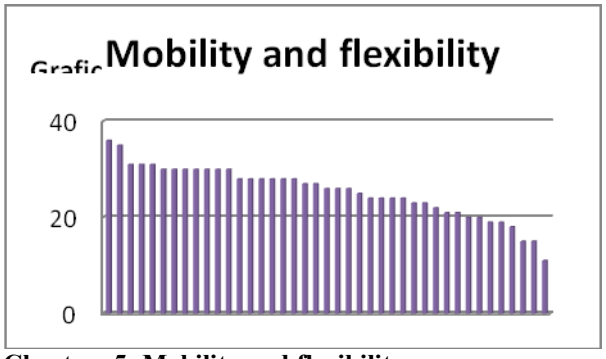
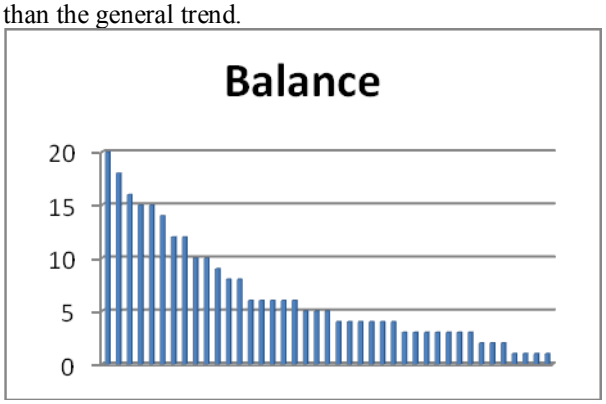


Chart no 5: Mobility and flexibility

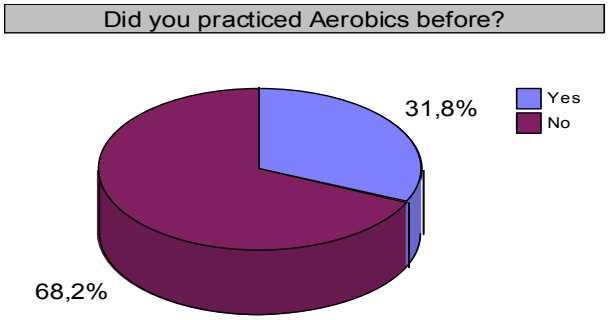
4. Balance

Values obtained at balance test, interpreted according to table no. 5 are generally unsatisfactory. The **average of 6.5 imbalances** in 60 seconds deferred to a **medium age of 36 years and 3 months** falls within the category "low. " It should be noted the asymmetric distribution of values. The average is strongly influenced by a number of 13 results 31.7%), which have values significantly higher than the general trend.



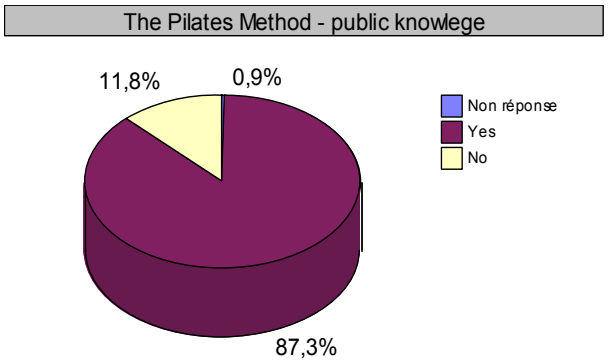
II. Determining the level of awareness regarding Aerobic and Pilates Programs – Results and interpretation:

1.Of the investigated sample, only **31.8%** had **previously practiced Aerobics and/or Pilates** , while 68.2% answered „No".



2. Types of aerobics programs known
We notice a low knowledge among the public. Many subjects indicated de wide term - Aerobics or the general concept - Fitness . Were often mentioned Tae-Bo 20 citations), Step-Aerobics 18 cit.), Dance Aerobics 10 cit.). Less cited were stretching 6 cit.) Yoga 5 cit.) Kangoo-Jumps 5 cit.), Zumba 5 cit.) , Mind &Body 2 cit.).
Note that the answer to this question was free, open.

3. The Pilates Method – public knowledge
87.3% of the respondents **said they heard of Pilates** while 11, 8% did not heard .

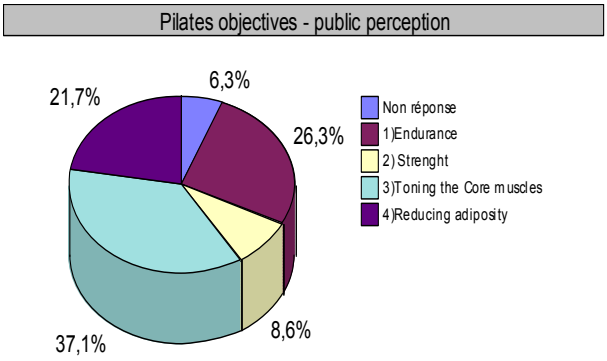


5. Public knowledge concerning Pilates Method Objectives

This question had four closed answers, multiple choice) and offered these options: 1) cardiovascular endurance; 2) overall strength; 3) toning deep muscles nof the body The Core), and stabilising the spine; 4) Reducing the fat and body weight .
The correct answer was option 3.

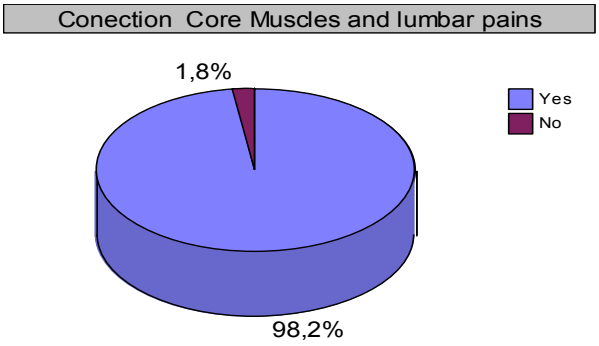
Only 37.1% of responses **indicated the correct choice**, That shows a poor knowledge of issues related to the main objectives of aerobics

programs and general maintenanceof the Pilates Method in particular.

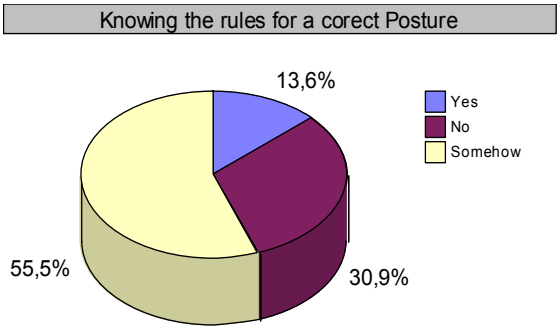


6. The perceived connection between core toning and preventing / fighting back pain

It appears that, at least on an intuitive level, adult population perceive correctly the benefits that toning the deep, postural muscles of the Core brings uppon preventing and combating back pain. 92.2% . answered „Yes").



7. Knowing the rules posture for a correct posture



In the knowledge of the rules for a correct posture, over half of respondents said they are aware. However, considering that 43.6% of the respondents do not know or are not too sure, it appears the necesity of educating clientele in this matter .

Conclusions:

• The tests regarding body composition of the persons in the studied sample as evidenced by BMI), shows a tendency for overweight in a significant part of the adult female clientage, although average values are within normal limits.
• The physical condition of the tested persons is alarmingly low,. 75.5% of the values of the Fitness Index FI) are below average, and 17% of them are very poor).
• The tests of muscle strength and endurance showed good results; this parameter seemed to be less correlated with the general level of fitness.
• Mobility and flexibility values are poor, almost half of the results 48.7%), ranking "low".
• The balance level is also low.
• Most respondents have not practiced Aerobics and/or Pilates before.
• There is poor knowledge concerning Aerobics and Pilates Programs, their objectives and their specific benefits uppon the fitness level and health.
• At an intuitive level, the adult population clientel perceive the benefits of Pilates in toning of the deep Core muscles correctly and their effects on the prevention of back pain and lumbar disease.
• It is necessary to educate the adult clientele regarding the rules of a correct body posture.

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THE IMPACT OF AN EXERCISES PROGRAM USING THE TOOLS ON THE SENSORY RECEPTOR, MONVEMENT INTELLIGENCE AND SOME MALADJUSTABLE BEHAVIORS OF MENTALLY RETARDER PERSONS

MANAL AL-SAYYED[1], WALID MOHAMED[2]

Abstract
Purpose Examine the use of tools to improve the sensory receptor, movement intelligence and some maladjustable behaviors of mentally retarded persons who are the learning.
Methods The researchers design a program for recording the results of the tests under discussion. The study includes the measurements of movement intelligence of mentally retarded persons and measurements of maladjustable behavior.
Results Exercises tools are instrumental in the development of sensory receptors and are successful in the developments of the movement intelligence. The designed program plays also an important rules in reducing the degree of maladjustable behaviors of mentally retarded persons who are the learning.
Conclusions The proposed exercises program using the tools has a positive effect on the improvement of sensory receptors and the development of the movement intelligence. This program also reduce the degree of maladjustable behaviors of mentally retarded persons who are the learning.
Key words: Sensory receptors, mental retardation, maladjustable behaviors

Introduction and research problem
The groups of special needs represent a larges proportion of the community. The organizations and the international organization refer to the increasing growth of the numbers of mentally handicapped persons. According to the reports of WHO, there are about 10% - 20% of the population of developing countries has various disabilities, as 41% mentally 35 % visually and 35% heavy disability.
The mentally handicapped persons have lake of the general intelligence these disabilities represent an important factors in learning.
The WHO organization identified the international classification of the degree of the mental disability as fellows:
- The class of who can learn and his / her IQ is about 55-70%
- The class of who con train and his / her IQ is about 30-50%
- The cases of dependents on others and their IQ is about 30 point or less.

In this study, the two researchers are interested in the class of who can learn. It is characterized by the slow movement, difficulties in coordinator The movements, balance disorders, and movement correspondence.
As we note that these capacities mainly depend on the natural processes, we spotlight the important of the psychological, mental, motor, and social care for the mental handicapped persons in order to increase the agreement and behavior modification other with self or others, turning them into productive power. Also these activities effect on their positive altitude towards themselves. The exercise is one of the most important sport performances which a lot of people depend on, regardless their classes, ages, and races.
Most of developed countries are interested in exercises as the basics of the physical preparation of different sector of people because there isn't any danger or need to special tools and a large number of individuals to practice them in one time without a high degree of capacity. If the exercises are essential to the proper person, they become more necessary for the mentally handicapped persons, as they help improve the motor skills, neuro-muscular balance, accuracy, and the skeleton case of the body.
Logically, the physical activity is the practical field of developing the mentally handicapped persons and modifying their behaviors through the movement and play. They can acquire experience, motives, and needs, interacting with the surround environment through the different senses which represent the first line to receive information. In sport, the individual interacts with each of tools, fellow, space court), time, distance, lights, obstacles, and other spiritual mobility, where the sensory receptors play a key role in the ability of focus and the correct use of the success of most motor skills.
The nervous system is the dominant at all the vital functions of the body and which links them. It works to achieve the unity of organizer and integration. It consists of a set of nerve cells with special nature gathering each group of cells as specific functions and known as nervous counters. The information exchange and the transition between the nervous system and the various parts of body are to be through these nervous canters. Man's nerves are two networks; one of them comes from the brain while the other backs to it. The motor-nerves are considered a network where the brain is its sources. Then the spinal cord spread them into all parts of the body. Any damage of one of these nerves leads of halt the muscles that are stimulated by that nerve this damaged nerve. In the performance of movement, sensory receptors send nerve signal to determine the range of the movement to be done. Then they come back with these signals to the brain and spinal cord. So they can correct the track of the movement during the performance, if it is needed. Thus, this movement can be played perfectly through the exchange of signals between the muscle-skeletal system, muscles, tendons, joints, and the nerve system.
The sensory receptors are divided to three types
-The external sensory receptors that receive the external stimuls
-The internal sensory receptors that receive the stimuli from the internal orgasms.
-The motor sensory receptors that receive the stimuli from the muscle skeletal system.
The motor sensory origins show their importance in feeling of the movement and body status as a whole, as well as the relationship between each part and the other origins. These

[1]Department of sports training, Faculty of Physical Education, Minia University, EGYPT.
[2] Department of sports health science, Faculty of Physical Education Sports, Minia University, EGYPT
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origins function as sensory corridors for the reflective actions to maintain strength and muscle tone. These organs are in the muscle, tendons, and the joints through three sensory sources as fellow:

-The muscle spindles that are found in skeletal muscles and their daily are to provide information to the central nervous system about the stretch of the muscle and its size. They work during the flexibility exercises.

-The receptors of tenders called Golgi's tendom particles, are located near the surface tissue of the tender. They send signal to the spinal cord and then to the brain. These particles increase its work in the case of defibrillation but it is low in the case of relaxation. It means that they work against the muscle spindles. While the latter feels the expansion, Goli's partcles feels the contraction. These particles serve the movement in two main functions. The first is a preventable function from the increasing tension in the muscle, so these particles work to stop the high contraction. As for the second one which discovered recently. These particles provide the spinal cord with a sensory feel back, even in the low level of the contraction. This function accrued diagnosis of information which helps increase the control of the movement.

-The sense origins in the joints, called pak'senip capsules, are found in the deep connective tissues around the joint. They alert by the vibration or pressure which on joints during the movement. In addition to the file known senses sight – hearing – touch – taste – smell) and the nervous system analyze and interpret the information receive from the internal and external environment, and then they respond to it.

Also man has two additional senses that are the movement and vestibular sense. The movement sense depends on the receivers in muscles, tendons and joints. It predicts the relative situation of body during the movement. As for the vestibular sense, called the sense of direction or balance, it feels us the direction of movement for each of the head and body to the ground during the motor performance. Muhammad Al-Najjar 2005) mentioned that the motor receptors failure the differences of adaptation phenomenon which depends on the responses of these receptors to the continuous alert. While the rate of nerve signals of the motor receptors with rapid adaptation, planarian capsule, low during a part of minute from the beginning of the continuous alert, the rate of nerve signals of the motor receptors with slow adaptation, as Ruffini Ending-Ruffini-capsule-muscle spindle- Glogi organ continue with this alert.

Also the motor receptors, with rapid adaptation, are very sensitive to any change in the alarm. So it is believed that they are responsible for the sense of joint movement. The motor receptors, with slow adaptation, reaches to the maximum degree of stimulation with a change of joints angles, so it is believed that they are responsible for the sense of joint movement are only activated in the maximum degree of this movement 26:32). The psychologists confirmed that man doesn't have one kind of intelligence but he has multiple intelligences, dealing with the life situation. Gardner mentioned that the capacities or intelligences are found in every individual with varying degrees, they depend on the individual's personality. While they are separated from each other, they work together and are united to form the unique character of each person.

These intelligences can be summarized in linguistics intelligence – intelligence profile- musical intelligence – logical intelligence – social intelligence)

They associated with thinking; there is a central processor of information which could contacts with any kind of intelligence in the mind. This processor has the ability of receiving the information from different sources and co-ordinates between kinds of intelligence directing to the process of solving problems. This task adjusts the functions of brain as comprehension, memory, and learning, even if it applies the different skills of the different kinds of intelligence. The children, characterized by motor intelligence kinesthetic), are athletes that love the movement and sport. They have the ability to control properly the body activity and movements. That returns to the association between this intelligence and motor skills and physical features which in turn require a type or more than one from the types of the sensory receptors.

