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***DEPARTMENT OF PHYSICAL EDUCATION AND SPORT***



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# **PHYSICAL EDUCATION SECTION**

## LOCOMOTOR TRAINING AND GENERAL DEVELOPMENT OF STUDENTS FROM SECONDARY CYCLE

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### Abstract

Through this study we aimed to contribute to finding answers in regards needles cee poor physical preparation of students, early decrease their interest for sports activities and practical ways to solve them, hoping that they will contribute to improve the methodology rugby in school.

*Objectives.* The strategy that we propose to focus, initially, on the development of psychomotor skills through exercises diversified priority nature created and in the second phase, to proceed with acquisition actual actions technical specific tactical Rugby in accordance with the methodology described in the literature and adapted to the level of training students and didactic existing materials.

*The aim* of the paper is to improve the instructional-educational process in the physical education discipline, in the lyceum cycle, by creating and applying specific exercises for playing rugby for the formation and development of psychomotor skills, in accordance with the pupils' age peculiarities and the existing material conditions.

*Methods.* Information and bibliographic documentation, research method curriculum documents and other school documents, data investigation into the school population and schools, in high school, investigations on the basis of existing material in school for rugby school, high school, observation method, the questionnaire survey method, metota statistics.

*Results.* Searching and finding answers to some of the problems caused poor sports training of students, reducing some early interest in physical education, high school and practical ways to solve them through games.

*Conclusion.* The physical exercises applied with the experimental classes are effective and contribute to the development of psychomotor skills. By comparing the results to the experimental classes, it has been observed that advances in the development of skills are all the more positive as the attitude of the subjects towards the activity is more positive and the higher the personal significance for them.

**Keywords:** motricity, students, sports games, rugby, physical education.

### Introduction

In the general context in which performance sport evolves with stunning progression, athletes are themselves the subject of significant morphological, physiological, psychological, behavioral changes, etc.

At the beginning of the 3rd millennium, high sport performance can only be achieved with the application of multidisciplinary knowledge from areas recently becoming complementary to performance sports: biology, biomechanics, biophysics, biochemistry, nutrition and metabolism, psychology, and other medical sciences.

Research on rugby students shows that these morphological changes have improved both the athletes' exercise capacity and the overall condition of the entire locomotor apparatus. Medical sciences play a very important role in the scientific organization of the physical exercise process.

Both physical and physical education specialists use information about anatomical functions during physical exercise in exercise optimization. In the content of this paper I proposed to present some specific features of rugby players from an anatomic and functional point of view but also aspects such as discipline, control and mutual respect that generate the spirit of the game, these being the qualities that give birth to comradeship and fairplay, essential for the success and survival of rugby (Nicu, A., 1993).

The choice of this subject is motivated by the fact that one of the current trends is the introduction of specific means of specific training in the programs of sports training of pupils aiming at improving the neuromuscular coordination and static and dynamic balance indicators at an early age.



**Study.** The complex and varied set of actions organized rationally and systemically integrated, aimed at achieving a common goal is the training process. The importance of these actions lies in achieving the goal, each of which has its own technique of deployment, as well as a specific way of action.

Modeling intervenes from the design stage of the training. Here the method is fundamental, going later in the practical or experimental stages of the model. The essence of modeling in physical education and sport is characterized in the triple "model-algorithm-programming". Thus, the successive steps required to apply the method are outlined.

*Specific technical-tactical content of the training* Technical-tactical training has a weight of 55% (30% technical and 25% tactical) and aims at raising technical and tactical mastery. It is generally recommended to schedule a single theme in the training lesson (Badea, D., 2012).

Also, theoretical training has a 5% share, 1-3 sessions per week, with a duration of 20-30 minutes, emphasis on fair play.

Psychological training, with a weight of 10%, addresses every aspect of psychological training. This training is done in separate training sessions or in separate sessions through the conscious participation of athletes (Epuran, M., 2005).

Training lessons are scheduled 3-5 times a week, with a total of 120-160 exercises per year and a duration of 60-90 minutes per training (Collinet, S., 2000). The fundamental part lasts about 45-65 minutes and will program:

- a technical-tactical or physical theme
- 2 themes - a technical-tactical theme
- a theme with physical content

The set of methods and means used in the lessons will be complex and combined to bring the player closer to the future performer (Badea, D., 2011).

The present study proposes to present the creation of the conditions for optimization of the technical-tactical potential of rugby students from the "Aurel Vlaicu" National College, team.

**Research tasks.** The preliminary research is aimed at validating the tests and the means that will be used in the actual research. The research aims at establishing the means structures that will be applied to the experimental group, a battery of tests that will be applied in the actual research and the realization of a coherent training program.

**The hypothesis** consists in the effective selection of rugby-specific means for educating and developing technical-tactical capabilities, and their application in the game to improve the qualities of rugby players.

In order to improve the training process, in the search for new solutions that contribute to progress, to the renewal of the technique and to the correct and quick learning ways, coaches must seek, innovate and apply what leads to progress and optimization of training.

For this purpose, we used the following methods to elaborate the present study:

- studying the theme in the literature;
- the method of observation;
- case Study;
- experiment method.

The system of measurements, tests and test samples proposed was selected after consultations with specialized materials and in full compliance with the requirements of the Romanian Rugby Federation. The parameters of each component of the evaluation system are found in the evaluation models - selection related to the stages and the formative levels. We opted for this system because it is accessible and provides relevant data.

- a) 50m running
- b) running test 10x5m
- c) traction test
- d) the dorsal trunk flexion sample
- e) Sargent test

- f) suspension (hanging)
- g) sample of the genuflexions
- h) running 1000m

The evolving trends of the game can be:

- increasing the number of edges and the relative stagnation of the number of ordered piles and agglomerations. This phenomenon is due to a relatively recent regulatory provision that allows a team with a penalty kick to send the ball to the edge and retain possession;
- increased play time and number of phases confirms the orientation of the rugby game towards a hand-played game, an open game with a total commitment, requiring a superior training of all components;
- as a whole, rugby play remains in the mixed area in terms of oxygen consumption, but from the temporal structure of the game phases, we note the significant tendency of effort orientation within them to the lactoacetic anaerobic threshold, which is determined by the doubling of the number of phases over 40 " (Bota, C., 2000);
- in terms of launching the game at the edge, the game continues to accentuate. Note the reduction in the number of mistakes. On the orderly stack there is a considerable reduction in the number of mistakes, due to the strengthening of the game at hand, but with a balance of concrete forms of play.