The efficiency of sensory receptors associated with the type of motor performance of a child, refers to his/her motor intelligence through which we can judge on his/her excellence in sports. In the field of mentally handicapped persons, the evidences of studies refer to a number of behavioral problems and malady just able behaviors which impede their progress in the learning, training, and qualification programs, so they have effect on their personal, educational, and social growth.

In the view of the tow searches, if the mentally handicapped children have the activity which bring them together and develop their cooperation in a way to express them selves and form social relationship with other performing it very music and tools, this activating will increase the realization of the importance of social relations. Thus it can reduce the degree of maladjustable behaviors which are exposure through their integration with others. Through the researchers, reading on Arabic and English studies, references related to the class of mentally handicapped persons, they found that this class deserves an important, believing in all efforts of community to achieve equal education opportunities for all children. It can be through developing programs and activities which agree with their interests, needs, and characters to have physical fitness and good growth. From this point of view, researchers design a program of exercices with different tools balls-hoops-chords) in order to develop some of their physical attributes as neuro-musclar corresponding, flexibility, balance, sensory receptors, and motor intelligence to help control on their punts of body and use different senses, performing the sport skills more correct them other non practitioners of sport actively. Thus, they acquire many social skills through developing some of the collective and motor situations which degrees with their abilities, reducing some of their malad justable behaviors as violence and abuse to increase their own confidence.

The research objectives:

This research aims to design and apply a proposed program of exercises with tools and the knowledge of its effect on.

1-Sensory receptors balance), motor intelligence, and some none-corresponding behaviors for the mentally handicapped persons who have the ability of learning.

2-Knowing the percentage of developing the sensory receptors, motor intelligence, and some of none-corresponding behaviors for the mentally handicapped persons.

The research hypotheses

1-There are statistical differences between the pre-measurement and the post one in the sensory receptors, motor intelligence, and some of none-corresponding behaviors in favor of the post-measurement.

2-The percentage of improvement of the post-measuring is better then this percentage of the pre-measurement in the sensory receptors, motor intelligence, and some of none-corresponding behaviors. For the mentally handicapped persons who have the ability of learning.

The research approach

The researchers used the experimental approach, because it's suitably the nature of research using a pre-measurement of one experimental group and then the post- one of the sense group.

The research society

The research society was closed from the students of the mentally handicapped school in Minya for the academic year 2010/2011. the student's percentage of intelligence is between 50%-70%) and their mental age is 5-7)years.

This society has reached to 30 students except 8 ones were excluded because of the non-availability of the following contentions

There aren't other disabilities except the mental retardation

-The regular attendance to the school without absence.

-They have maladjustable behaviors through applying the standard of maladjustable behaviors in the class in order to determine the more prevalent ones among these children on the day .

-The following table show the percentage of these maladjustable behaviors which are measured.

Table 1)

The percentage of the providence and the maladjustable behaviors in the research society

percentage	Frequency	maladjustable behaviors i	م
100%	**50%**	**the violence and destructive behaviors**	**1.**
85%	**40%**	**anti-social behavior**	**2.**
55%	**30%**	**unruly behavior**	**3.**
50%	**25%**	**the none-trusty behavior**	**4.**
50%	**25%**	**withdrawal**	**5.**
50%	**25%**	**stereotyped behavior and abnormal one**	**6.**
85%	**40%**	**inappropriate social behavior**	**7.**
40%	**20%**	**unacceptable voice habits**	**8.**
50%	**25%**	**unacceptable strange habits**	**9.**
30%	**15%**	**the behavior of self-harm**	**10.**
55%	**30%**	**tendency to –activity**	**11.**
20%	**10%**	**abnormal sexual behavior**	**12.**
90%	**45%**	**psychological disorders**	**13.**

-It is clear from table 1) that the most common maladjustable behaviors represent violence, destructive behavior anti-social behavior-inappropriate social behavior and psychological disorders where each percentage is 85% or more.

The research sample became 12 children representing 40 % of the research society. Also there are 10 children were chosen from the research society outside the basic sample, for the exploratory study.

The following table shows that:

1-The research society, basic sample 30 exploratory sample 12, 10 excluded children.

It is clear 8 from table 2) that the research society 15-30 basic sample 12 exploratory samples 8-10

Table 2)

Excluded children	**excluded children**	**exploratory sample**	**, basic sample**
8	**10**	**12**	**30**

and the following table shows the coherence between individuals of the research sample and the research variables mental age- height- weight- IQ – battery of motor intelligence and the maladjustable behaviors.

Table 3)

Showing results: Table 4)

Significant differences between the average pre and post tests

Torsion coefficient	**standard deviation**	**arithmetic**	**the mean**	**Mediator variables,**
.55	**.98**	**5.30**	**5.48**	**mental age**
-.59	**4.19**	**134.50**	**133.67**	**Height**
.05	**4.64**	**35.50**	**35.58**	**weight**
-.45	**6.20**	**56.00**	**55.08**	**Intelligence**

of the sample under discussion in the sensory receptors Intelligence and motor and some of the MALADJUSTABLE BEHAVIOR Wilcoxson Allabaramitrip manner n = 12)

Table 5)

Percentage rate of improvement between pre and post tests of the sample under discussion in the sensory receptors Intelligence and motor and some of the MALADJUSTABLE BEHAVIOR n = 12)

Z value	**Post test**		**pretest**		**measurement unit**	**Variables**		
	cv	**m**	**cv**	**m**				
3.06	**0.40**	**1.16**	**0.11**	**0.46**	**Second**	**Eye open**	**balance**	**Sensory receptors**
3.06	**0.44**	**1.87**	**0.10**	**1.21**	**Second**	**Eye closed**		
3.06	**60.81**	**142.75**	**30.46**	**84.92**	**Cm**	**Drop the ball**		**Movement intelligent**
3.09	**7.17**	**27.58**	**7.33**	**37.83**	**Second**	**Winding around the circle**		
3.15	**1.75**	**4.83**	**1.36**	**2.25**	**Number**	**Ruler and colored**		
3.09	**0.68**	**1.58**	**0.67**	**3.61**	**Second**	**hands Sound and motion**		
3.36	**1.15**	**3.67**	**1.08**	**1.58**	**Number**	**Walking to the Department**		
3.08	**2.48**	**21.17**	**3.50**	**27.41**	**Degree**	**Violence**		**Maladdjustsble**

3.08	4.99	28.25	5.99	34.58	Degree	Antisocial behavior	behavior
3.09	.094	4.17	1.72	8.67	Degree	Inappropriate social behavior	
3.07	3.20	22.08	4.30	28.58	Degree	Mental disorders	

the percentage of improvement	Post test	Pre test	measurement unit	Variables		
152.17	1.16	0.46	Second	Eye open	balance	Sensory receptors
54.55	1.87	1.21	Second	Eye closed		
68.10	142.75	84.92	Cm	Drop the ball		Movement intelligent
27.09	27.58	37.83	Second	Winding around the circle		
114.67	4.83	2.25	number	Ruler and colored		
56.23	1.58	3.61	Second	hands Sound and motion		
132.28	3.67	1.58	Number	Walking to the Department		
22.77	21.17	27.41	Degree	Violence		Maladdjustsble behav
18.31	28.25	34.58	Degree	Antisocial behavior		
51.90	4.17	8.67	Degree	Inappropriate social behavior		
22.74	22.08	28.58	Degree	Mental disorders		

Presentation and discussion of results:
Is clear from Table 4) that there is significant difference between the mean measurement pre and post in the sensory receptors in the direction of telemetric because researchers to perform the exercises proposed tools, which have exercises to improve sensory receptors through the balance of hard walking Amama with keeping the rope and hoop and the ball high and stability on one foot high and stability as well as walking Amama and succeeding on a rope Unfolded on the ground, stability, one foot on the rope and walk Amama on mattresses - the ground), where children with intellectual disabilities often find it difficult to coordinate sensory input and that the children who suffer from difficulty in inputs sensory may be activity motor either excessive or, more lazy, and unable to shielding correct any that should be ignored or amplify signals that should fall on deaf Sagipoan children who suffer from hyperactivity may find they have to resist engaging in activities such as climbing stairs or descent and may seek help from other people while walking, and longer exercises sensory receptors of exercises that meet the needs of children with sensory either by reducing or inflating the severity of various forms of Allacharat sensual they receive and most of the exercises sensory receptors with children

working to improve the vestibular system, stimulation , and tactile perception, and the vestibular system helps children to be able to stand and to coordinate their movements as they contain a sensory input from the senses of vision and especially located in the inner ear. Prompting researchers to be training on different surfaces so as to increase the ability to control the body and increase the child's sense of place, as well as the attention of casting researchers the existence of exercises to increase balance, because the balance of the most important elements to be used to increase the efficiency of sensory receptors as they researchers gradually made it more difficult performance in some exercise, so exercise and have used some eye closed so as to isolate the sense of sight and therefore are relying on other elements to increase the efficiency of sensory receptors. Also used the exercises and eye open to help in providing information about the child's body and grasp the situation taken by the body, leading to an improvement in the balance disk. This is consistent with Essam El-Din Shaban 2008), that when you isolate the sense of sight will the other senses to Aaradia Kams and the sense of the Conquer, which depends on the stand to the ankles and feet together to cooperate among themselves in order to achieve the required responses in difficult situations 19:5.9), 37:216). Also clear from Table 4) that there is significant difference between the mean measurement pre and post in the intelligence motor in the direction of telemetric and because the researchers to use the exercises to help focus attention in determining the specific colors and Spicy red _ blue _ white _ black) in the tools used Kalkrat, ropes, hoops and balloons and bottles, plastic, which helped in the development of the ability to remember to perform exercises specific tools specific link between them has led to the distinction between the tools and use of colors and movements and thus helps disabled children to participate in the performance of realistic and what is imagined movements satisfy his tastes and desires, and linked that to the whole process of thinking before doing the exercise After reciting the period leading to the availability of information in the nervous system to help the process of feedback, making it easier to perform exercises and making decisions and solving problems that can be matched, by a task and brain functions such as comprehension and memory and learning and through the exercise program where included exercises using balls to throw balls and received between colleagues and drop the ball on the ground forward and kicked the ball foot forward and backward as the performance of exercise walking and cycling around the ring and the rope and the department and the use of different sounds siren _ applause) to distinguish a particular movement at the sound of a particular, and that these exercises deliberately provoke sensory receptors motor located in the muscles, tendons and joints which enabled the development of neural signals received help distinguish the conditions and movements performed by the body during movement and adaptation to the space around him and this is consistent with Essam El-Din Shaban 2008), and Rehab Mostafa 2006) that this improvement is due to the program exercises with the tools proposed, which contains a variety of team sports that develop teamwork and cooperation, in addition to the competitions which help to dump excess energy in these kids in a positive direction with the dimension of aggression and violence as well as to contain the program on a large number of small instruments varied in shapes and colors to attract the attention of children and gain increased motivation to work.

Is clear from Table 4) that there is significant difference between the mean measurement pre and post in some of the behaviors Allatwafiqip In the direction of telemetric and because the researchers that to contain the exercise program a range of performance collectively as provide a chance for every student Allastrak with others, to bring the tools, use and participate together and friction direct for longer periods in collective action, which stimulates directing the energies of others addressed properly and negative energies to positive and useful, helping to reduce the degree of violence and destructive behavior has the addition of the performance of some exercises on the melodies of music, fun and fun is giving the listeners. Kmahdt decrease in antisocial behavior through cooperation and the ability to express themselves and the formation of social relationships positively with others and integration into the group dynamics of collective which confirms the understanding of the importance of social relations and directing their behavior and modify it through movement and play in competitions and gain experience, motives, and tendencies to interact with the surrounding environment of the stadium and tools, colleagues and is consistent with Abdul Hamid Sharaf 2003) that the activity of collective works to increase social interaction and adapt to society, and help in modifying the behavior and the acquisition of good behavior is far from the aggressive and satisfying recipe fair competition among the children of children with intellectual disabilities 13:15). As well as a decrease in inappropriate social behavior where Acharsid Sobhi 1990). Quoting Jansen and Combs 1987) that the group exercises as well as methods of promotion and strengthening the positive help to get rid of some of the problems and behavioral disorders suffered by disabled children and emphasizes the study of each of the states of Yahya 2003), Magda Mohamed Hanafi 1996), Mohamed Ibrahim Hamed 1996), education programs that help in modifying the kinetic behavior Allatuaqy in children with intellectual disabilities. And last but not least, there was a decline Kaladtrapat psychological terms included exercises on the maintenance of some of the tools and move out and integration in the collective movements accompanied by music, which helps to decrease tension, anxiety and fear in parts of the unit Altderbep are all consistent with Rehab Mostafa 2006) and the verses of Yahya 2003) that the improvement in the level of cognitive motor due to the education program motor proposed to the content of the basic skills of walking was the Partridge and sliding and the other through a series of exercises and games are easy and exciting with the use of various instruments, which attracted the attention of children and raised the motivation to work with pleasure and joy It is clear from the foregoing to validate the first hypothesis, which stipulates the application of a proposed program of exercises with the tools and knowledge of its impact on the sensory receptors equilibrium constant), intelligence and motor Allatwafiqip some of the behaviors of mentally retarded persons who are the learning. As shown in Table 5) that there is the proportion of improvement percentage of Kiesin pre and post in the movement intelligence ranged between 27.09: 132.28), where studies have confirmed that the origin of human intelligence of the child with the activities of motor sensory and Astiarp senses hearing - sight - touch - smell - taste) in addition to the need to exercise motor activity, where genetic factors interact with the environment to determine the efficiency of the work of the mind, we find that the process of intelligence of the child are made through various stages of life and this is consistent with Essam El-Din Sha'ban. Therefore, researchers interested in using the exercises include the raising of the individual senses and abilities such as the use of sound and movement and to distinguish the shapes of triangles, circles, Tmmez colors. Also clear from the table 5) that there is the proportion of improvement percentage of Kiesin pre and post in some of the

behaviors Allatwafiqip of mentally retarded persons who are the learning was ranged between 18.31: 51.90) and explains that the researchers to use the types of exercise, which relied on the collective participation during the performance and the development of social relations between children than it grew their association and affiliation to work motor and integration as a single unit, which helped to reduce some of the behaviors Allatwafiqip under the mentally handicapped, and this agrees with the study of Rehab Mostafa 2006), and the hopes of Mohammed A. 2006).

Conclusions:

Within the objective of the research in light of the assumptions and methodology used and through statistical analysis, the researchers reached the following conclusions:

The proposed program of exercises with the tools have a positive effect on the improvement of sensory receptors and motor development of intelligence and reduce the degree of some of the MALADJUSTABLE BEHAVIORof mentally retarded persons who are the learning.

Recommendations:

Conclusions in the light of this research the researchers recommend the following:

1 - put the proposed program of exercises with the tools of physical education into the curricula of schools of education property because of its positive impact on the development of effective sensory receptors and motor, low intelligence Allatwafiqip behaviors among students with intellectual disabilities.

2 - to focus on exercise programs, especially the various tools in the schools of education property of mentally retarded persons who are the learning at all stages.

3 - Conducting similar studies of children with intellectual disabilities and massage on the other variables to determine the impact of the exercise by the tools.

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STUDY ON CHILDREN MOTIVATION IN PRACTICING SPORTS

NICULESCU GEORGETA[1], SABĂU ELENA[1], BĂNICĂ LOREDANA[1], GEVAT CECILIA[2]

Abstract

Purpose. Motivation is a regulator psychological phenomenon that activates the human mental life. Athletes' motivation for their performance is determined by the harmony between the intrinsic and extrinsic motivation. The purpose of this study is to detect the main reasons that stimulate children in practicing sports.

Methods. The main method of research is the survey. We had a set of 10 questions, for a total of 60 subjects aged 8 to 10 who practice individual sports, such as: track, rhythmic gymnastics and swimming. The subjects' responses were analyzed quantitatively and qualitatively, and were represented in chart form.

Results. The subjects responded to all questions. The responses were generally similar in all sports.

Conclusions. At the age of 8-10, children are motivated to practice sports by personal needs that induce pleasure, but also due reasons supported by parents.

Key words: motivation, children, sports

Introduction

The motivation is defined by the scientific literature as a constant, directed and persevering effort carried out by a person in order to get an aim.

The motivation becomes a psychical regulating phenomenon of the human activity. The motivation is "*the driving force of our psychical life, as anything we undertake is due to ones or other*

[1]Faculty of Physical Education and Sport Spiru Haret University, ROMANIA
[2]Faculty of Physical Education and Sport, Ovidius University, ROMANIA
Email: elenasabau20@yahoo.com
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component parts of the motivation" M. Modrea, 1998). All the human efforts are based on a motivation, an interest.

The motivation is based on the biological principle of homeostasis, according to which all organisms tend to keep a certain stability in relation to all changes appearing in the environment.

The motivation provides to the personality the energy and the reason of different actions.

The motivation is structured on fundamental elements acting independently in the human conduct. The component elements are disposed as follows: needs, reasons, interests, convictions, ideal of life and world outlook.

Each individual can be characterized by specific notes of his/her personality, through the stabile components of the motivations, it means interests, convictions, life ideal and world outlook.

Therefore, the motivation represents a set of stimuli or motives – needs, platforms, tendencies, attractions, interests, convictions, strivings, intentions, aspirations, aims, ideals – which internally sustain the realization of certain actions, facts, attitudes P. Golu, I. Golu, 2002). In the motivation are involved unconscious, conscious, physiological, intellectual, cultural and social factors.

The needs are elements of motivation, which notice the internal imbalances which trigger tensions, to be deactivated, Maslow, A. quoted by M. Modrea, 1998), ranked the needs under the form of a pyramid, having as fundament the biological needs and over them those regarding the security, affiliation, status, followed by the cognitive and esthetic ones, having the self-realisation in the top of the pyramid.

The needs appear along the human evolution and the biological and security needs are present even from the birth.

The needs of esteem and status appear at the puberty age, while the cognitive and esthetic needs become more evident in the adolescence time. The need of self-realization appears in adolescence and youth periods and personalizes the individual.

All actions, including the sport ones, have a motivating support and the motive structure directly related to the activity we carry out represents the motive.

By motive we understand the reason serving as ground for a conduct o concrete action P. Golu, 2000). The motives proceed from the awareness of the needs and they launch actions aiming their fulfillment. The motive is individually directed to an aim and it provides the necessary energy to sustain the action. However, the motives are not always conscious and some of them are launched by the unconscious.

The motives are durable, active and selective elements which direct the individual to a certain activity area, aiming to get satisfaction thanks to the carried-out activity. In the structure of a motive there have to be two components: an energizing segment P. Neveanu, Popescu, 1998) and an orienteering segment T. Crețu, 2004). The motives are the causes of the human behavior. According to A. Cosmovici and L. Iacob 1998), "*a motive is a psychical structure, taking to the orientation, initiation and adjustment of actions towards an aim, more or less specified"*.

The convictions are ideas an individual prefers, being ready to involve himself/herself in it and to act accordingly. The convictions are durable elements firmly sustaining the individual's actions.

The ideal of life represents the future projection of an individual, the force pushing him/her to put into practice the perspective dream M. Modrea, 1998).

The world outlook becomes the most complex component of the motivation and it is developing in the adolescence period, when the intellect is getting its highest capacity.

The level of aspiration A. Cosmovici, L. Iacob, 1998) is stimulated by the individual's possibilities, according to his/her aptitudes. The school is the institution which has to discover the children's aptitudes and to stimulate their aspirations, supporting the young people in reaching an optimum level of aspirations.

According some studies of Festinger, mentioned by A. Cosmovici, 1996) after a victory the level of aspiration increased in 51% of subjects and after a failure 64% of subjects deceases in the level of aspiration.

The pleasure of reward and the fear of being punished are motive structures which appear early and they play the role to stimulate and to orientate the activity T. Crețu, 2004).

The motivation of children for movement, for the physical activity is stimulated by playing, curiosity, wish to distinguish himself/herself, to explore and to enjoin pleasure.

The children wish to play. Anytime, anywhere and endless. Playing covers many time in childhood, representing a large field of getting experience, a leisure and pleasure activity. *„A child no wishing to play is a child which personality is not emerging, being content to remain little and weak, without pride, without future"* J. Chateau, 1976, quoted by E. Sabau, 2003).

Through the play, one can study the social behavior of individuals and implicitly of the future athletes. It is important to do not impose to the children the movements they have to learn, but to stimulate them, to excite their *curiosity,* their *wish to distinguish themselves* and particularly their *pleasure* to solve positively the action to be learned.

When the motor actions are successful appears evident the pleasure as well as the children' motor possibilities. *Playing is regarded as a pleasure, an amusement activity, free of stress, but*

the child comes to it with the highest seriousness, as a major opportunity to express his/her ego E. Sabău, 2003). In the very fact, children need to play, to join groups and to distinguish themselves inside of a group.

The play as a learning method in the sport activities allows to establish differences between the characteristics of movements and actions carried out during the training and those belonging to the play. The play represents an ideal and efficient activity to learn and a permanent motive to have activity.

The play as mean of training and the training as mean of play must to be interesting, to create situations stimulating the pleasure for the sport practice.

Playing and training have an evident motivating support and therefore these activities have to stimulate the children to be independent, to be conscious of their capacity, to stimulate their self-confidence after a victory, being supported and encouraged to overcome difficulties and to solve the motor problems. The motivating support helps to improve the results and the performances of the future athletes, to perfect the motor abilities.

The sport performance stimulates the motivation and the involvement of the children in the sport practice and it will prevail in the behavior of the future athlete. E. Hahn, 1996).

Getting sport performances, a new level of the personal demands leads to a certain expectancy, which can rebuild a strong motivation. In the performing sport, the motivation evaluates according to the proposed aims, associated with the subjects' sport formation stages.

S. Toma 2008) studied motivation in rowing and found out that the main reasons for the practicing were: self assertion, interest for competition, desire to win, compensation, need to move.

The motivation related to the sport performance is associated with the *hope of success* and the *fear of failure* and their intensity is measured according to the general motivation Gabler, 1976, quoted by E. Hahn, 1996), through:

- *a positive growth* according to the plan of concrete aims and actions);
- *a negative conduct* which may appear among the parents and coaches).

Despite to the fact children have a biological need to move, some ones do not confirm it. It's the case of children having reduced aptitudes to move or living in hostile area for motion.

The possibilities to optimize the motivation in the performance sport depend on the following elements according to Hecker şi Kleine, 1982, quoted by E. Hahn, 1996):

- introduction of age categories for the children involved into a training process;
- psychological education, according to the age;
- demonstration of complex motor actions, showing images; preparing tests before competitions.

M. Pehlivan 2010) found out some reasons that motivate young people to continue sport activities: protection of the body health, enjoyment/appreciation, development of ability, protection of mental health.

The interest for the performing sport is a result of personal experiences, through a training process E. Hahn, 1996). For most of children, the interest for the sport activity is initially due to external factors, like the family, teachers, friends and the children's interest for sport grows later, according to their own experiences.

The child wishes to exhibit his/her motor abilities, up to his/her maximum possibilities. At the same time, he/she wants to compare, to compete and to get primacy among other children. Such tendency must be taken in mind when children are directed to a sport organized activity.

The sport, the training and the competition become activities where the child complete his/her concept of life and fix up his/her expectations.

Success and accomplishments in sport activity consolidate the children's motivation for sport. If the new learned things give pleasure, emulation and feelings during the sport competitions finishing by victories, the children's motivation and participation into sport activity will be more consolidated.

G. E. Ilker and G. Demirhan 2010) suggest that physical education teachers have to create an motivational climate for students who practice sports.

The training orientation having the goal to improve the children's motivation to get better performances will take in mind:

- a clear performance aim in the training plan;
- never a senior training should be used for children;
- never the senior competition system should be used for children;
- training and competitions will be criteria to select children for the next stage;
- children will be not used to aggressive gestures in benefit of a victory with any price;
- the training tasks will incorporate structures in benefit of performance motivation.

The training for children will be focused on the athlete and the work will be careful, motivated, safety, avoiding any excess during the preparation, as a failure could create unpleasant emotional reactions aggressiveness, rejection of performance ideas, interruptions of training) or subjective justifications lack of chance, indisposition). If a failure occurs, there will be a serious analysis of its causes, specifying to each child the mistakes which led to it.

The assessment of the results has the aim to create motivating systems, by two reasons:

- to identify the deficiencies to be removed;
- to evaluate the athlete in view of a correct reward.

The training and the competition, interdependent structures, through their purposes lead to a higher level of aspirations.

An important role in directing the motivation corresponds to the coach, as an external stimulus of motivation. The teacher and the coach have to act carefully, as at the children's age the interests are not consolidated enough and they could easily give up their sport activity, if it should be difficult and restrictive.

However, there are also some aspects which can reduce the children's motivation for the sport:

- An early task to get difficult goals, so the interest of children for performance sport could be reduced;

- Training monotony, aiming exclusively higher results, can affect the stability of children's motivation, who enjoy also the emulation part of the sport activity;

- A team failure, especially in long distance competition, can reduce the child's motivation to follow the sport activity;

- Long term goals, in which there are not emulating episodes, can reduce the motivation and leave to give up the initial aim, as well as the sport activity.

According to M. Epuran, 1996) motivation can be trained in childhood. For this the children must know that there are some goals for their activity and the objectives are planned for a period of time.

A study on the reasons of involving students in compulsive school, found out that they are not motivated to continue sport activities, because of: preparing the lessons, financial support, attendance problems, failure, reduced interest and desire and injuries and disorders M. Pehlivan, 2010).

I. Simonek and M. Fotkova 2006) found out the reasons for practicing sports in childhood: parents wish, children pleasure for sport, friends example, the wish win, improving fitness, improve the posture, other causes.

Methods

The purpose of this study is to detect the main reasons that stimulate children in practicing sports.

The main method of research is the survey. We had a set of 10 questions. The subjects' responses were analyzed quantitatively and qualitatively.

Subjects; 60 children aged 8 to 10 who practice individual sports, such as: gymnastics rhythmic 18), swimming 20) and athletics 22).

Analysis of the results

1. Do you like your sport?

Most of the children answered they like their sport. They like very much their sport: 95% of female gymnasts, 86% of athletes and 61% of swimmers. However, 16% of swimmers and 9% of athletes answered they do not like so much their sport.

Table 1 Item 1 Answers

Do you like your sport?	Gymnastics %)	Swimming %)	Athletics %)
Very much	95	61	86
Much	5	23	5
Not so much	-	16	9

2. How did you decide to do sports?

Regarding their sport option, most of the children started in sports for their parents wish: 71% of female gymnasts, 64% of athletes and 51% of swimmers. A small part of them, 9% of athletes were involved into sport by their friends. Almost same percentage in gymnastics and athletics decided by their wish to practice sports.

Table 2 Item 2 Answers

How did you decide to do sports?	Gymnastics %)	Swimming %)	Athletics %)
So decided your parents	71%	51%	64%
So advised your friends	-	-	9
You decided it	29%	49%	27%

3. Which reason do you do sports for?

The strongest reason to do sports has been the pleasure; so answered 41% of swimmers, 33% of female gymnasts and 32% of athletes. The following reason was the parents' wish 39% of swimmers, 36% of athletes and 29% of female gymnasts). The wish to become a performing athlete involves a lot of female gymnasts 24%), then track and field athletes 9%) and swimmers 7%). The wish to be stronger thanks to their sport was expressed by 23% of athletes, 14% of female gymnasts and 13% of swimmers.

Table 3 Item 3 Answers

Which reasons do you do sports for?	Gymnastics %)	Swimming %)	Athletics %)
So decided the parents	29	39	36
You like sport	33	41	32
So you feel stronger	14	13	23
You believe to be a professional one	24	7	9

4. How many times do you train every week?

The frequency of 5-6 lessons every week could be found among 81% of female gymnasts and 39% of swimmers. Three-four times every week train 48% of swimmers and 19% of gymnasts. All athletes have only two trainings every week.

Table 4 Item 4 Answers

How many times do you train every week?	Gymnastics %)	Swimming %)	Athletics %)
2 times/ week	-	13	100
3-4 times/week	19	48	-
5-6 times/week	81	39	-

5. Do your parents condition your trainings/competitions to be not absent at the school, to do your home works or to have some kind of conduct)?

The gymnasts parents less condition the sport activity 71%), followed by the athletes' 59%) and swimmers' 36%). In other words, more conditions have from their parents the swimmers 64%), then the athletes 41%) and the female gymnasts 29%).

Table 5 Item 5 Answers

Do your parents condition your Trainings?	Gymnastics %)	Swimming %)	Athletics %)
Yes	29	64	41
No	71	36	59
I do not know	-	-	-

6. Do your parents support you to do sports?

The majority of children consider they are very supported by their parents to do sports: 90% of female gymnasts, 84% of swimmers and 68% of athletes. Enough support get from their parents 32% of athletes, 13% of swimmers and 10% of female gymnasts. Among swimmers, 3% answered they have not enough support from their parents for the sport activity.

Table 6 Item 6 Answers

Do your parents support you to do sports?	Gymnastics %)	Swimming %)	Athletics %)
Very much	90	84	68
Enough	10	13	32
Not so much	-	3	-

7. How do your parents support you to do sports?

The most part of the female gymnasts 67%) consider they are supported by their parents who are present during the competitions, as well as by their positive evaluation of the results 24%) or by their encouragement 9%). The most part of the swimmers 45%) consider they are supported by their parents who appreciate the results, 29%) and 26% by the assistance of their parents to the competitions. The athletes are supported by the parents'assistance 41%), by their encouragement 31%) and by their consideration to the results 28%).

Table 7 Item 7 Answers

How do your parents support you to do sports?	Gymnastics %)	Swimming %)	Athletics %)
Going to your competitions	67	26	41
Appreciating your results	24	45	28
Encouraging you to follow	9	29	31

8. What do you need to get better results in your sport?

The children consider they need first of all training: 71% of female gymnasts, 68% of swimmers and 45% of athletes. In their opinion, afterwards they need the parents' encouragement and here the percentages are very close 32% of athletes, 29% of swimmers and 24% of female gymnasts). But they need also financial support: 23% of athletes, 5% of female gymnasts and 4% of swimmers.

Table 8 Item 8 Answers

What do you need to get better results in your sport?	Gymnastics %)	Swimming %)	Athletics %)
More training	71	68	45
More encouragement from the parents/coaches	24	28	32
Financial support	5	4	23

9. Are you talented for your sport?

The most part of the female gymnasts consider they have talent for their sport 59%), a less percentage considers they have an outstanding talent and 3% consider themselves less gifted. Among the swimmers, 52% consider they have a lot of talent, 46% have enough talent and 2% are less gifted. The most part of the athletes 68%) consider they are very gifted, 27% have enough talent and 5% are less gifted.

Table 9 Item 9 Answers

Are you talented for your sport?	Gymnastics %)	Swimming %)	Athletics %)
Very much	38	52	68
Enough	59	46	27

Less then I need to be	3	2	5

10. Are you an athlete's fan?

A high percentage of the female gymnasts 76%) have a model in their sport activity and only 24% have not such model. Only 32% of swimmers have an example to follow, but most of them 68%) have not anyone. Among the athletes, only 36% have a model to follow, but 64% have not such model.