Table 1 The results of the control samples

Running 50 m		Running 10X5m		Traction		Trunk tails flexed from the back 1 min		Suspension		Sargent Test		Put the bar down 50 Kg		Squats 1 minut		Running 1km	
Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
1	7.10	7.00	25	22	1	1	18	24	10	14	32	40	7	10	29	34	3.80
2	8.53	8.50	34	33	1	1	19	28	9	12	20	20	6	9	26	31	4.50
3	9.14	9.00	38	38	0	0	16	25	2	2	17	18	7	11	27	30	4.60
4	8.64	8.58	38	37	0	1	20	27	2	2	22	27	2	3	48	55	4.55
5	9.35	9.27	40	40	11	15	33	42	22	24	19	21	8	9	48	54	4.65
6	7.59	7.50	24	22	5	7	30	39	14	18	28	35	8	10	49	56	3.70
7	7.59	7.50	25	23	5	6	28	35	12	16	28	36	7	8	40	49	3.75
8	7.50	7.50	24	23	13	16	22	29	18	22	36	42	10	11	24	28	3.50
9	7.38	7.33	27	24	6	7	19	26	14	19	33	40	6	6	28	36	3.45
1	7.85	7.59	25	24	5	6	19	27	15	20	37	46	6	7	25	33	3.65

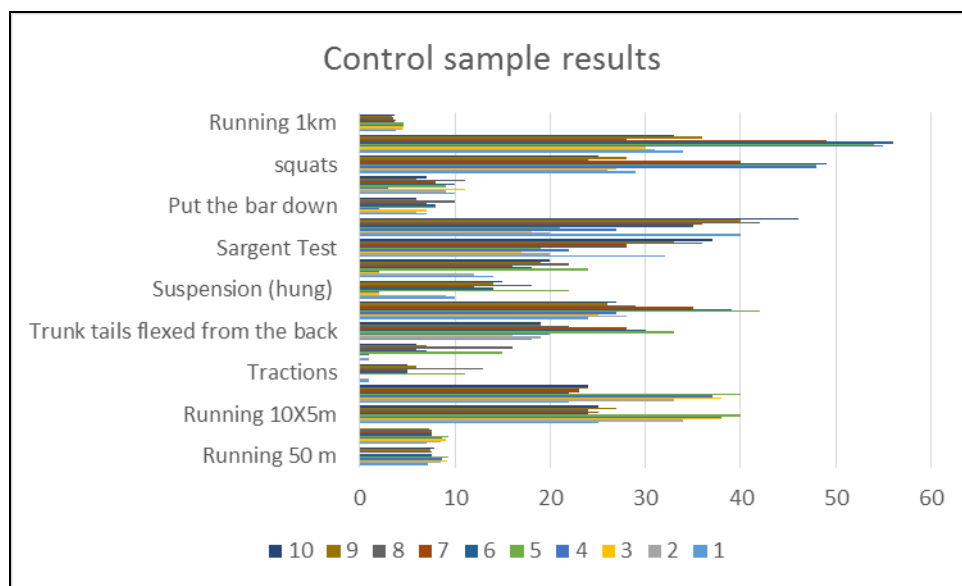


Figure 1. Test results on control samples

## Results

Taking into account the contemporary era in which performance sport has evolved significantly, athletes are the most important target to be followed in terms of morphological, physiological, psychological or behavioral changes.

We can say that research on rugby shows that the morphological changes that occurred over time have improved both the athletes' ability to exercise and the general state of the entire locomotor system. Moreover, medical sciences have a very important role in the scientific organization of the physical exercise process.

Through this study we highlighted some particularities of rugby players from an anatomic and functional point of view. To highlight these particularities, I chose to present information about the origin and the formative value of this sport as well as aspects that highlighted the considerable development of rugby. He has always managed to maintain a high standard of sportiness, ethical behavior and fairplay.

Also, during the study we highlighted the methodology of education and development of technical and tactical capacities, as well as a system of means for education and development of technical and tactical capabilities, we demonstrated the advantages of using a battery of tests to assess these skills.

Rugby is the sport that develops qualities such as team spirit, understanding, cooperation and respect for colleagues. Its foundation stones are always the pleasure to participate, the courage, the skill required by the game, the love for a team game that enriches the lives of all those involved and the lasting friendship inspired by the common interest in the game.

Using the methods used, the research carried out on the rugby pupils highlighted certain specificities specific to the junior's age, all of which are emphasized in the present paper, contributing to the enrichment of the knowledge in the field of this sport.

The study aims to present models of drive systems designed to optimize players' technical and tactical training. The aim of the research was to provide technical proofs and games provided by the participants.

## Conclusions

Evolution of averages for both samples, between initial testing and final testing, is positive. We note that the relevant progress between the two tests is quantitative.

The level of homogeneity of the group of subjects improved between initial testing and final testing, as evidenced by the results of the indicators.

The distribution of results around the average is in most cases positive.

The result of the significance of the difference between the averages of two correlated strings denotes a confidence level of 99%, which means that the progress is significant.

The drive systems models included in a suitable program are efficient.

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## PARTICULAR ASPECTS IN THE PSYCHOMOTOR DEVELOPMENT OF PRIMARY SCHOOL STUDENTS, IN RELATION TO THEIR HOME ENVIRONMENT (URBAN/RURAL)

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### Abstract

Complex function directly involved in the adjustment of individual behavior, psychomotricity provides the child with the optimal conditions for acquiring a system of skills designed to provide him with an effective adaptation to the growing demands of the environment in which he is active. Therefore, it is advisable to have a knowledge as thorough as possible, doubled with a clearer understanding of the main factors specific to the psychomotor phenomenon, the relationships established between them, their dynamics within the general motor component and their specific manifestation in certain environmental conditions (urban / rural).

Present as a specific objective of physical education, the development of psychomotricity ensures the completion of the acquisitions specific to the various stages of learning in the life of the child. Knowing the level of development of the psychomotor component has always been a permanent concern of the specialists in the field of physical education, because it is the basis of the elaboration of the different intervention strategies, which are specific to each educational cycle, especially to every lesson of physical education. For this reason, the return of this age stage, of crucial importance for the further development of the child, to the research domain, is a well-defined goal of this research.

Regarding the methods, 40 subjects, male and female primary school students, coming from urban and rural areas, were selected to participate in this research experiment. Using a part of the Bruininks-Oseretsky Test – Second Edition, the experiment analyzed possible differences between their psychomotor development, in the balance and strength subtests.

The analysis of the results provided by this experiment allows specialists, directly involved in the educational process, to adapt it according to modern demands. Moreover, we can conclude that the use of Bruininks-Oseretsky Test - Second Edition (BOT-2), for the purpose of a thorough and complex psychomotor assessment of primary school students, is not only necessary but also advisable.