Table 10 Item 10 Answers

Are you an athlete's fan?	Gymnastics %)	Swimming %)	Athletics %)
Yes	76	32	36
No	24	68	64
I don't know	-	-	-

Conclusions

- Children aged 8-10 enjoy very much their sport activities.
- The great majority of children aged 8-10 were directed to the sport disciplines by their parents.
- The main reasons impelling the children aged 8 – 10 to do sports are connected, in a considerable equal degree, to their parents' option and to their own pleasure.
- At this age of 8 – 10 years, more training sessions every week have the female gymnasts than the swimmers and athletes.
- The participation of female gymnasts in sport activities is less conditioned by the parents. On the contrary, the most part of swimmers felt restricted by their parents to take part in trainings.
- The great majority of little sportsmen receive a big support from their parents to do sports. Most of female gymnasts and athletes appreciate the support of their parents while assisting to their competitions. The swimmers appreciate the parents' support considering their encouragement regardless the results.
- The little swimmers and athletes consider they are very gifted, while the female gymnasts think they have enough talent.
- Answering the questionnaire, most of the female gymnasts confirmed they have a model to follow, but many swimmers and athletes have not an example or point of reference in their practice yet.
- At this age, 8 – 10, the reason to do sports is influenced by the parents' option
- The female gymnasts, who started early their sport activity seem to be more aware of the importance of their sport activity, being apparently more mature than their contemporary colleagues involved in swimming and track and field.

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TYPOLOGY AND PROFILE OF SPINE MUSCLES. STRUCTURE OF MYOFIBRILS AND ROLE OF PROTEIN COMPONENTS – REVIEW OF CURRENT LITERATURE

STRATON ALEXANDRU[1], ENE-VOICULESCU CARMEN[1], GIDU DIANA[1], PETRESCU ANDREI[1]

Abstract. Muscular profile of spine muscles has a great importance in trunk stability. It seems that muscles which support the spine show a high content of red muscle fiber with a cross section area equal or higher than white muscle fibers. It is possible that lumbar extensor muscles to have different functional capacity between sexes. Most of the myofibril structural proteins except protein actin and protein myosin have a role in maintaining the structural integrity of muscle cell.

Key words: muscle, fibres, myofibrils, proteins, spine.

Introduction

Proper understanding of muscle fibers profile of muscles supporting the spine and the role of muscle cell structural proteins leads to better achievements in performance training and rehabilitation.

Muscle fibers typology

Skeletal muscle contains two major types of muscle fibers: slow twitch red or type I fibers) and fast twitch white or type II fibers). Slow fibers reach peak tension in about 110ms milliseconds) from the moment of stimulation, and rapid fibers reach peak tension in about 50ms from the moment of stimulation. So, fast twitch fibers have a rapid response time to stimulation, more than twice reported to slow twitch fibers.

Until now, we have identified only one type of slow twitch fibers and four types of fast twitch fibers: IIa oxidative-glycolitic, IIx oxidative glycolitic which has some physiological and biochemical differences, such as time of contraction, motoneuron size, fatigue resistance or oxidative capacity, maximum time of use, power output, mitochondrial density, etc., than IIa fibers), IIb predominantly glycolitic and IIc A. Nicu şi L. Baroga, 1993) which contain transformation myosin, characterized by the shift from the fast twitch fibers to slow twitch fibers G. Dumitru, 1994). The difference between type IIa fibers and type IIb predominantly glycolitic is characterized mainly by fatigue and oxidative capacity and frequency of recruitment type IIa fibers, it seems that are frequently recruited, than type IIb fibers); slow fibers are mostly recruited and type IIc fibers are poorly recruited.

On average, the vast majority of muscles are composed of 50% type I fibres, 25% type IIa fibers, 22-24% type IIb fibers, and 1-3% type IIc fibers. However the exact percentage of these types of muscle fibers varies considerably in different subjects and different muscles J. H. Wilmore and D. L. Costill, 1994).

Muscular profile at the level of thoraco-lumbar spine

Sirca A. and Kostevc V., 1985) showed that thoracic muscle structure lying superficial and deep is composed of 74% type I fibers, lumbar muscle structure located superficially is composed of 57% type I fibers and lumbar muscle structure located deep is composed of 63% type I fibers. Type I muscle fiber diameter is significantly larger than that of type II fibers. Another study, conducted on 42 patients divided into two groups - 21 patients with lumbar back pain and 21 patients without lumbar back pain almost identical groups as gender, age and body mass index) showed that back muscles of patients with lumbar back pain, has a higher glycolitic profile rich in white fibers) A. F. Mannion et al., 1997b).

Mannion A. F. et al., 1997a), in a study of 17 male subjects and 14 female subjects, using the method of muscle biopsies performed in the corresponding spinal extensor of ten thoracic vertebrae and three lumbar vertebrae, showed that the ratio of cross-sectional area and the smallest diameter of the corresponding muscle fiber is higher in the thoracic region, compared to the lumbar region. Also, no significant differences were found between the two regions on the percentage of type I fibers, cross-sectional relative area of type I fibers and the ratio of cross sectional areas of type I fibers and, respectively, type II fibers. Male subjects have a muscle fiber cross-sectional area bigger than female subjects for all types of muscle fibers and in both regions - thoracic and lumbar - of the spine. Also, male subjects have a similar average of cross-sectional area for all types of muscle fibers, compared to female subjects, who have an average cross-sectional area increased in type I muscle fibers than type IIa fibers and IIb fibers, the latter showing no significant differences in average cross-sectional area. Therefore, fiber characteristics of spine extensor muscles differ from those of skeletal muscles by, the relative predominance in size of type I fibers slow twitch fibers or red fibers), reflecting the complex role of those muscles in maintaining posture Mannion A. F. et al., 1997a).

Also at the level of the spine extensor muscles, in a study of 16 subjects 9 male and 7 female, aged between 20 and 30 years) using the muscle biopsies method performed in the lumbar region of the human erector spinae on multifidus and the longissimus muscles, showed no significant differences between

[1] Faculty of Physical Education and Sport, Ovidius University of Constanta, ROMANIA
Email: stratonalex@gmail.com
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the two muscles on the relative occurrence of type I fibers 62% versus 57%), type IIa fibers 20% vs. 22%), type IIb fibers 18% vs. 22%) and, on the absolute size of muscle fibers average between 58 and 66 microns). In female subjects, type I fibers occupied a larger relative area than male subjects 70-75% vs. 54-58%), even though the relative number of type I fibers was similar for both sexes. This can be explained by a cross-sectional area of type II fibers smaller than the cross sectional area of type I fibers, in women. These data suggest a different functional capacity of the lumbar extensor muscles between sexes A. Thorstensson and H. Carlson, 1987).

Another study realised on 13 subjects 9 females and 4 males, aged between 24 and 55), using the muscle biopsy from the abdominal muscles right abdominal muscle, oblique external abdominal muscle, oblique internal abdominal muscle and transversal abdominal muscle) showed that there are significant differences between subjects, in muscle fiber type variation. Mean distribution of muscle fibers was 55-58% type I fibers, 15-23% of type IIa fibers, 21-28% of type IIb fibers and 0-1% type IIc fiber. Muscle fibers diameter was similar for most muscle groups studied average 50-54 microns), except transversal abdominal muscles which had a smaller diameter for the type II fibers average 45 microns). Also, muscle fiber composition, histochemically studied at different abdominal muscles, appear to exert similar functional capacity T. Häqqmark and A. Thorstensson, 1979).

Structure of myofibrils and role of protein components

Muscle-tendon structure is a complex biological organ capable of generating considerable force in order to stabilize and/or move the body segments and in energy absorption, which acts on the human body. This muscle-tendon structure is controlled by neural impulses, generating power by converting chemical energy into mechanical energy. Mechanical behavior of muscle contraction is directly related to macroscopic and microscopic structures and properties of muscle-specific proteins, which constitute the structure of muscle. Muscle-tendon unit is very adaptable, adjusting the structure and form of component protein in response to environmental stimuli changes.

Muscle fiber is formed by myofibrils, which in turn are divided longitudinally in sarcomere the region between two Z lines) and radial in myofilaments. Myofilaments are often classified in thick filaments and thin filaments.

Each thin filament which consists mainly of actin protein) is composed of two macromolecular subunits as wire) twisted together. These wires are composed of repeated subunits monomers) of protein G-actin globular actin). A G-actin molecule contains about 374 amino acids. These small ellipsoid molecules are joined front-to-back in long chains forms, twisted to form a helix structure F-actin), which at seven G-actin monomers is twisted by about half arc circle. Each chain of F-actin is a polymer composed of about 200 G-actin molecules R. M. Enoka, 1994). Each G-actin monomer has an active site in which myosin molecules can couple during muscle contraction. The groove formed along the helix structure is a series of fibrous elongated protein molecules called tropomyosin. Each tropomyosin molecule spans on a distance of seven G-actin monomers along F-actin groove R. R. Seeley et al., 2004). At one of the ends of the tropomyosin molecule there is a protein complex called troponin consisting of three adjacent subunits: troponin-C capable to reversibly bind calcium ions, troponin-T which attaches the this complex troponin) on tropomyosin and troponin-I that has an inhibitory function inhibits four to seven G-actin molecules to bind on the myosin, when tropomyosin is present). Troponin-C has four binding sites, two for Ca^{2+} ions and two for Ca^{2+} ions or Mg^{2+} ions R. M. Enoka, 1994). There are also, differences in troponin-C protein, corresponding to fast fibers compared to slow fibers S. V. Perry, 1985). Troponin-tropomyosin complex regulates skeletal muscle contraction, through the influence of actin activity R. M. Enoka, 1994).

Fundamental unit of thick filaments is myosin, a complex molecule with several distinct regions. Most of the length of this molecule forms a region often called the "tail" composed of light meromyosin LMM). The rest of the molecule, heavy meromyosin HMM), is composed of a protein chain that ends with a section called globular head. Globular portion, called the S1 region subfragment 1) is responsible for chemical and enzymatic activity, which produces muscle contraction. It also contains the actin binding site, which can interact with the thin filament, and the place of ATP binding site, which is involved in energy supply to achieve muscle contraction process. The chain protein, called S2 region subfragment 2) serves as the flexible bind like a hinge) between the globular portion and the tail region. Associated to S1 region, there are two opened peptide chains attached, with a much lower molecular weight. Essential peptide chain is necessary for the functioning of myosin and regulating peptide chain can be phosphorylated during muscular activity and modulate muscle functioning. Functional myosin molecules are paired, tails and S2 regions are twisted throughout all their length, and the two globular ends both showing the two peptide chains, essential and regulating, the actin binding site and ATP binding site) are adjacent to each other.

In addition to proteins directly involved in the process of muscle contraction actin and myosin proteins), there are other important structural protein in the maintenance of sarcomere structure during muscle contraction.

Titin is a large filamentary elastic protein, which spans from the Z line to the unisolated portion of the myosin filament line M) S. I. Fox, 2003), with role in

preventing sarcomere supra-elongation and in maintaining of A band in center A. J. Vander et al., 2001). Protein titin also acts as sarcomere regulator during myofibrilogenesis. Basically, titin is responsible for passive elastic properties of the relaxed muscle. Titin has a strong connection with M protein, corresponding to M line P. V. Komi, 1992).

M-protein maintain thick filaments in a regular order. Myomesin form strong anchor points for titin protein P. V. Komi, 1992), interacts with protein myosin and is located in the M band. Both myomesin and M-protein are involved in anchoring thick filament from the third elastic filament system formed primarily from titin protein), because both proteins have affinity for thick filament components, myosin, and titin W. M. Obermann et al., 1997). Myomesin protein seems to be the primary link between the thick filaments and elastic filaments because, in contrast with M-protein found only in type II fibers, it is found in all types of skeletal muscle fibers B. K. Grove et al., 1989, D. Auerbach et al., 1999). M-protein appears to have function only in fast motor units composed of type II muscle fibers.

M-creatine kinase protein M-CK, Muscle-Creatine Kinase) participates in the production of ATP from creatine phosphate CP or PCr), and is located near the myosin head Komi P. V., 1992).

Nebulin is a filamentary protein, which lies along the thin filaments composed primarily of actin protein, with role in stabilizing the thin filament elongation during muscle development and in guiding the thin filaments in the moment of interpenetration with thick filaments, after the return to normal of supra-elongated myofibril G. Dumitru, 1994).

C-protein seems to keep thick filaments in a regular order. It is speculated that maintains H-protein equidistant near the thick filaments during force production, and controls the number of myosin molecules from the thick filament. C-protein, H-protein and X-protein are components of myosin thick filament K. Yamamoto, 1988, R. Starr et al., 1985). It has been demonstrated, in animal studies, that C-protein is present in high amounts in fast fibers white) type IIa, IIx and IIb fibers and is absent from red fibers slow or type I fibers), while X-protein is present in high amounts in type I fibers and type IIa fibers and absent in type IIb fibers. The presence of H-protein in the muscle fibers depends on which muscle is studied; for example, in the rabbit psoas muscle, H-protein is found in large quantities in white) type IIb fibers and is absent from slow) type I fibers and white) type IIa fibers, and in the rabbit plantaris muscle, H-protein is found only in a few type I fibers and is absent in white) type IIb fibers R. Starr et al., 1985, P. Bennett et al., 1986).

Dystrophin, which is inside of sarcolemma, participate in the transfer of force, from the contractile system to outside of the cell, through the membrane composed of integrin proteins. Dystrophin is a cytoplasmic protein and is a vital part of costamere or dystrophin associated protein complex. Costamere is a structural-functional component of striated muscle cells; is a subsarcolemal protein complex, circularly aligned in disc Z plane, linking peripheral myofibrils from sarcolemma. Many muscle proteins as α-dystrobrevin, syncoilin, synemin, sarcoglycan, distroglycan and sarcospan are parts of costamere along with dystrophin. Focal adhesion proteins or cell-matrix adhesions which are specific types of large macromolecular assemblies through which mechanical force and regulatory signals are transmitted) found in costamer include vinculin protein, talin protein, α-actinin protein and β_1-integrin protein J. M. Ervasti, 2003).

Dystrophin associated glycoprotein complex contains varied proteins as sarcoglycan and distroglycan which seems to be responsible for the relationship between the internal cytoskeleton system subsarcolemal) of a myofibril with extracellular matrix structural proteins ex. collagen and laminin) R. H. Crosbie et al., 1997).

Syncoilin is an intermediate filamentary protein which interacts with α-dystrobrevin protein and desmin protein, and is found in the neuromuscular junction, sarcolemma and Z lines. Is also possible that syncoilin protein is involved in anchoring desmin intermediate filament proteins networks in sarcolemma and in neuromuscular junction. This interaction appears to be important in maintaining muscle fiber integrity and may also bind dystrophin associated protein complex from cytoskeleton E. Poon et al., 2002; C. Moorwood, 2008).

Synemin or desmuslin) is an intermediate filament protein located in the Z disc, which interacts with α-dystrobrevin protein D. J. Blake and E. Martin-Rendon, 2002), α-actinin protein and desmin protein. Synemin protein or desmuslin protein) has a role in transmitting mechanical force laterally through the tissue, especially between myofibrils and extracellular matrix. Also, desmuslin protein or sinemin protein) serves as a binding system between the extracellular matrix and Z discs through plectin protein), playing an important role in maintaining the integrity of muscle cells Y. Mizuno et al., 2001).

Plectin protein have direct connection with subcomponents of three major cytoskeleton filamentary networks, skeleton of subplasma membrane proteins and a variety of plasma membrane-cytoskeleton junction complexes; more specifically plectin protein acts as a binding component between the three main components of the cytoskeleton: the actin microfilaments, microtubules polymer formed by macromolecular complexes of α-tubulin and β-tubulin, which are members of the protein tubulin) and intermediate filaments called intermediate because they are 10nm in diameter, placing itself in size between the actin microfilaments and microtubules) T. M. Svitkina et al., 1996). These data lead to the concept that protein plectin have an important role in organizing the cytoskeleton network,

with consequences for the viscoelastic properties of cytoplasm and resistance and mechanical integrity of cells and tissues G. Wiche, 1998).

Vimentin protein is part of the intermediate filament protein family, which together with microtubules and actin microfilaments forms the cytoskeleton, existing as a dynamic structure most of the intermediate filamentary protein presents stable structure) to provide flexibility to the cell. It is generally accepted that, vimentin protein is a component of the cytoskeleton responsible for maintaining cellular integrity.

Vinculin protein is involved in the link between integrin adhesion protein molecules and actin cytoskeleton.

Catenin protein is found in complexes along with cadherin protein, cell adhesion protein molecules. There are four catenin proteins: alpha- α-), beta- β-), delta- δ-) and gamma γ-) catenin. α-catenin protein can bind with β-catenin protein or actin protein. β-catenin binds the cytoplasmic domain of some cadherin proteins. Cadherin is a class of type-1 transmembrane proteins that have important roles in cell adhesion, liaising between muscle cells; also caderin protein is functionally dependent Ca^{2+} ion. Cadherin protein family includes protocadherin proteins, desmogleina proteins, desmocollin proteins, etc..

Alfa-actinin α-actinin) protein associated with Z line, is anchoring thin filaments to Z line structure G. A. Tanner and R. A. Rhoades, 2003). It seems that the Z line corresponding to red fibers slow twitch) have a higher amount of α-actinin than Z line corresponding to white fibers fast twitch) P. V. Komi, 1992).

Intermediate filamentary protein desmin is mainly located in the peripheral area of the Z disc, as one of the physical links between the Z disc and sarcolemma; it forms a "scaffold" around Z disc, connecting Z disc by subsarcolemal cytoskeleton. Desmin protein forms lateral links between myofibrils by connecting the Z discs, maintaining sarcomers in order. The essential role of this intermediate filament protein is found in maintaining structural and mechanical integrity of the contractile apparatus, during and after muscle contraction D. Paulin and Z. Li, 2004; Z. Li et al., 1997), but also in force transmission through the cytoskeleton S. B. Shah et al., 2004).

Connections between intermediate filament protein system, dystrophin protein and specialized membrane complexes provides the path of force transmission to extracellular matrix material T. J. Patel and R. L. Lieber, 1997).

Outside the cell, laminin protein forms a link between integrin proteins and extracellular matrix G. A. Tanner and R. A. Rhoades, 2003). Integrin proteins are receptors which mediate attachment between cells and surrounding tissue. Also, integrin proteins have a role in cellular signals complex system of communication that governs basic cellular activities and coordinates cell actions) and, therefore, regulates cell shape, motility and cell division cycle. Integrin proteins work together with other proteins such as cadherin proteins, selectin proteins and syndecan proteins to mediate cell to cell and cell to matrix interaction and communication. Integrin protein binds the surface cellular components as fibronectin, vitronectin, laminin and collagen. Functional and structural defect of laminin proteins can cause an inappropriate muscle development, leading to some form of muscular dystrophy.

Collagen is a natural group of proteins constituting 1% to 2% of muscle tissue. In human body there are several types of collagen so far, only 29 types of collagen have been identified), but only type I collagen is the most abundant protein in the human body G. A. Di Lullo et al., 2002), representing over 90% of body collagen. Type I collagen is found in tendons, skin, artery walls, myofibrils endomysium, fibrocartilage and is an organic part of bones and teeth. Type II collagen is the base of hyaline cartilage and articular cartilage; it represents 50% of all cartilage proteins and 85-90% of articular cartilage collagen.

Parvalbumin is a protein located in the fast twitch fibers cytosol, which accelerates the relaxation of muscle after rapid contractions, by coupling the cytosolic Ca^{2+} in exchange of Mg^{2+}. Affinity for Ca^{2+} of parvalbumin is greater than that of troponin-C A. Despopoulos and S. Silbernagl, 2003).

Conclusion

At the level of the spine muscles the number of red muscle fibers is higher than white muscle fibers and red muscle fibers have an equal or higher cross sectional area than white muscle fibers, reflecting the complex role of those muscles in maintaining posture. Differences between red and white fibers type in lumbar extensor muscles registered between sexes may lead to a different functional capacity of those muscles. The most important aspect of the myofibril structural proteins, except protein actin and protein myosin, is to maintain the structural integrity of muscle cell.

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❖ VARIA

POLITICAL INTERFERENCE IN THE SPORT ASSOCIATIONS IN THE COUNTRIES OF THE WESTERN BALKANS

MLADEN KARADZOSKI[1], JULIJANA SILJANOSKA[1]

Abstract
The goal of this paper is to explain the existence and the level of poitical interference in the activities and programmes of the sport associations in the countries of the Western Balkans. The influence of the politics into the activities of the sport associations is usually negative and it is missused for political purposes. Politics destroyes the sport spirit and demotivates young people to work on their sport career, instrumentalizing them for political interests. The political interference into the sport associations is very evident in the countries of the so-called Western Balkans and it hampers on the Eurointegration proccesses of the candidate and potential candidate countries.
The main conclusions which we want to draw from this paper, is to proove that there is a high level of political interference in the work and activities of the sport associations in the countries of the Western Balkans, but also to try to find adequate solutions for a reduction or marginalization of these interference.
Key words: interference, sport, politics, Balkans

Introduction

Symbiosis between sport, politics, business and media is an imanent part of the society. The level of interference of these elements determines the level of the development of the sports in one country. However, different parts of the world and Europe have different situations in the sport, regarding sport culture, finances and development. Western Balkans is a political and geographical area which comprises Macedonia, Albania, Serbia, Montenegro, Croatia, Bosnia and Hercegovina and Kosovo. Political, economic, cultural, educational and sport situation in these countries is different from the others, more developed parts of Europe. We can not say that political and business interference is absent in the Western Europe countries Italy is appropriate example for a mix of politics, media and sport), but still, it is on an acceptable level and it generates some damages for the sport, but does not destroy it.

The research objective of this paper is to show the influence and interference of the politics in the work of the sport associations, especially in the countries of the Western Balkans. In this way, we can scan the real situation regarding the functioning of the sport associations in these countries, but also suggest concrete measures how to reduce and marginalise this interference, or how to direct it in a favour of the sport associations and sportists.

Researh hypothesis

We can make three general hypothesis which will be researched in this paper: If the political interference is infiltrated in the sport associations, the sport results will be on a lower level; If sportists are involved in politics, their influence of the young people will be negative; If the sport associations are financially independent, the political interference in their work will be marginalised.

Research methods

Using the comparative method, we will show the political interference in the sport associations in each of these countries, and then we can draw general conclusions. We will use the analytical and syntetical method to describe and analyze the documents, legal acts and articles which show us how are these relations regulated, but also disrespected.

Content

There are various types of elements that hamper the development of the sport in the countries of the Western Balkans. Some of them are connected with the commercialisation of the sport. It can be manifested in several ways: privatisation of television rights by certain media; concentration of wealth in certain clubs and leagues; club ownership by unscrupulous capital owners; match-fixing and corruption scandals; wage inflation on the players market; black market for tickets; doping; bankruptcy of European clubs and clubs from the countries of the Western Balkans; money laundry; internet piracy and ambush marketing; trafficking and exploatation of young players from Africa and South America; an uncontrolled "player agent industry"; under-investment in the training of the young players; illegal bettng and internet gambling outside tax control; hooliganism, racism and xenophobia among supporters, sexual offences and insecurity at the stadiums; etc. E.Henning, 2008)

The subject which has come to be identified under the heading "Sport and politics" is a vast and complicated one. In trying to gain a better

[1]Faculty of administration and management of information systems – Bitola, State University "St.Kliment Ohridski" – Bitola, MACEDONIA
Email: mladenkaradzoski@yahoo.com
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understanding of the subject there may be many useful approaches, but perhaps it is the best to start with a familiar slogan "keep politics out of sport", which is the battle-cry for one side of a common dispute. This is easy and nice to say, but unfortunately, very hard to implement in practice.

The political exploitation of the global sports spectacle and cultural and economic ramifications of its staging have been critical indices of the intensifyng globalization of both media and sport. Sports events celebrating the body and physical culture have long been driven by political and ideological motives, from the ancient civilizations of Greece and Rome to the societes of early modern Europe, in more modern Western societes as well as less developed and non-Western ones. This is never more so than when such events purport to be spheres of neutrality and embodiments of universalist and idealist principles. Spectacles have been justified on the basis of their potential to realize shared, global modes of identity and interdependence, making real the sense of a global civil society. Understanding this form of spectacle, and the extent to which its claimed goals have been met or compromised, contributes to an understanding of the sources of ethnocentrism, and to debates concerning the possibility of a cultural cosmopolitism combining rivalry, respect, ans reciprocal understanding. Analyzing the global sports spectacle is a way of reviewing the contribution of international sport to the globalization process generally, and to processes and initiatives of global inclusion and exclusion.

In order to describe the possible forms of interference of politics in sport, it is first necessary to describe sport clearly. Sport is physical activity in which the pursuit of excellence, and the agonistic principle are the guiding rules. The activity is competitive and success is dependent on effort within a set of abilities specified by the rules, which also are designed to create equality of opportunity. Sport endeavour demands sacrifice, dedication and training. Winning is taken as a sign of excellence provided than certain conditions are fulfilled: the competitors must be worthy, the rules must be obeyed and the victory must not be due to chance. The basic purpose of the sportist is to do his/her best, achieve his/her potential which develops by training. The way he/she approaches this personal limit is by trying to be the best among people with a similar purpose. Striving to win among like minded people is a mechanism which is the most likely means to brings the sportist near to his/her limit. Politics can be said to interfere with sports when non-sport factors arising from the exercise of power between groups adversely affects the pursuit of excellence. Usually this interference is the result of governments using some part of the sport system for non-sport objectives on their own. It seems that there are two central ways in which the political use of sport significantly interferes with the sport endeavour: winning as a sign of excellence is compromised, and there is a loss of disinterestedness. J.P. Robert, 2009)

Some of the relationships among politics and sport which are explored in the literature are: using the sport as a tool for diplomatic recognition; vehicle of ideology and propaganda; focus for publicity; source of prestige; release of agressive tendencies; development of mutual understanding; means of protest; development of conflict-aggression; political education; development of national consciousness, moral; unification; social control; government funding for sport; politicians as fans, sportists; tool for gaining favour; etc. J.P. Robert, 2009)

It seems that the separation of sport and politics is by no means logically impossible, one could not be very confident of any significant change in practice. Probably, there are three main obstacles for this. The first one is financial cost. The huge cost of staging international sportists' contest and the materialism of sportists make almost inevitable that there will be need to be vested interests, including those of governments. It is much easier for governments to devote money to something of national significance. The second obstacle is the international organization of sport, based on nation-states, rather than a transnational organization. The third obstacle are the media, in whose interests it is that there be as many spectators as possible. While nationalism remains the simpliest way of promoting interest and conflict, there is little hope for any significant change.

Also, we can say that there is certain interaction between sport and international politics, i.e. international relations. The political and cultural dimensions of sport are widely recognized and international sport is generally accepted as contributing to the dynamics of international relations. It follows that the changing characteristics of sport will reflect something of the general developments in international relations. Ongoing debates of concerning the implications of globalization, the significance of international non-governmental organizations on policy making, the effect of transnational movements on sovereignty and changing relationship between identity and place, are some of the issues which can be considered through the prism of the international sports environment. Studies of sport and politics have traditionally presented a number of developing functions of sport as vehicles through which political objectives might be realized. Many of the scientists which explore the sport and the relations of the sport with politics, say that sport can be often used as a political tool, and that the modern sports movement may, in itself, be ideologically loaded. They also claim that international sport needs the interest and support of politicians, but not their interference. Unfortunately, these scientific attitudes could represent only a "nice peace of paper", especially in the less developed areas of the world, as it is the Western Balkans. These theoretical "guidelines" are very hard to be implemented, because of several

reasons. First, if politicians support some sport activities, it means that they have some interests on it. They never give "blanco support" on sports, i.e. they expect feedback from their support. Otherwise, they can give only a declarative support, which in reality is not very concrete, useful and touchable for the sportists. They usually do that for publicity, and not because they sincerely want to. Second, they often misuse the sportists, by involving them in some political or government campaigns, with an intention to collect political points and to ring some votes on their account, which is due to the glory of the sportist. Third, politicians help some sportists, using their power, by providing them finances for traveling abroad, participating in international competitions, etc.

The movement of sport up the domestic and international political agenda has created the conditions whereby national sport organizations can potentially play a more pro-active role in policy-making and implementation. Yet examples of this actually happening appear limited. If the pluralist perspective is an accurate interpretation of the international environment, the sports historian should be able to trace an increasing number of instances where such organizations are actively engaged in international politics. Certainly, sport organizations are consulted on a range of politically sensitive issues, such as drug misuse and the liaison with the associations on the issue of sport violence. Their influence outside a narrow range of issues is, however, at best marginal. While accepting that the increasing influence of international sports organizations may, in certain limited contexts, be a reality, and that business interests allied to sport may also exert significant influence in the international environment, the primacy of the state-centred political interests has been illustrated many times. One of these examples is the controversy surrounding the awarding if the 2002 Winter Games to Salt Lake City. The scandal surrounding the alleged corruption had implications not only for the International Olympic Committee IOC) membership, but also for the Organizing Committee for the Games. Considering such experiences from a realist perspective would not necessarily deny the influence of sport organizations in certain limited contexts. However, in terms of the so-called "international system", the state as a unitary actor and the interests of the state remain dominant. A. Beacom, 2009)

Just as a consideration of international theories can assist in an understanding of the significance of sport in contemporary society, so too an investigation of developments in international sport can provide valuable insights into the nature of international society. The activities of politicians and diplomats in relation to international sport reflect the general characteristics of diplomacy and international politics in the post-Cold War era. A consideration of the evolution of international sport institutions can provide insights for international relations theorists concerned with understanding a political environment, which can no longer be comprehended in terms of the traditional state-centric paradigms. As a reflection of cultural development generally, the values and beliefs of key sports administrators and organizations they represent can reflect wider historical developments in political thinking. Theorists focusing on diplomacy argue that a transformation of diplomatic practice has taken place, which has been the dissipation of diplomatic activity a cross much wider range of activities.

The institutional relationship between the sportists and politicians are the government bodies or other organizational units connected with sport activities. This is case with some ministries or agencies for sport and physical education in the countries from the Western Balkans it is also case in other countries in Europe), where top sportists are part of the executive boards and other decision-making structures. But, from other side, these relationships can generate corruption and misuse of the sportists. As we have said before, there should be clear limits between sport and politics, because if they are completely mixed, then the real goals and sense of the sport are lost, and sport becomes automatically "political servant". The dependence of the sport from politics, especially government policies, come out at that moment when the government finances the most of the sport activities, i.e. when the financial liquidity of the sport associations is almost "zero". The solution for these anomalies will be achievement of more financially independent sport associations, granting non-conditional financial help from the government, cooperation with other non-governmental and non-profit organizations and associations, and keeping away the young sportists from politics.