The application of the physical education program at the level of the primary education cycle, by specialized teachers, is an essential condition for the professional guidance of the educational process and creates the opportunity to start some specific researches at this stage and to make a complete and complex evaluation of the different aspects related to the psychomotor behavior of the child.

**Keywords:** psychomotor development, primary school students, urban and rural environment

### Introduction

The insufficient movement experience of more and more children entering the school environment as a result of inadequate psychomotor stimulation in the pre-school period, coupled with the more and more pronounced changes, demands and rigors of everyday life, call for reconsideration and return to the spectrum of theoretical and, especially, the practical aspects of knowing the level of psychomotor development of children and the concrete possibilities of optimization.

Present as a specific objective of physical education, the development of psychomotricity ensures the completion of the acquisitions specific to the various stages of learning in the life of the child. Knowing the level of development of the psychomotor component has always been a permanent concern of the specialists in the field of physical education, because it is the basis of the elaboration of the different intervention strategies, which are specific to each educational cycle, especially to every lesson of physical education.

The Bruininks-Oseretsky Test of Motor Proficiency, Second Edition, provides a comprehensive assessment of motor skills, including differentiated measures of gross and fine motor proficiency, making it a useful instrument to a variety of practitioners, specialists and researchers in a variety of settings. Moreover, due to its large scale use for the testing of different psychomotor components or the entire psychomotor capacity led to its recognition as one of the most important and valid evaluation instruments.

### **Purpose:**

Through its specific tasks and objectives, this research analyzed possible differences in psychomotor development of primary school students, in relation to their home environment. Using a part of the Bruininks-Oseretsky Test – Second Edition, this study highlights the importance of proper evaluation of these aspects, by using modern and effective tools, which contributes to a better understanding of educational process.

### **Hypothesis:**

The results obtained from the assessment of primary school students through the Bruininks Oseretsky Test – Second Edition will reveal significant differences in balance and strength components in relation to the subject's home environment.

### **Methods:**

Part of the author's doctoral thesis, the psycho-pedagogical experiment took place between March 2010 - June 2010 and it encompassed the following stages:

- 1) March 20, 2010 - May 21, 2010: the evaluation of subjects from the urban area;
- 2) March 28, 2010 - April 1, 2010: first stage of evaluation of subjects from the rural area;
- 3) June 2, 2010 - June 4, 2010: second stage of evaluation of subjects from the rural area.

For the research, a number of 40 subjects were selected (20 boys and 20 girls), 1<sup>st</sup> up to 4<sup>th</sup> grade students, coming from urban and rural areas alike. Regarding the urban area, of the 20 selected subjects, 15 were students from David Praporgescu 113 Elementary School, while the remaining 5 belonged to 162 Elementary School. In the rural area, the subjects were students of Simion Bărnuțiu Elementary School from the village of Tiur, Alba County.

As an assessment tool, we used the improved version of the Bruininks-Oseretsky Test (BOT-2), a series of tests administered individually, with very precise and well-targeted objectives, which aim at evaluating a large range of motor skills, on subjects between the ages of 4 and 21. This test was conceived to be used, among others, by kinesiotherapists, psychologists, sports teachers, coaches and it seeks to offer them an efficient instrument for measuring fine and gross motor skills. BOT-2 evaluates abilities from four different motor areas:

- Fine Manual Coordination/ Fine Manual Control: Subtest 1 – Fine Motor Precision; Subtest 2 – Fine Motor Integration;
- Manual Coordination: Subtest 3 – Manual Dexterity; Subtest 7 – Upper Limb Coordination;
- Body Coordination (General): Subtest 4- Bilateral Coordination; Subtest 5 – Balance;
- Strength and Agility: Subtest 6 – Running Speed and Agility; Subtest 8 – Strength.

For this research, from the total of eight subtests specific to the motor areas described above, we opted for the balance and strength subtests, which involve the following items:

#### **Subtest 5 - Balance**

- Item 1: Standing with Feet Apart on a Line-Eyes Open
- Item 2: Walking Forward on a Line
- Item 3: Standing on One Leg on a Line-Eyes Open
- Item 4: Standing with Feet Apart on a Line-Eyes Closed
- Item 5: Walking Forward Heel-to-Toe on a Line
- Item 6: Standing on One Leg on a Line-Eyes Closed
- Item 7: Standing on One Leg on a Balance Beam-Eyes Open
- Item 8: Standing Heel-to-Toe on a Balance Beam
- Item 9: Standing on One Leg on a Balance Beam- Eyes Closed

#### **Subtest 8 - Strength**

- Item 1: Standing Long Jump
- Item 2: Full/Knee Push-ups
- Item 3: Sit-ups
- Item 4: Wall Sit
- Item 5: V-up

**Results:**

Statistical processing of the research results was accomplished using the BOT-2 ASSIST™, Scoring and Reporting System (software belonging to the Bruininks-Oseretsky Test, Second Edition) and EXCEL 2003 Software of Microsoft Company. The BOT-2 ASSIST™ converts total scores obtained by subjects after applying the Bruininks-Oseretsky Test, Second Edition into derived scores, which shows a common significance in terms of their interpretation from a subtest to another and from one age group to the other.

As part of our scientific approach, interpretation of the results was based on scale score, which tells how far an examinees' point score is from the mean point score of examinees of the same age, taking into account the standard deviation of point scores in the population sampled.

Table 1: Scale Score Results - Rural vs. Urban Comparison on the Balance and Strength Subtests

Statistical indicators	BALANCE		STRENGTH	
	Rural	Urban	Rural	Urban
Arithmetic mean	15.35	15.50	15.70	15.20
Median	15.50	15.50	17.00	16.00
Standard deviation	3.96	4.07	20	22
Maximum value	24	23	9	8
Minimum value	8	10	11	14
Amplitude	16	13	4.33	7.17
Coefficient of variation (%)	25.8%	26.3%	23.5%	23.1%
Difference of means		0.15	-	-0.50
Effect size (Cohen)		0.0004	-	0.01
<b>ANOVA Test</b>				
F critical	4.10		4.10	
Degrees of freedom between the groups- $df_1$	1		1	
Degrees of freedom inside the groups – $df_2$	38		38	
F calculated	0.01		0.19	
P	0.907		0.663	

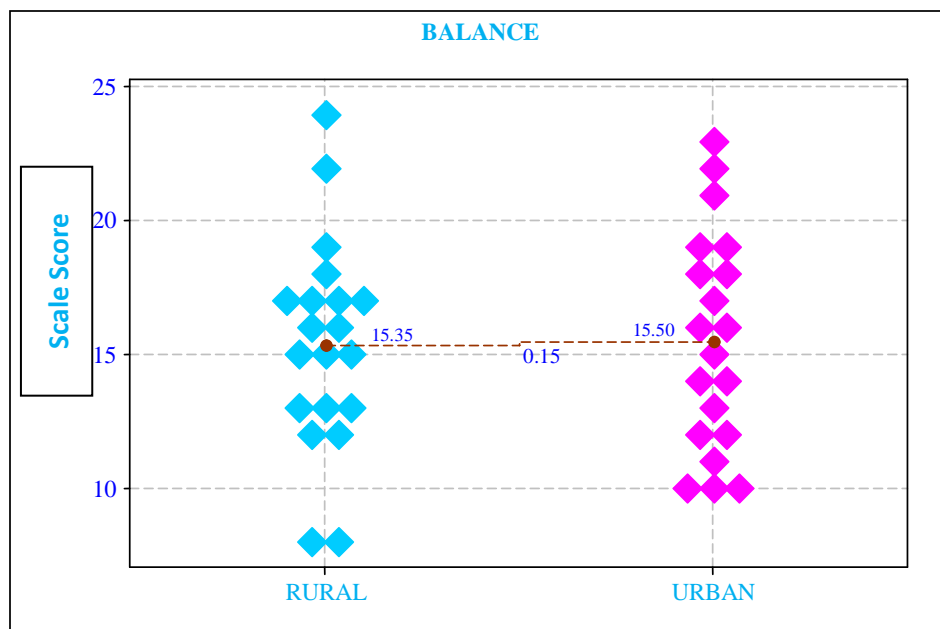


Fig.1. Scale Score Mean - Rural vs. Urban Comparison Balance Subtest

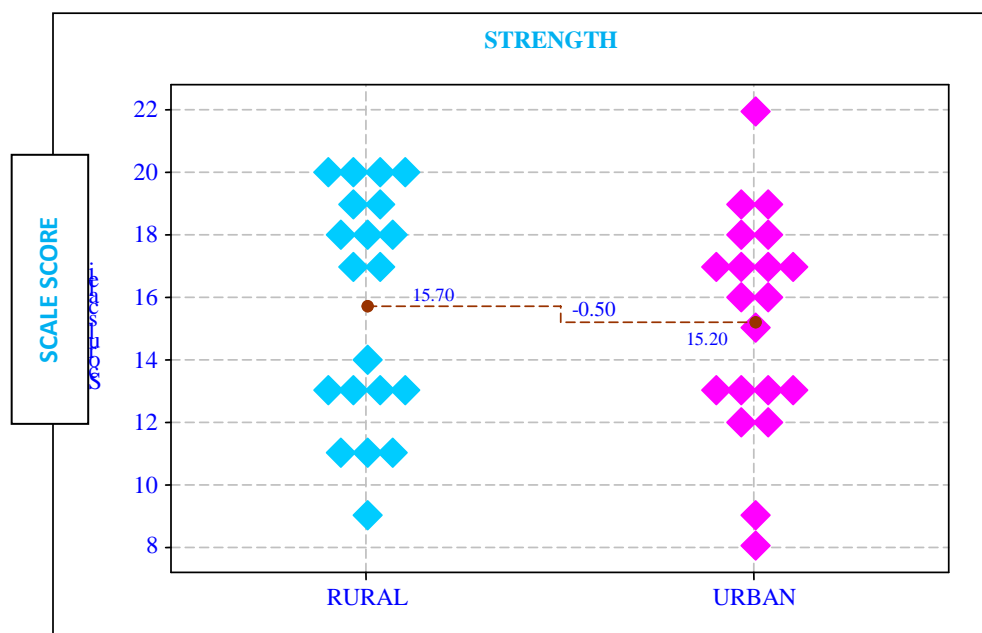


Fig. 2. Scale Score Mean - Rural vs. Urban Comparison Strength Subtest

## Conclusions

The values in the Balance subtest were measured for 40 subjects. The arithmetic average 15.35 achieved by the rural group is less than the 15.50 arithmetic mean achieved by the urban group by 0.15 units. The standard deviation and the coefficient of variation specific to each group characterize both rural and urban groups as inhomogeneous. Cohen's effect-size index indicates that the differences between the results of the two groups are very low. Variance analysis performed with the ANOVA test does not revealed a statistically significant difference between these averages,  $P = 0.907$  being greater than 0.05. Therefore, the null hypothesis is accepted and the alternative hypothesis is rejected. The results obtained by the urban group are on average higher.

The values for the Strength subtest were measured for 40 subjects. The arithmetic mean 15.70 achieved by the rural group is higher than the arithmetic mean 15.20 made by the urban group with 0.50 units. The standard deviation and the variation coefficient characterize both rural and urban groups as inhomogeneous. Cohen's effect-size index indicates that the differences between the results of the two groups are very low. Variance analysis performed with the ANOVA test does not revealed a statistically significant difference between these averages,  $P = 0.663$  being greater than 0.05. The null hypothesis is accepted and the alternative hypothesis is rejected. The results obtained by the urban group are, on average, lower.

The application of the physical education program at the level of the primary education cycle, by specialized teachers, is an essential condition for the professional guidance of the educational process and creates the opportunity to start some specific researches at this stage and to make a complete and complex evaluation of the different aspects related to the psychomotor behavior of the child.

Complex function directly involved in the adjustment of individual behavior, psychomotricity offers the child the optimal conditions for acquiring a system of skills designed to provide him with an effective adaptation to the growing demands of the environment in which he is active. Therefore, it is advisable to have a knowledge as thorough as possible, doubled with a clearer understanding of the main factors specific to the psychomotor



phenomenon, the relationships established between them, their dynamics within the general motor component and their specific manifestation in certain environmental conditions (urban / rural).

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## THE ANALYSIS OF THE SPECIALISTS' OPINIONS AS CONCERNS THE ROLE OF USING THE FOOTBALL GAME IN THE PHYSICAL EDUCATION OF PUPILS IN THE PRIMARY SCHOOL

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### Abstract

*Background.* In the last years, a series of changes of methodological order were operated in the educational system in Romania, including at the level of primary school, which is considered the most important step in the multilateral development of pupils

*Objectives.* This thing refers to all the study subjects and to a great extent also to the Physical Education, which comes to influence essentially the physical training and development of pupils.

*Methods.* In this sense it was performed a quiz-like enquiry, which included 15 questions and they were addressed to teachers of the Physical Education, working in primary school in Romania, as well as to other groups of teaching staff, operating in sports clubs and having groups of children aged 7 to 11.