The interference of the politics in sports can be seen in other aspect, too. There are many sport scandals which are directly or indirectly connected with politics. These scandals, are, unfortunately, very often in the countries of the Western Balkans, and most of them don't get appropriate solution in courts or other relevant institutions. In the following text, we will try to give some adequate examples from several countries of the Western Balkans, which can explain the real situation of the sports collectives in this area of Europe.

Serbian police is probing a major corruption scandal with suspected mob links that involves top first division football clubs. As part of the investigation, police arrested the secretary general of top Belgrade club Red Star, Zoran Damjanovic. Inspectors are reported to have been checking Red Star's books for several days after its fans seriously injured and beat a plainclothes policeman Nebojsa Trajkovic at a football match, which was termed attempted murder. Three fans have been arrested in connection with the incident. Matches are alleged to have been rigged, and millions of euros from the transfers of top players to have been illegally creamed

off. The new report points to links between top football officials and organized crime. At the center of the scandal is former Red Star president Dragan Stojkovic Piksi, who was forced to resign. The media said the investigation has revealed that Piksi and Damjanovic may have engineered the incident to create trouble for new Red Star president Toplica Spasojevic and his team. Piksi, one of the most popular football stars in the former Yugoslavia, had played 85 matches for the national team and afterwards continued his career in France and Japan. He has been accused by fans and sports commentators of selling top players to foreign clubs, using underworld figures as go-betweens and of sharing with them part of the transfer money. After resigning as a Red Star president, Piksi said he could no longer take the pressure and return to Japan as a coach. Serbian football has been marginalized at the European level, since the breakup of the former Yugoslavia. But Red Star is reportedly not the only "black sheep" in the Serbian soccer fold. Red Star's top rival, Partizan, is next in line for the probe, but also some top officials of the Serbian football Association. Top people of leading clubs and the Football Association are involved in money laundering, tax evasion and even white slavery. http://www.adnkronos.com/AKI/English/Sport/?id=1.0.1643855029, 2010)

Imagine a country where football clubs have not legally registered their players, where the national football federation has ordered thousand of jerseys and shorts with false PUMA trade marks and top official in the federation has obtained his job with a false university degree. We can confirm that this country is a Western Balkan one, and it is Macedonia. A website dedicated to inform football fans and journalists with professionally researched news in English about South-Eastern European football – reported what a team of inspectors from the government's labour inspection body found out when they visited the 12 teams in the Macedonian first league. Seven out of the 12 clubs did not have a single player registered as a professional player, although all players in the Macedonian first league are playing professionally. The players are instead playing illegally, they do not have contracts and the clubs are not paying social insurance for them. According to the website, the Football Federation of Macedonia FFM) has given up taking action against the clubs because to be effective they would have to close down almost all of the clubs. The website also have picked up a story from the Macedonian daily sports paper "Makedonski sport" which could reveal that the FFM had ordered 4500 football kits with false PUMA trade marks from a sports equipment factory in Prilep. Part of the equipment has already been distributed among youth training centres in Macedonia. PUMA is the official sponsor of the Macedonian national fotball teams, but the company has nevertheless taken out a lawsuit against the FFM after receiving samples of the false equipment. The third scandal has made it into the international media spotlight as it has involved UEFA and FIFA. The story began when police in Macedonia decided to investigate persistent rumours in Macedonian media, that the secretary general of the FFM had forged a university diploma in order to obtain his post. The police closed down and searched the FFM offices and questioned some of its managers for hours at the Ministry of Internal affairs. A week later UEFA and FIFA wrote the Macedonian Minister of Internal affairs complaining that Macedonia had violated the principles of autonomy that applies throughout the sports movement. but the Macedonian Ministry for Internal affairs maintains that the police was acting in accordance with its legal authorisation to combat corruption. It sees no reason for complaint when state institutions to perform the job they are set up to do. http://www.playthegame.org/news/detailed/scandal-upon-scandal-in-macedonian-football-1428.html, 2010)

New scandal with the Macedonian football federation, through this time the culprit is not the teams involved, but Bulgarian UEFA referee, Anton Genov. There was information circling throughout Europe that online betting shops have lost millions of euros on Macedonia vs Canada friendly match played in november 2009. Macedonia won 3:0, and all European and Asian betting shops had Macedonia as a favourite. UEFA is not disputing the result, rather according to the relevant sources they are looking at the four penalties, partucularly the ones awarded to Canada, and number of goals. From having watched the match, UEFA may be onto something as both penalties awarded to Canada were non-existent, borderline ridicolous. The two times Canada managed to reach the Macedonian penalty box, they came away with penalties. It seems certain now Bulgarian referee Anton Genov was set to whistle four penalties, no matter what. http://macedoniaonline.eu/content/view/10636/2/, 2010)

A member of the Croation Football Association Executive Committee and Hajduk Split sports director Igor Stimac earned himself a month-long suspension after reports of his hitting a linesman during halftime at Hajduk's league game at Rijeka. Most media, included the sports daily "Sportske Novosti", reported Stimac insulted, threatened and slapped the linesman Miroslav Jedvaj on the face because he was angry at his calls during the fisrt half of the game. Stimac, the fiercely temperamental former Croatia central defender, is no stranger to controversy: He was banned for six games by UEFA in 2001 because of his part in another tunnel brawl after a Hajduk-Mallorca Champions League qualifier. Later that year he was indicted for allegedly beating up a bar owner in Split, but the trial is still in progress in the notoriously slow Croatian legal system. While the press fervently appealad for a harsh punishment for Stimac in the

Rijeka affair, the usually meek Football Association suspended him provisionally for a month pending investigation. Amidst the speculations on the lenght of the ban to be passed on the temperamental Hajduk official, in an extraordinary turn of events the linesman changed his story. Contrary to the wording of the official game sheet signed by the referee, Jedvaj now claimed that Stimac in fact did not hit him, but only unintentionally grazed his face while gesticulating. No decision about sanctions against Stimac was taken because of the contradictions between the statemens of some participants and the official game sheets. This reminded many of the Football Association's indulgent stance when dinamo Zagreb's vicepresident Zdravko Mamic, himself Stimac's colleague in the FA Executive Committee, recently claimed that his club has "worked" with the referees in the past. Elsewhere such statements would have sparked off a thorough investigation, but not so in Croatia. http://www.soccerphile.com/soccerphile/news/balkans-soccer/yugoslavia.html, 2010)

In spite of this "minor bugs", the Croatian football league is an established competition, unlike the fledging championship of Bosnia and Herzegovina. The scandal involving a mistaken player's identity in the team sheet caused FC Sarajevo to accuse the Football Association of corruption and seek the intervention of the United Nations. The motive for the outburst was the decision of the Competition Committee to award the game between Borac and reining champions Leotar to the visitors by 3:0, because Borac had fielded a player not listed in the team sheet. Having lost the game by 2:0, Leotar appealed after discovering that the home side had used Milorad Babic instead of Milos Babic, the player mistakenly announced in the official documents. The Committee's decision to award the game to Leotar indirectly hurt the capital's giants Sarajevo and Zeljeznicar, who were lagging behind Leotar in the race for a spot in the UEFA cup. Borac on the other hand threatened to pull out of the competition if the original result was not reinstated by the Appeals Committee. As is customary in the Balkans, the loudest guy often wins and the pressure again paid off: the decision to award the win to Leotar was overturned and the points were given back to Borac, thus cutting the reining champs' lead over the Sarajevo rivals to a mere two points with eight rounds to go. http://www.soccerphile.com/soccerphile/news/balkans-soccer/yugoslavia.html, 2010)

There is an example from the Albanian past which shows the implications of the general political conditions on the sport activities. Arround decade ago, all football matches had been postponed indefinitely until the country's interior ministry could guarantee a security, after a wave of unrest over a pyramid savings scheme scandal. The Albanian football federation secretary-general, Eduard Dervishi, said first division club officials had decided to postpone further matches until peace had returned to the Balkan state. Sports event were halted a month ago when violent protests sparked by the collapse of pyramid savings schemes swept the country. Some protesters have lost their life savings in the investment swindle. http://www.independent.co.uk/sport/football-rouxs-hell-in-troyes-1270673.html, 2010)

These examples are related to football scandals in some of the countries of the Western Balkans. Still, other sports are also vulnerable to scandals, corruption, illegal activities, etc. but, because of lack of space, we have decided to present you the cases for the sport, in which there is the highest frequention for scandals, the football. Besides the above mentioned countries from the Western Balkans, also, sport federations and associations in Montenegro and Kosovo are faced with many problems, annomalies in the functioning, etc. Using the analogy method, we can note that there is complete reflexion of the "mentality and way of functioning" of the sport associations and federations from Macedonia, Serbia, Albania, Bosnia and Herzegovina and Croatia, with those from Montenegro and Kosovo.

It is useful to note that the role of the politics and the state should be more active in investigating the illegal activities connected with sport associations. The fault of the politicians is in their passiveness, especially when some huge sport scandals will come out in public. Relevant ministries, sport agencies, but also police and courts should be more effective and efficient in doing their job. Only in this way the criminal activities where the sport associations are involved can be cleared and the people who are responsible for those activities will be punished appropriately and will be put away from sportists who do not have the blame for that.

Sure, there are some cases where the politics is actively involved in the sport scandals. But, more as a "support" for the sportists and managers involved in them, than as a protagonist. However, no matter whether politicians are explicitely participating in the sport scandals, or implicitely tolerate them, they help the "sport mafia" to make extra profit, but also take from that profit for themselves.

Conclusions

"In healthy body, healthy spirit", should be the moto for all sportists, no matter which sport are they playing, or which confession, nationality or race they are, whether they are professionals or amateurs, well or bad paid, juniors or veterans. But, unfortunatelly, in every society, sport is "contaminated" with politics, less or more. If the state is more developped, the chances for political interference in the sport are smaller, or if they arise, there will be punished by the courts, or condamned by the society.

We can conclude that the countries from the Western Balkans are one of the European "black

spots", regarding the interference of the politics into sports. The relationships between sports, politics, bussiness and media is so strong, that they almost act like "one body". No matter what is the form of interaction, it is sure that it devastates the society and demotivates the development of the sport. Implications can be very serious, especially for the young people who want to be engaged in some sport. Regardless of the level of political influence on sport, the results are the same: lost enthusiasm, faith and interest in sport.

Sport associations in the countries of the Western Balkans often serve as an instrument for implicit drafting of a latent political agenda. This is due to the reason that sport is a very important part of the society, i.e. represents one of its cariatids and has much influence on the opinion of the people. Politicians are misusing this situation and are instrumentalizing the sport associations, for achieving their goals. In some cases, sport associations are aware of these manipulations, but they accept them, in other cases they are opponing them, but in some of the case they are not aware of this influence at all.

With the research made in this paper, we confirmed that if the political interference is infiltrated in the sport associations, the sport results are on a lowere level, i.e. sometimes they do not exist at all. Also, we saw that when sportists are involved in politics, they have a bad influence on the young people, i.e. they demotivate them to play sports by heart, but only for money. Finally, we concluded that if the financial independence of the sport associations is bigger, than the political interference is marginalised, because in that way the autonomy of decision-making is bigger and the political influence is not fruitful.

The activities that have to be taken are: increasing the awareness of the sport associations about the potential danger of being manipulated by politicians, selection of independent officials in the associations, only by its members and institutional bodies, creating a self-sustainable associations, which do not have the need of financial grants and dotations from the government, or other political entities, escaping the political offers for the top sportists, which are directed by the politicians, etc.

As a final conclusion, we can note that total separation of the sport and politics is a "mission impossible". Western Balkans is an area where the political interference is present not only in sport, but in every single part of the society. So, the measures that can be taken in real, are reducing the level of political influence and interference in sport, increasing the level of financial independence of the sport associations by enacting appropriate laws and by-laws regarding sport, establishing independent funds, etc.), and keeping distance by the top sportists from politicians, political parties, and government institutions and bodies.

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SOCIALIZING STUDENTS IN PHYSICAL EDUCATION AND SPORTS ACTIVITIES

TOHĂNEAN DRAGOŞ IOAN[1], CHICOMBAN MIHAELA[1], DRUGĂU SORIN[1]

Abstract
The present research is a descriptive and comparative study, whose target population is a total of 50 students divided into two equal groups, one experimental and one control.
Purpose
Research aimed at finding and the development of optimal strategies for improving group cohesion expressed by an index of students' higher cohesion.
Methods
It was applied a questionnaire developed by the authors that includes a series of questions that cover a particular passion for business, pleasure to work with certain types of subjects, affinity or discomfort for the subjects of the same sex activities, preferences, qualities physical, and moral conduct), efficiency.
Results
After studying the group of students sociometrical matrix investigated group cohesion index has a value of CGR = 0.06, the final value of the cohesion test is CGR = 0.22. The group of students has progressed from a low level of cohesion in small cohesion, which revealed significant improvements. Increasing cohesion index score improved

[1] Faculty of Physical Education and Sports, Transilvania University of Braşov , ROMANIA
Email: drugau@yahoo.com
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phase cohesion group showing a more mature students who participated improved systematically and consistently to all activities within physical education classes

Conclusion

Physical education activities made possible under consideration by the group have a better ratio which shows that students have acquired quality psychosocial research subjects, which confirms the acquisition of emotional self-regulation skills during communication.

Key words: personality, group cohesion, organization.

Introduction

Socialization process is fundamental in any company through which he designs, reproduce and carry out appropriate conduct of its members through legislative and cultural model.

Socialization facilitates the existence of normal social life and functionality of structures ensuring social stability, internal cohesion and continuity of the social group. As a basic concept of sociological theory, under "specific socialization processes, mechanisms and institutions through which society reproduces and physiognomy of the human personality that is specific to the structures that respond behavior statuses and roles prevalent in a given society, expectations and prescriptions contained in socio-cultural and ethical model". I. Drăgan et al 1981).

As is clear from this definition, members of society in sport as an activity supported and developed by the company) also learned skills, attitudes and behavior that promotes values achieved integration into the society in which they live. Sport as a social activity, possesses the attributes necessary to achieve social integration, as follows:

1. It is conducted mainly in groups, facilitating interaction between individuals. Note that there are sports fields where cooperation is intense sports games) and less intense individual samples in teams). Physical education and sport involving cultivation of qualities: cooperation, tolerance of others, social adaptability, teamwork, etc..
2. The content and organization to create a psycho-social environment that allows the emergence and manifestation of all types of interaction, cooperation from the opponent. It is interesting to point out the conflict that is created through sport, on the one hand, by strengthening the cohesion among group members and an increase of adversity aggression) to partners. These sometimes conflicting goals cause distortions or perversions such as cheating, illegal activities, doping, uncontrolled stress, lack of control of aggression.
3. Sport action involving the individual's own behavior assessment self) and the conduct of others, which contributes greatly to the formation of self-image. This is done in the competitions, by comparing and ranking values.

Motivating for the individual sports activities, because he sees others and try to emulate or exceed them and thus reaching to overcome, which means a change in behavior. For these reasons it is considered that the sport is socialized, because it promotes values and realities of society and allows the individual acquisition of transferable models of conduct in society biological models, moral, artistic, etc.)..

4. Performance and high performance sport involves the stages of their selection processes in order to bring the most talented top, the better prepared to participate further in the process of training or competition. These athletes among other duties and therefore have to be in competitions such as the European Championships, World Championships, Olympic Games, etc) from which social groups such as sports clubs) or country. This task is seen as an honor, valuing athlete status and behavior is driven by higher motives and feelings.