*Results.* As a result, both in Romania, as well as in other European countries, specialists from the Physical Education field came up with several opportunities regarding the efficiency of teaching the given subject by using various modern methodologies, different from the standard ones which are currently used in the pre-university learning institutions.

*Conclusion.* One of them would be the main use of sports games in the training process of pupils of the primary school within the school physical education. In this sense our aim is to use the football game inside various forms of training, and our interest is focussed on the specialists' opinions on this topic about the effects of using the given game.

**Keywords:** football game, pupils, primary school, physical education, physical training, physical development

### Introduction

Of all the learning stages within the pre-university education, a special attention is granted to pupils of the primary school. At this age, the physical education has an important role under all aspects.

Namely here, the children build up a strong motor foundation, a proper physical development, an ample enough luggage of habits and motor skills necessary for the future activity, regardless of the scope in which one pupil or another will operate (Chirazi M., 2001).

According to the data of the specialty literature (Coman S., 1995), within the school physical education at the level of primary school, by far not all the problems that fall into achieving the basic objectives of the school physical education at this level are solved.

Both Ciorbă C. (2016) and other authors; Chermit K.D. (2005), Guzhalovsky A.A. (1986), Kholodov Zh. K., Kuznetsov, V. (2004), Rață G. (2008), Roman C. (2002), suggests that there are different ways to approach the problem when using different methodical procedures to optimize the process of training a pupil at that age.

However, the authors Badiu T., Ciorbă C., Badiu G. (1999), expresses the opinion that there are a number of methodological modalities to increase the efficiency of physical education in school, including at the level of primary education, shared by other specialists in the field such as Roman C., Biro F. (2003).

One of them would be the use on a large scale of the football game in the training process of pupils of the primary school under different aspects, both within the lessons of physical education, as well as within other forms of organisation of the school physical education, such as active breaks, sports contests etc.

The use of two physical education lessons per week, in accordance with the results of the research of several specialists, such as Dragomir P., Scarlat E. (2004) and Stanculescu G. (2003), are sufficient to achieve a reasonable level of development of motor skills, in preparing students at this age.

The most important aspects aimed by our enquiry were:

- Assessing the level of the school physical education in Romania.
- Which of the curricular stages, school ages require increased attention from the part of the teaching staff.
- Highlighting the level of physical training of pupils in the primary stage.
- What are the most indicated and more requested sports games by the pupils in primary stage.
- The measure in which the use of elements and technical procedures in football can contribute to achieving the objectives of the school physical education.

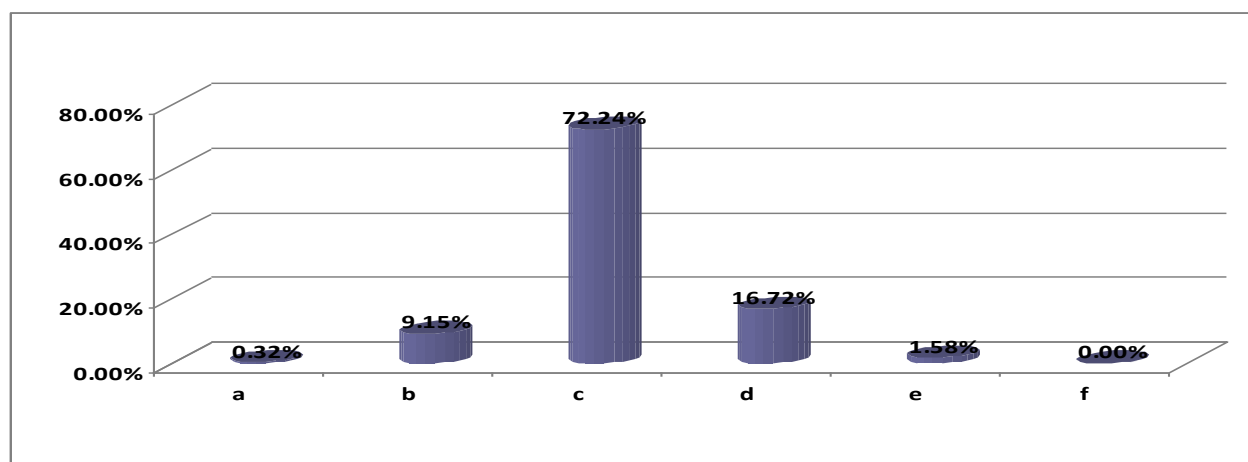
### Methods

The main purpose of our study was that of highlighting the specialists' opinions regarding the effects of the use of the football game within the physical education of pupils in the primary school. In this sense it was performed a quiz-like enquiry, which included 15 questions and they were addressed to teachers of the Physical Education, working in primary school in Romania, as well as to other groups of teaching staff, operating in sports clubs and having groups of children aged 7 to 11. In our research, there participated a number of 317 specialists.

### Results

Further on we are to analyse the recorded results and highlight the most important moments that have to do with optimisation ways of the training process for pupils in the primary cycle.

One of the general questions addressed to specialists was in reference to assessing the level of school physical education in Romania (fig.1).

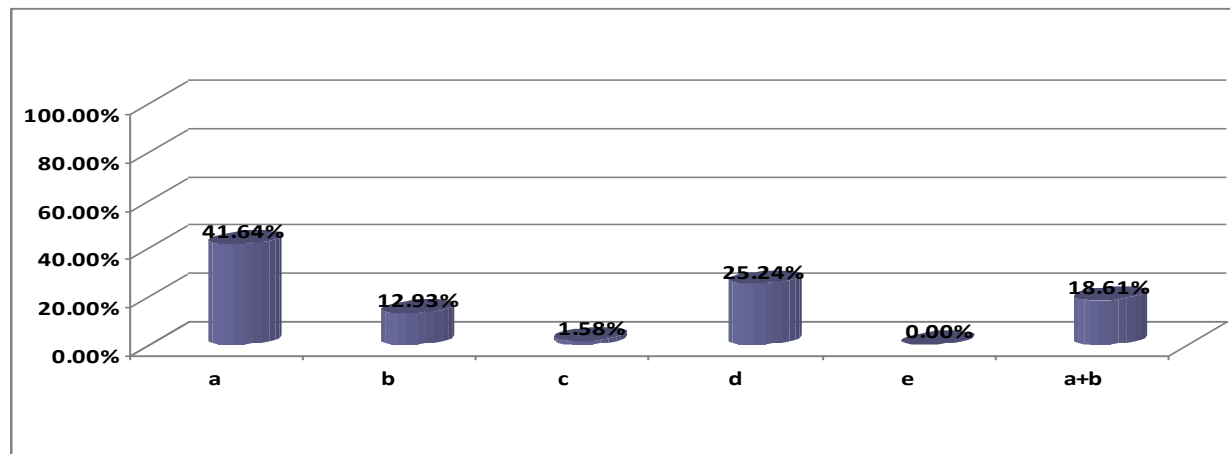


**Fig. 1.** Assessing the level of school physical education in Romania

By presenting the distribution of the answers, we easily notice that 72.24% assess the level of school physical training in Romania as being average. However, we cannot ignore also the percentage of 16.72% saying that the level is very low. Therefore, the situation that has to do with the level of the school physical education at the level of primary cycle is one rather mediocre, or which can even be called rather poor. As it turns out from the registered data, here it calls for new methodological interventions to increase the qualitative level of the training process at the given age.