Formative function and sports development holds out the first perspective, the formation of branches of sport specific skills, developing skills, knowledge transfer etc..; and development function involves group relationships, social skills, etc..

Analysis of sport in terms of group shows that it acts in two senses of socialization M. Epuran et al, 2001): one individual, it is treated as attitudes, values, concepts, models and another group that the "expanding the number of individual agents exercising control or participate directly in the development of a system, subsystem or sector.

Socialization through sport has many forms. From the pedagogical point of view character is formative and development group in terms of individual and group sense, in terms of functional attributes of sport has different ages of children, youth and adults, etc. All these forms, directions, meanings, "functions", etc, demonstrates the complexity of sports and great potential that is in the process of socialization. It is still largely a social instrument used not only regional but also global scale. Undoubtedly, human socialization is supported, to some extent, sports and physical activity, given that all social contacts contribute to this process.

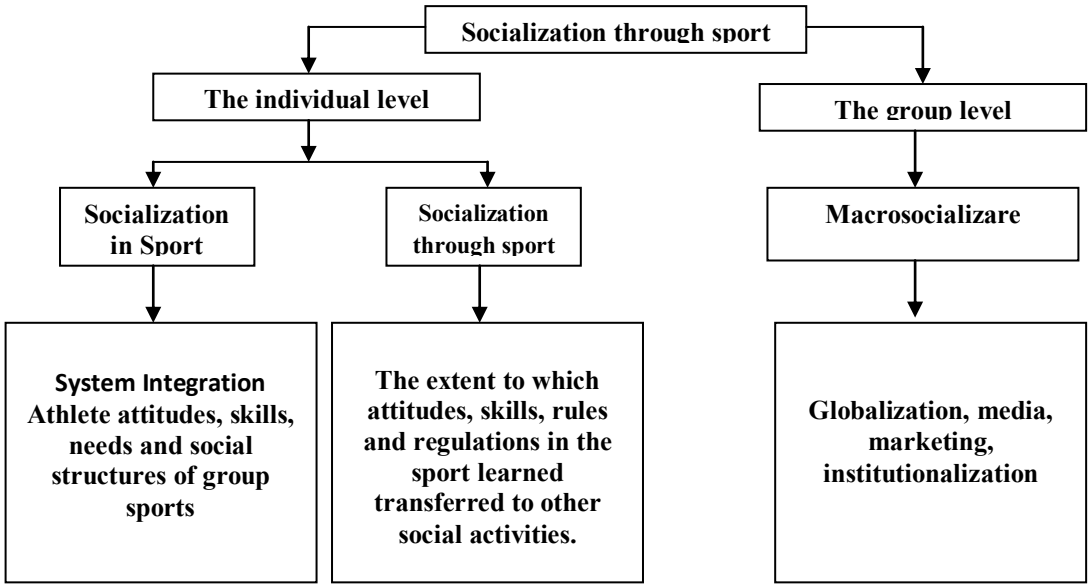
Social environment is represented by any medium that allows this process to occur. Sport and physical activities are part of this environment - along with other agents family, friends, colleagues, school, comunitte, media).

Physical activity is any activity so you sport, exercise, recreation, tourism, etc, just those activities that do not require a work producing goods.

Engaging in physical activities develop positive social attributes of personality. Many consider especially as play games and sports provide an environment conducive to learning skills, personal values and social behaviors and cultural acclaim that what they learn through physical activity is transferred to other spheres of life. Sport is an activity that continue free voluntarily, on their own decision. The purpose of practicing you mostly lived experience and emotions that are both body and mind, thus strengthening the unity of the human mind and body. Sport is a "play" and his performance is completely different from the performance of work, since that is done

in spare time, and must remain as indeed for the sport and not to alter nature.

Fig. 1 Aspects of socialization in sport after M. Epuran et al, 2001)



Organized sports socio-cultural area covers a very intense and has some impressive numbers. In the U.S., as a matter of societal type, 30 million boys and girls are involved in youth sports programs, 6.5 million teenagers participate in sports competitions annually at school, and gross national product is $ 47,200,000,000. The conclusion is that sport has

assumed a central role in the lives of millions of participants and hundreds of millions of people. We can say that "the social world of sport does not come as a unit time, controlled by unalterable natural laws,

but as socially construct processes that can be transformed by human agency.

The contribution of sport, especially of the team, athletes must require cooperation to work together and build cohesion. Good communication, mutual respect, feelings of closeness, the atmosphere of friendship, is made in time and based on the quality training, trips and competitions.

Sport is a particularly suitable environment for social learning. Concrete experiences and evaluations are more important than verbal reasoning. The problems of validating the positive effects of the influence of sport are numerous. Sport is a secure and ambivalent social factor that works in parallel with other social processes.

Attitudes are the result of a person's reaction towards other individuals in emotionally important for that person eg coach, manager, other athletes, the public, etc.) Is underlined "the possibility of changes in negative attitudes and increase positive attitudes by applying self-training, sport that is making him rely on himself and become independent of the pressure effects of other people, whether real or imaginary."

Sport and physical activity can become a field of education of individual behavior, social contribution is a hygiene, athletes are not influenced by anarchism, are less prone to demonstrations, they play sports channel in aggression in sports game.

The effects of socialization in sport are valued in a society where too many people are inactive.

As a socializing environment, sport and physical activity must be based on following arguments:

• Sport and physical activity offers a unique opportunity, given their size, meet other people and communicate with them, to assume different roles, to gain some social skills such as tolerance, respect for others, etc..) to accept work-related attitudes which contributes to the development of personality), to live not too easy emotions felt in other spheres of life, to accept the positive elements of lifestyle for example, diet, rest, etc.) adapting to the team goal through cooperation, cohesion and the like), and to become socially active through the performance of others - to mention only the most general processes.

• In terms of age, the biggest difference there is, obviously, between childhood and old age. The child had just started to learn to know the world and therefore the roles learning through play helps to become sociable. At the other end of life, the old track - among others - to reestablish contact with the social world, the chance for communication and understanding is important.

• An opinion is often seen as a chance for communication and understanding is only a possibility and not a direct linear effect. Therefore, surveillance and even management are essential. It is interesting to consider the trend that in fact the main

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goal of sport and exercise, is to support freedom of association in the social contacts.

• Because, after all, sport and physical activity, viewed in terms of socialization, refers to the unity of body and mind, the problem of personality development should also be considered. I presented evidence about the positive effects of physical activity on self-concept, self-esteem, anxiety, depression, tension and stress, self confidence, energy, mood, efficiency and wellbeing.

• Good results are reported as a result of practicing specific exercise, in prison environment, by the handicapped and other special categories of population.

Group cohesion

"Maintaining and developing group cohesion depends largely on its mode of joint activity of members, which results in a unified action, conjugated A. Dragnea, 2006). M. Epuran et al 2001) cites H. Lenk and Martens in their research on the rowing team, and the latter on the basketball team), bring out the idea that they confirm the thesis that performance involves cohesion and says that "too much cohesion breaks down." The feeling of "complacency" and "complacency" is given to those situations in which cohesion groups are large and while the team provides a strong affiliation able to organize and fight passionately for the purposes intended.

As stated M. Epuran, I. Holdevici, F. Tonița, 2001) cohesion and form arises from positive and preferential relations depends on a number of factors" which are characteristic of the group:

- limited number of group members;
- age of members;
- the athletes;
- team structure;
- motivation

It is considered that smaller groups are always easier to handle because the information flow more easily, the perception is better, the strength of ties among group members is higher, age does not matter too much as the differences give rise to differences in attitudes and aspirations different ; whether subjects with temperamental traits are of major importance because it attempts to capture the interdependence between the type and temperament that it leaves its mark on communication, and how it affects group cohesion.

By practicing physical exercises develop a sense of belonging to the group, valuing the ideas and the opportunity for personal actions, ensure recognition of the value of a subject in the group, favoring the development of capacity assessment and self-esteem, moral behavior is emerging. The need to belong to group "undertakes to respect individual rules of behavior, values that it promotes the attitude of acceptance of the other." A.Dragnea, 2000). Thus, in this way, the socialization process is achieved through participation in the group, and group cohesion.

Good cohesion of a group gives good results because a good professional affiliation of the group stimulates cooperation between subjects, dedication to work creates in training leading to fierce fighting in competitions and the subordination of individual interests over collective. Collectively the team becomes better. The degree of cohesion is given the type of group which, as mentioned M. Epuran. 2001) are:

- *Homogeneous groups*. Most times, homogeneity is imposed on the specific training the work is long term and more intense compared to the competition. Uniformity is the result of social learning, teaching athletes to live, work and enjoy together, it is the result of coordination of actions to pursue and achieve the intended purpose, is subjective to some understanding and sensitivity towards others.

There is an important aspect of life neglected and uniform group, namely the competition phenomena coexist with cooperation, but they have the character of emulation which is an additional impetus to propel the team to higher levels of aspiration.

Psycho-sociological homogeneity of the team depends on the relative homogeneity of physical preparation, technical and tactical training of athletes and harmony can use the same language, motoric.

- *Groups "of character"* were so named for Chappuis Rioux and to emphasize their dependence on the homogeneity of ties between the athletes of character. And since people do not much resemble one another, relationships are of clearing, settling them among athletes with different features. For example, the choleric type is associated with one or melancholy phlegmatic, compensation being made on one part activism and business plan and, secondly, in terms of calm and reflection. Extending the idea to a higher index of expansion team and we underline the unity of team cohesion, orientation and fundamental views about society, life and sport, as a determining factor in such groups "of character."
- *Gomfoterne groups* in which cohesion is ternary data consists of three elements), while being dependent on physical fitness, psychological and physiological such a group of athletes. Group cohesion is clearly a dynamic of its own sport, largely due to its characteristics, juniors, seniors, girls and boys, etc. -performance level that can be recovered easily by sociometric investigation. Much sociological observation revealed that "those who like to collect" more natural approach each other, finding common meanings in attitudes, skills and character traits similar. It's spontaneous affiliation, through empathy. Obviously, the coach can make a profit on this phenomenon, forming groups or subgroups gomfoterne or of character.

Group cohesion is a social shaping process, requiring the granting of individual intentions and

trends and merging them into a collective emotional atmosphere.
Action is difficult and time, but the effort deserves to be done for the sport, more than in other team activities, welding is not a marginal issue.

DESGIN, STUDENTS,TEST

The students were approached research faculty other than physical education and sports) for purposes of physical education at the University "Transilvania" approach that consisted in choosing blocks of physical activity by providing operating systems structure which consisted 20% of motor skills, 45% sports games, aerobics and fitness programs 35%. These students were compared with another group of students who passed through the socialization process are already integrated into the group work a year.

The general **objectives** are:
- Identify affective preference relations;
- Identify operational preference relations;
- Identification of interpersonal relationships in group sports;
- Improving and increasing group cohesion index;

Motivation for choosing this theme was a pragmatic, because they want the work to be a real bridge between the theoretical aspect of teacher knowledge of sports by group dynamics and developing optimal strategies that would mitigate the conflicts in the working groups of physical education activities and prevention and lack of motivation, lack of confidence, a positive approach to suppressing development strategies.
The research started from the observation that in groups where there is a positive relationship sympathy, friendship, cooperation, mutual aid) work is more effective, social climate, the level of social and interpersonal relations are directly caused by the activities it develops young . It is a failure and a descriptive study, aimed at finding and the development of optimal strategies for improving group cohesion expressed by an index of students' higher cohesion.
Description of the **test** used:

Results: Table 1. Sociometric matrix for group cohesion index at initial testing IT)
Research aspects of the structure and dynamics of working groups in our field of activity groups of students) receive *sociometric method* of revealing the relations of the capabilities of these groups bosom.

Sociometric method is based on survey technique the so-called sociometric test). The particularities of this method, which differs from other research methods, consisting of content questions, the administration and processing module responses.

The questionnaire contains a series of 12 items, questions that address a particular passion for business, pleasure to work with certain types of subjects, affinity or discomfort for the subjects of the same sex activities, preferences, qualities physical, moral and behavioral) efficiency.

Table 2. Sociometric matrix for group cohesion index at final testing FT)

A		+2	+3	-3	-3	+3	-2	+3	-2	+1	+3	+1	+1
B			+1	+3	+3			-2	+3	-2	-2	-3	+2
C	+3	+2		+2	-3	-3	+3	+1	+1	-3	+2	+3	+3
D	-3				-1	+1	+3		+3	-3	-2	+2	
E		+2	-3			-2	+2	+1	-2	+2	+1	+1	+3
F	+2	-3	+1	+3	-2		-3	+2	+3		+1	+1	+1
G			+3	+3	+2	-3		-3		+3	-2	+3	+2
H	-3	+2	-4	+3	-1		+2		+1	+1	+2		+1
I	+1	-3	+2	+3		+3		+2		+1		-3	-3
J	+2	-3	+3	+2	+1	+2	+3	-2	-1		+1	+3	-2
K	-3	+2	+2	-3		+3	-3	+2	+2			+2	
L	+1	-2	-4	+2	+2	+1	+3	+3		+2			-3
M	+2	+3	+1			-1	+1		-2	-3	-1		
Nr. of rejections/ Rejection value.	6/11	6/13	8/16	8/21	4/8	6/13	7/17	7/14	6/13	6/10	6/10	8/16	7/13

Number of choices / Value of selection.	3/9	4/11	3/11	2/6	5/10	4/9	3/8	3/7	4/7	4/11	4/7	2/6	3/8

A		+2		-1	+3		-2	+3	-3				+1
B			+1	+3					-1	-2	-3		+2
C				+2	+3	-2	+3		-1		+1		
D					-2		+3		+1	-1	-3	+2	
E			-1			-2			-3	+2		+1	+3
F	-2		-1	+2			-3		+3			+1	
G			+3	+2	-2	-3					-1	+1	
H		+2	-3	+3	-2				-1				+1
I		-3	+1	+3		+2						-1	-2
J				+2	+3		-1		-2		+1	+3	-3
K	-1		+1	-3	-3	+3	-2					+2	
L	-1		-3	+2		-2	+3			+1			
M	+2	+3	-1		+2		+1		-3		-2		
Number of choices / Value of selection.	½	3/7	4/6	8/19	4/11	2/5	4/10	1/3	2/4	2/3	2/2	6/10	4/7
Nr. of rejections/ Rejection value.	¾	1/3	5/9	2/4	4/9	4/9	4/8	0	7/14	2/3	4/9	1/1	2/5

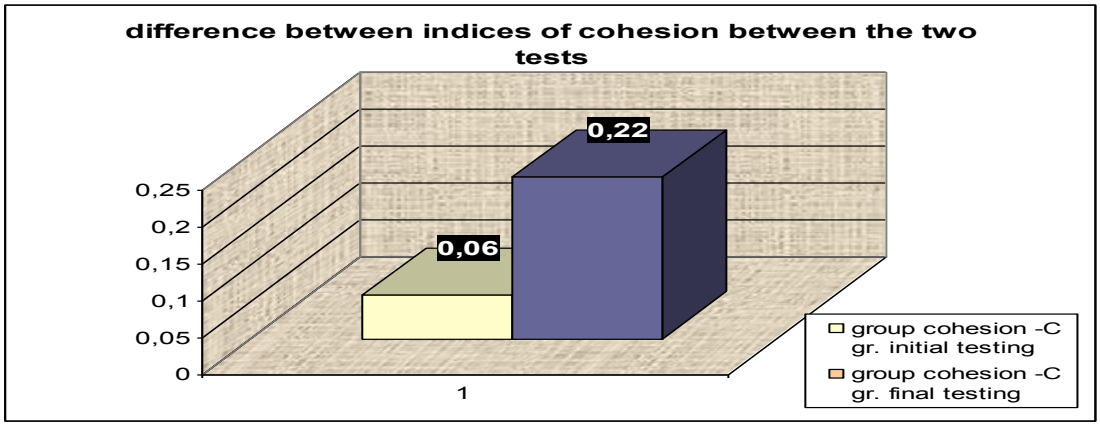
Interpretation of results

In this sense, we took as reference values proposed by C. Matei 1981) and presented in Table 3.