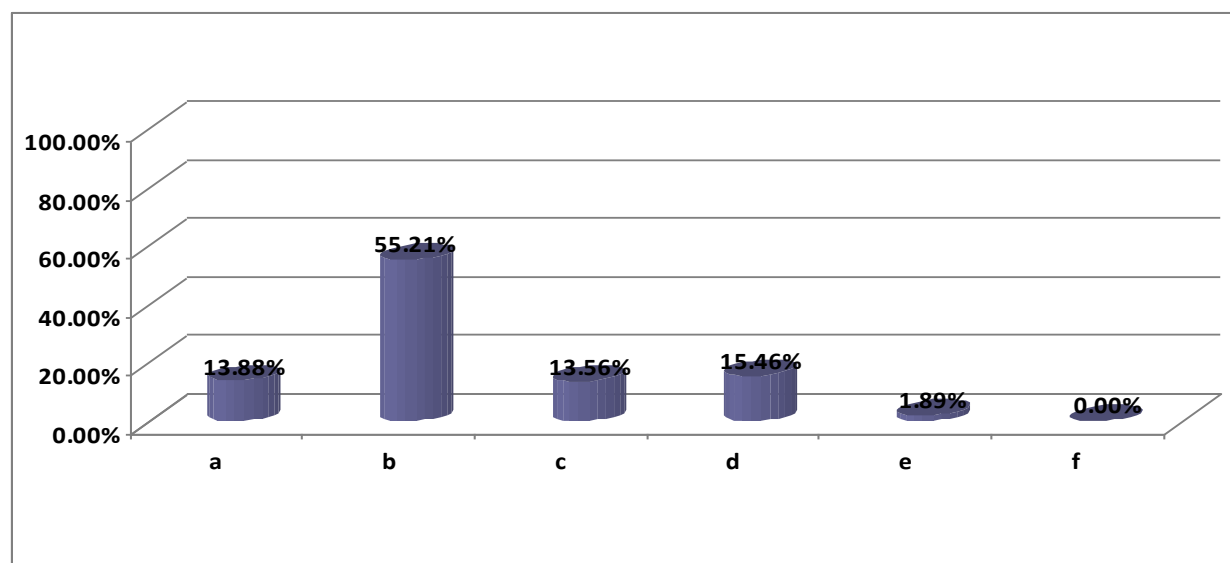
Talking about the most important ages as concerns the increased necessity for organisation of the physical education with pupils of the primary school (fig.2), it is clearly noticed that the age which comprises the primary school years is very important in this sense, where 41.64% of those questioned firmly emphasized this

fact. A special attention would also be necessary to the middle school stage within the teaching of physical education, fact mentioned by 12.93% of the total number of the surveyed teaching staff. Finally, about one forth, that is 25.24% of the specialists participating in the enquiry mentioned the absolute necessity of attracting a special attention to the organisation of the school physical education in all levels.



**Fig. 2.** The most important ages regarding the increased necessity as concerns the organisation of physical education with pupils in the primary school

A key question addressed to the teaching staff was that which has to do with assessing the level of physical training of the pupils in the primary cycle, this compartment actually represents the real state of things, where it is about the effectiveness of organising the physical education at the level of primary cycle and more. (fig. 3).



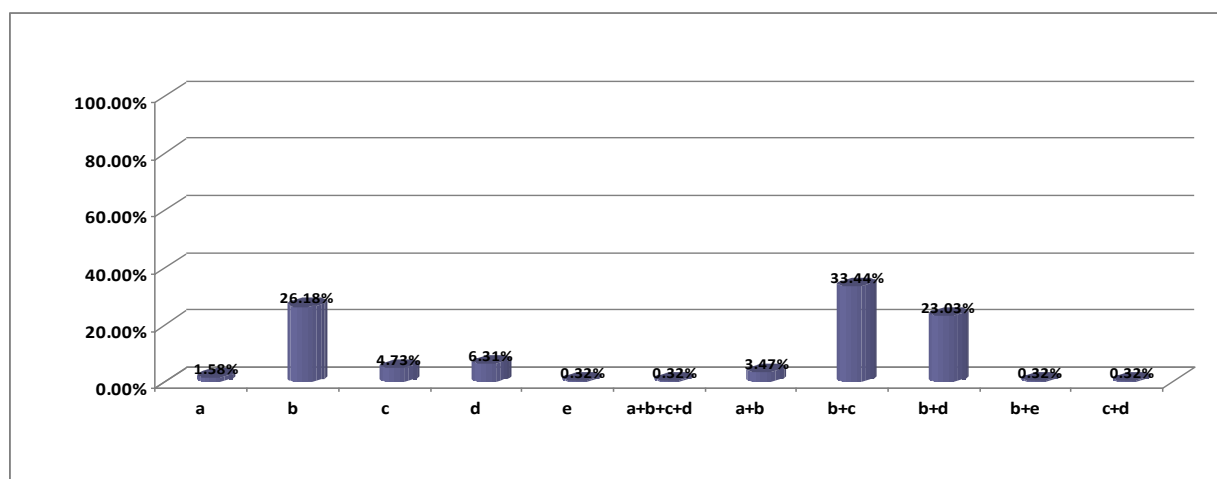
**Fig 3.** Assessing the level of physical training of pupils of the primary school in Romania

Thus, the level of physical training of pupils in the primary cycle is assessed by the specialists as being average, fact for which there opted 55.21% of the total number of specialists. A rather curious opinion was that of those who mentioned that the level of motor training of pupils in the primary cycle is high, although the

percentage of those having this opinion is of only 13.88%. Analysing the results in the matter, we think that these are in full accordance with those from the first question of the quiz.

Hence, we can deduce that the level of motor training of pupils in the primary cycle is a very mediocre one, which urges the teaching staff to search for new forms and methodological ways to optimize it.

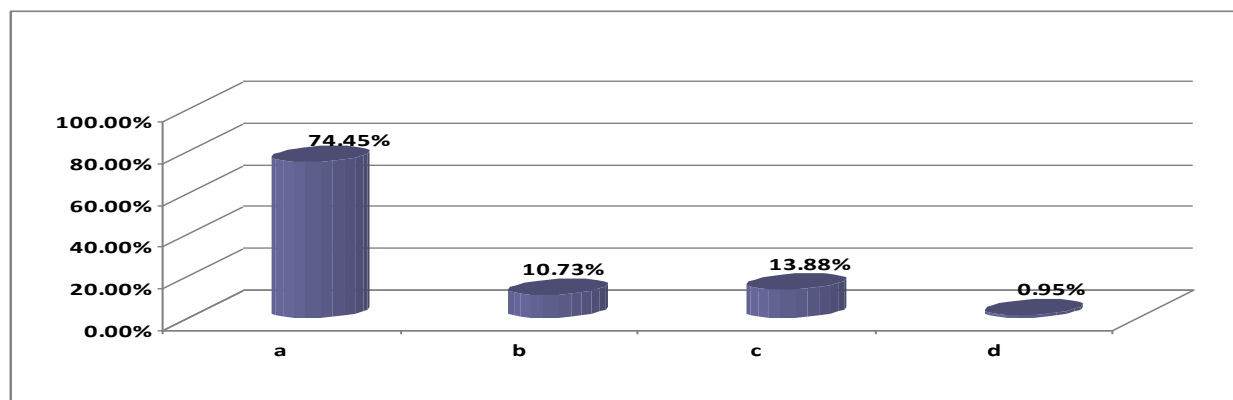
One of the questions addressed to the specialists in the field was that of their highlighting the most effective sports games and pupils' preferences to be practiced within the school physical education at the level of primary stage (fig. 4).



**Fig. 4.** The most effective sports game and the pupils' preferences to be practiced within the school physical education at the level of primary school

At the given question, the teachers and coaches made up two categories of respondents, one with those who focussed on using the football game on a large scale (26.18%), whereas the others were distributed uniformly emphasizing the other sports games provided by the school curriculum at physical education, such as: the handball game (6.3%), the volleyball game (1.58%) and the basketball game (4.73%). As we can notice, the number of those who prefer the football is predominant, namely 26.18%.

The next question is a direct one for the topic of our research, meaning the effectiveness of using football elements in the classes of physical education with the pupils of the primary school (fig. 5)



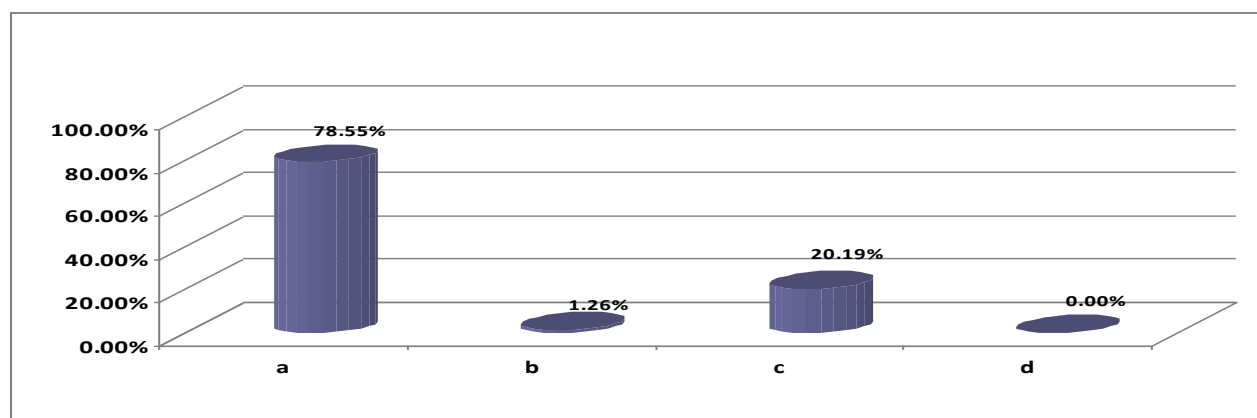
**Fig. 5.** The effectiveness of using the football elements in classes of physical education with pupils in the primary school

Analysing the chart and respective figure, it is clearly noticed that both the specialists, as well as the pupils, basically have the same option regarding the effectiveness of practising the football game within the

physical education at the level of primary school, where actually the overwhelming majority of specialists think positively in this sense (74.45%). About 10% did not agree with this option, while 13.88% could not decide at that point.

Consequently, the football game is welcome in the training process, being quite easy to implement, all the more so when the curriculum offers quite a lot of opportunities for the subject “Physical education” in this sense.

The next question has to do with the influence of practising the football game on the motor training of pupils in the primary school (fig. 6).

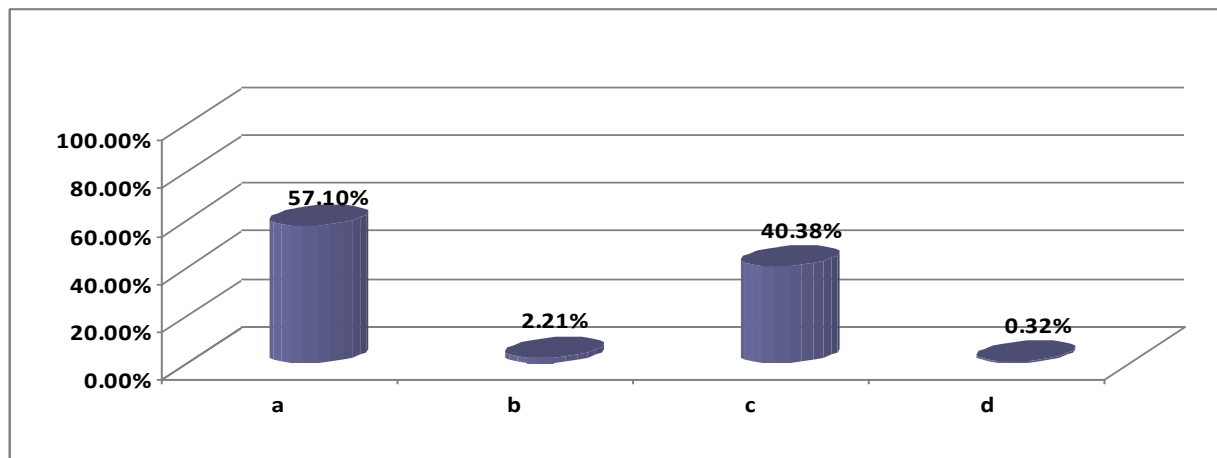


**Fig. 6.** The influence of practising the football game on the level of motor training of pupils in the primary school

Much like in the previous case, the specialists had actually identical opinions in the given case, where 78.55% think that practising the football game within the physical education with pupils of the primary school will influence considerably their level of motor training and only 20.1% do not deny this thing, but consider that practising this game will partially improve the level of motor training of pupils of the respective age.