From – 1.00 to – 0.70	
From - 0.69 to - 0.40	Group with explosive relationship tension)
From - 0.39 to - 0.20	Group dissension
From - 0.19 to - 0.01	Group on the front of disruption
0	Group contradictory forces
From 0.01 to 0.20	Weak group cohesion
From 0.21 to 0.40	Small group cohesion
From 0.41 to 0.60	Cohesion group with moderate average)
From 0.61 to 0.80	Significant group cohesion
From 0.81 to 1.00	Group cohesion than

Cohesion index score improved phase cohesion group showing a more mature students who participated improved systematically and consistently to all activities in physical education classes. In this evaluation, it appears that the group has evolved from a weak group cohesion to a group with low cohesion, which shows that after one academic year we achieved an improvement on the existing social climate in the group.

Chart 1. C-gr



Conclusions:

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1. The contribution of physical training of students to create a uniform formula for body strengthening and improving motor is open, adaptable, allowing an indication of permanent improvements and optimizations.
2. Closely related to the objectives of university education in physical education classes planning to neprofil typology developed lessons and distributed in accordance with the schedule plan features Syllabus determined general physical development, motor skills and socialization.
3. The degree of group cohesion, work group structure, hierarchy members led to greater collaboration between subjects and contributed to the development of non-volitional and intellectual qualities.
4.Activitățiile physical education made possible

under consideration by the group have a better ratio which shows that students have acquired quality psychosocial research subjects, which confirms the acquisition of emotional self-regulation skills during communication.
5. As part of the proposed reservoirs are obvious, both in terms of general physical development, motor and socialization plane.
6. Passion for a particular physical activity led to greater physical and emotional involvement in creating positive changes moods.
7. Group cohesion created by choosing blocks of physical education activities have developed qualities, skills and driving skills to optimize the socio-human.

Proposals:
1. Actuation systems and methods of physical education in individual sports, games and collective, can be applied in the physical training of students either in the form and structure proposed by us, either by changing the order and structure exercises depending on the existing material conditions, the conditions of time, space curve physiological, etc..
2. The correlation of the physical effort required in certain physiological and biomechanical explanations for nature awareness activities, creating motivation, interest and participation from the students aware.
3. We believe that by means of gymnastics, athletics games and sports aerobics and fitness programs can meet the objectives of physical education related to the overall harmonious development of students. For the most rational means to be selected, dosed properly to achieve the objectives driving tasks.
4. Selected exercises to develop the qualities driving lessons be applied in systems that have continuity to meet the instructional and educational values.
5. Only the basic principles and applying modern teaching methods most effective in more complex activities, carried out in a variety of conditions, outdoors and in the hall, the accumulations will be evident, both in terms of general physical development, motor and as regards the socialization.
6. The practice of physical activity required by each student's preferences, as their physical qualities, it engage students in activities leading to the systematic practice of exercise and can be detected while students with skills for sports performance.
7. By creating opportunities for physical activity practice preferential habit and habit formation develops students' independent practice especially during exercise freely.

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Content

❖ SPORT AND PERFORMANCE

❖ PHYSICAL EDUCATION AND SPORT

❖ KINETOTHERAPY

❖ MANAGEMENT IN SPORT

❖ SPORT AND HEALTH

❖ VARIA

❖ ALPHABETICAL AUTHOR INDEX

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Requirements for the elaboration of the scientific papers (2009-2012)

Structure of the experiment type paper:

- the title of the paper will be written with Majuscules, Times New Roman, Size 12, Bold, Align Left;

-the names of the author or authors of the research will be written with Times New Roman, Size 10, Bold, Majuscules, Align Left, one line under the title of the paper;

-under the author's name, the department /departments and institution / institutions it is e-mail address for the corresponding author;

-the source of the material support in the form of the GRANTS not more than 40 characters including spaces if need be, with Times New Roman, Size 10, Align Left;

-the Department name, institution name, contact address email *can be* as footnote;

-Abstract, Key words, Introduction, Methods, Results, Discussion, Conclusions, References.

Abstract

The structured abstract and 3-5 key words will be written with Times New Roman, Size 10, Justified.

The abstract must not contain more than 150 words for unstructured abstracts essay type and 200-400 words for structured abstracts experiment type. The abstract must be elaborated in English language. In the abstract there will be no abbreviations used.

The structured abstract for **the experiment type paper** must contain:

- the aim / purpose / object of the research;
- the procedures and methods of research subjects, applied tests;
- the results / main results;

-discussions and conclusions;

- key words between 3 and 5 key words, which punctuates the interest areas of the article;

The aim, purpose, object, methods, results, discussions, conclusions and key words have to be written bold and minuscule.

I**ntroduction**
Procedures and methods of research (subjects, applied tests)
Results
Discussion
Conclusions
All of its will be written Times New Roman, Size 10, Justified, two columns;
Bibliography
It will be written with Times New Roman, Size 10, two columns, First Line Indent 0 cm, Hanging Indent 1cm, Left Indent 1cm. The names of the articles / book will be written in italics.
Author's name has to be written with bold and majuscule (eg.**SMITHOSCKY, M.,2011**)

Structure of the essay type paper:

- the title of the paper will be written with Majuscules, Times New Roman, Size 12, Bold, Align Left;

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-under the author's name, the department /departments) and institution / institutions) it is e-mail address for the corresponding author.

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- **the unstructured abstract and 3-5 key words** will be written with Times New Roman, Size 10, Justified;
- **the introduction and the object of the research, the content, the conclusions** will be written with Times New Roman, Size 10, Justified, two columns;
- the **bibliography** will be written with Times New Roman, Size 10, two columns, First Line Indent 0cm, Hanging Indent 1cm, Left Indent 1cm. **The names of the papers/ articles will be written in italics.**

For the abstract - essay type paper

- the aim/object of the research;
- the content of the research hort summary);

- conclusions main conclusion);
- key words between 3 and 5 key words, which punctuates the interest areas of the article);

Details:

Introduction

The introduction will only contain strict and pertinent references pro and cons) on the studies that have as a common subject the object of the research.

Research methods and procedures

Subjects

The subjects involved in the experiment are described, their distribution in groups, identifying the age, the sex and other important characteristics. The experiments on human subjects are produced in accordance with the national legislation for the human protection and the Helsinki Declaration of 1975, revised in 2004. The names and the surnames of the subjects are not used, especially in the illustrative materials.

The work methods are identified, the apparatus on which the experiment takes place presenting the name of the producer and the address between parentheses) and the statistic methods in detail. The new or considerably modified methods are described, motivating their choice and evaluating their limits. The hypotheses of the paper must be clear and concise.

Statistical analysis

The statistical methods are described with sufficient details, in order to understand and to check the results obtained. The names of the computer programs used for the statistical processing of the data are specified.

Results

The results are presented in a logical sequence, through tables and diagrams. The results expressed through text should not be found in the tables and/or diagrams and the other way around.

Tables

The tables cannot be introduced in the text as photographs. The tables must be numbered in the upper part, in succession in the order of the first text quoting, followed by a conclusive and succinct title.

Table 1. Physical characteristics of the subjects

	Feminine subjects n=21	
Variables	M±DS	CV %
Body height cm)	166,143±5,597	3,369
Body weight kg)	61,524±8,364	13,595
IMC kg/m^2)	22,338±3,282	14,692
Body fat percentage %)	25,329±3,074	12,136
Fat mass kg)	15,182±4,066	25,715

*significant correlated with IMC, r=0,875.
Established significance level at p<0,05.
IMC, body mass index; M, average; DS, standard deviation; CV, variability coefficient; n, number of subjects.

In the lower part of the table the following symbols will be used, in order to emphasize the differences or the significant correlations statistically, in the following order: *, †,‡,§,□□,¶**, ††, ‡‡, etc. Also in the lower part of the tables the significance level established by the researcher will be presented and the unusual abbreviations used in the table will be explained.

Each table must be quoted in the text. The tables from other publications must be used with the permission of the author authors), indicating the bibliographical source from where it was assumed.

Diagrams illustrations)

The diagrams must be numbered in the lower part, in succession in the order of the first text quoting, followed by a conclusive and succinct title, preceded by the unusual abbreviations used in the diagram or other observations.

Measurement units

Measuring the length, height, weight and volume must be expressed in metric units meter-m, kilogram- kg, liter- l, second- s, or decimal multiples). The temperature must be measured in Celsius grades ºC), and the arterial pressure in mmHg. Other measurement units must be expressed in the International Units System SI).

Discussions

In the chapter Discussions the new and important aspects are emphasized, which result from the data processing. The data of other similar studies presented in the introduction chapter cannot repeat in detail. Also, the implications of the results found must be discussed, their limitations and the implications of these results, for the future studies. The observations found must be reported to other similar studies.

Conclusions

The conclusions must be reported directly to the hypotheses of the paper and derive directly from the chapter Discussions. The conclusions that are not fully backed-up by the data found or that are based on unjustified affirmations must be avoided. New hypotheses can be concluded or attach some recommendations, if the case be.

Thanks

In the section Thanks when the case appears) there can appear:
- the contribution of the people that are not co-authors;
- the name and surname of the people that have contributed intellectually to the accomplishment of the paper with their agreement), but that are not co-authors- scientific counselor, data collector etc.;
- the financial help and the material support, specifying the nature of the support;
- the technical help in a separate paragraph called "Other contributions");

Bibliography/References

Bibliography and text quoting

The bibliography must be arranged in alphabetical order, the unpublished papers being quoted, but that are registered for publishing. In the bibliography all the authors quoted in the text are written. In the text all the authors are written if there are 6 or less. If there are 7 or more authors, the first three authors are written, followed by "et al." it comes from the latin "et alia" which means "and others"). If in the bibliography there are at least 2 papers that have an identical author authors) and the publishing year, in the text, but in the bibliography as well, immediately after the publishing year, a letter will be written in alphabetical order), in order to distinguish the papers in the bibliography 1998a), 1998b)). The name of the author / authors) must be followed by the initials of the surname.

In the text, the quotations will have the following structure:
a) for one and/or two authors
- at the end of the phrase T.S. Keller, and A.L. Roy, 2002);
- in the phrase T.S. Keller and A.L. Roy 2002), T.T. Gomez, 2003 found significant differences of isometric force...
b) up to including) 6 authors
- at the end of the phrase T.S. Keller, A.L. Roy, Carpenter G, 2002)
- in the phrase "Also, .S. Keller, A.L. Roy, G. Carpenter, 2002) found significant differences of isometric force..."
c) more than 6 authors
- at the end of the phrase T.S. Keller, A.L. Roy, G. Carpenter et al 2002);
- in the phrase "Also, T.S. Keller, A.L. Roy, G. Carpenter et al 2002) found significant differences of isometric force..."

Generally, for magazines, the bibliography will have the following structure:
NAME OF THE AUTHOR- AUTHORS year of publication), *Title of the article*, Magazine, number of the volume yearly number the number of the supplement part): number of pages.
a) standard magazine article
b) organization as an author
c) no author
d) volume with a supplement
e) number with supplement
f) volume with part
g) number with part
h) number without volume
i) no volume and number
j) pages in roman numbers
k) indicating the type of article if it is necessary

DEURENBERG, P., WESTSTRATE, J.A., SEIDELL, J.C., 1991, *Body mass index as a measure of body fatness: age- and sex-specific prediction formulas.* British Journal of Nutrition. 65(2):105-114.

For **books** the bibliography will have the following structure:
a) personal author s)
b) editor s) as author s)
c) organization as author or the one that publishes
d) chapter in a book
e) license degree paper, dissertation or PhD. Thesis.

RISTARU, M., 2005, *The influence of pliometry on the muscular development at the lower limbs level* [dissertation]. Constanta, The Faculty of Physical Education and Sport.

For **unpublished materials but in the course of publication),** the bibliography will have the following structure:
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The evaluating/self-evaluating grid for the quality of the research paper by the reviewer/author s)

The evaluating/self-evaluating grid for the quality of the research paper by the reviewer/author s)		
1	The originality of the research theme	15 points
2	The quality of the research paper structure	5 points
3	The clarity and quality of the research hypotheses elaboration	10 points
4	The quality of the registration of the results and their presentation	10 points
5	The clarity and quality of the discussions directly linked to the results with reference to similar studies	10 points
6	The clarity and quality of the elaboration of the conclusions in accordance with the hypotheses of the paper	10 points
7	The applicability of the results found in the practical and scientific practice	10 points
8	The accuracy of the in text and bibliography quoting	10 points
9	The clarity and quality of the expression in the text	10 points
10	Strictly respecting the elaboration technical requirements	5 points
	Total	**100 points**

Based on these reasons, the article will receive from the reviewers' board a number of points. A number lower than 60 will lead to the rejection of the article, between 60 and 90 points the article will suffer certain changes from the point of view of the structure, expression in the text, etc. in order to receive the accept for publication, and over 90 points the article will receive the accept for publication, after small changes in the elaboration if the case may be).
The review of the article will be objective, clear and strictly formulated, in accordance with the **technical and scientific request for the elaboration of the scientific papers**, without discrediting the author s) of the article manuscript).

The review process
Step 1
The article must be send in electronic format or on any media format CD_ROM, etc), in English Abstract in English), through electronic mail at the address contact@analefefs.ro, alternative adress: gevatcecilia@yahoo.com, or at the mailing address: Cpt. Av. Al. Serbanescu, no.1, Constanta, Romania, RO-900470 Tel./ Fax. +40 241 640 443 or 004 077 136 1179
Step 2

The article deposited for publishing must be accompanied by a short personal presentation and a professional CV, no more than 120 words, that must contain the detailed contact address, including phone number, fax number if it exists) and the e-mail.

Step 3

At least two members of the Editorial Collective and of the Scientific Board will initially analyze the article and will nominate at least two reviewers to analyze the article in detail.

Step 4

The article will be officially analyzed by at least two reviewers with expertise in the thematics of the article deposited for publication. The article will receive a number of points from the reviewers' board.

Step 5

The articles that follow over 90 points) the scientific and technical standards for elaboration will be included into the waiting list for publication. The articles that need certain modifications between 60 and 90 points) will be returned with the reviewers' observations, for their modification by the author s). The articles that do not accomplish the minimum scientific and technical requests for elaboration 60 points) will be rejected by the reviewers' board.

Step 6

The articles will be included on the waiting approval) list for publication.

Step 7

After the approval, the article will be published in the magazine, and the author s) will receive a free copy of the magazine.

Deadlines for handing in the articles

Two numbers of the journal will be published per year and a supplement for number 2 of the journal in that year.
The deadline for handing in the articles for the first number of the magazine is 6th January, for the second number of the magazine is 15th of June and for the supplement of the magazine is 30 September. Based on the number of articles handed in, the Editorial Collective and the Scientific Board will be able to postpone the publishing of an article in a future number of the journal.

Publishing / subscription taxes

The publishing fee is 10 euros just for online journal)
For purchase a number of the journal the fee is 15 euros for 2009, 2010, 2011 year)
For purchase a number of the journal the tax is 5 euros 2001-2010)
For subscription 3 annual numbers of journal 2011) the fee is 25 euros