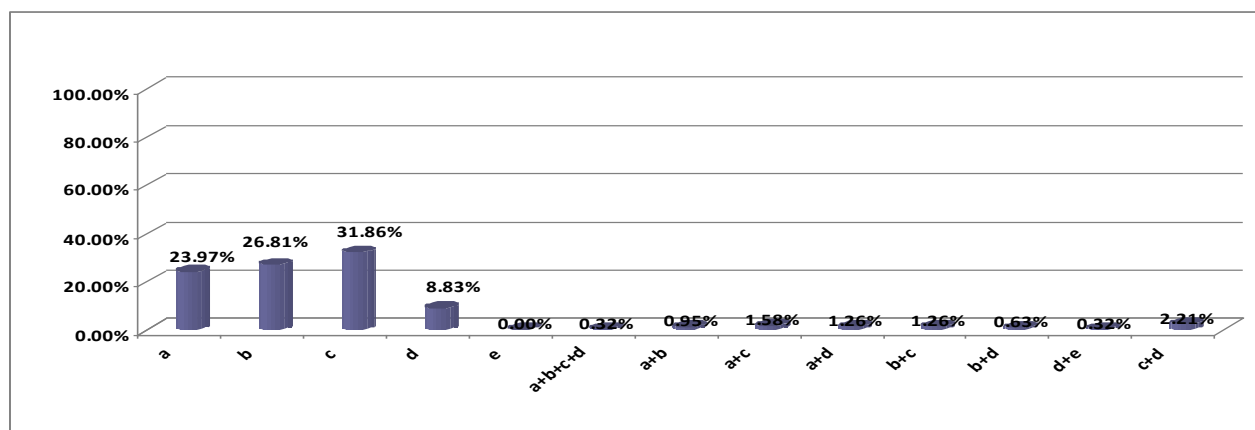
Next, we were interested what is the influence of applying the elements in the football game to the physical education classes with pupils of the primary school (fig. 7). As noticed also in the given figure and figure 2.11, about 181 respondents (57.10%) think that by using the elements in football at the physical education classes can represent a premises for learning the football game, and a part of the pupils in the respective grades might choose this game in the future either as a hobby, or a sports test to become a professional sportsman at the given trial.

Approximately 40.38% think that using the elements of the football game in the physical education classes might influence only partially the pupils in this sense, and only 2% of the total number of teaching staff are sceptical about using elements of the football game in the physical education classes.



**Fig.7.** The influence of applying the elements of the football game to the lessons of physical education with pupils in the primary school

Eventually, the last question was assessing the organisation forms of the physical education of pupils in the primary cycle with the application of elements and technical procedures in the football game (fig. 8).



**Fig. 8.** Forms of organising the physical education of pupils in the primary school by applying the elements and technical procedures of the football game

Analysing the recorded results, it was proven the fact that the most preferred forms of organisation of the school physical education at the level of primary school by using elements and technical procedures of the football game are the dynamic time-outs, where around 41.64% opted for this form, as well as the sportive divisions (48.58%), in the second half of the learning day. However, part of the specialists did not reject other forms too, such as the morning refresh routine, sports contests with elements from the football game.

### Conclusions

Analysing all the results of the specialists' opinions on the issue of the optimization of the training process of pupils in the primary cycle for the subject of Physical Education by mainly using the dynamic games with elements from the football game, it was clearly proven that this game is a fairly motivating and appealing one for the pupils of the respective age. The great majority of pupils want and enjoy this kind of sports and are ready to practice it under any form. We think that introducing elements of the football game in the training process of pupils from the primary school would give a positive impulse to increasing their level of motor and

functional preparation and would motivate the pupils in the respective grades into practising the physical exercise in general.

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## COMMUNICATION IN PHYSICAL EDUCATION AND SPORT LESSONS

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### Abstract

Developing effective communication in physical education is a necessary ingredient for encouraging students to engage in physical activity. The purpose of this paper is to understand how to build trusting and effective relationships with students as an essential part of a support teacher's role in physical education and sport lessons. This paperwork explores ways to communicate in different situations and contexts and the importance of following procedures for confidentiality and information sharing.

Communication is one of the most important skills that a physical education teacher can possess. Clear communications to your students helps them to learn your lessons and keep them safe. Effective communication builds a sense of community where students feel confident in their abilities. With greater confidence and support, students are more likely to embrace physical activity as a source of fun. A good communication facilitates students learning and increases participation.

**Keywords:** communication, professional relationships, physical education and sport

### Introduction

Good communication is pivotal when working with students to establish and maintain relationships. It is an active process that involves listening, questioning, understanding and responding. We should always communicate appropriately to match the stage of development, personal circumstances, and needs of the participant we are communicating with.

Communication is the act of expressing (or transmitting) ideas, information, knowledge, thoughts, and feelings, as well as understanding what is expressed by others. The communication process involves both sending and receiving messages and can take many forms (Burton & Raedeke, 2008).

Research shows that when we communicate feelings and attitudes, only a small percentage of our overall message comes from the words we use. 55% of our message comes from body language (especially from movements of the small muscles around the eye which can convey shock, disbelief, doubt or disgust), 38% of our message comes from tone of voice and only 7% of our message is conveyed by the words we use (Mehrabian, 2007).

### Objectives

The study focuses on identifying direct or indirect forms of communication in physical education and sport lessons and how we used them in certain moments of the practical lesson.

- Understand the principles of developing positive relationships with students;
- Understand how to communicate with students.

### Methods

In preparing the paper we used the following research methods: bibliographic study and observation method, which help us to understand the role of teacher language in the teaching and learning of physical education.

### Why is effective communication important?

We are more likely to communicate information to one another if we have positive relationships. Parents and other adults who come into the schools/university are more likely to give beneficial support if communication is strong and effective – this, in turn, benefits students. It is also important for students that we model effective communication skills. This means checking what we are saying sometimes in moments of stress or excitement, so that they can understand what our expectations are in school/university. If we ask students to

behave in a particular way when communicating and then forget to do so ourselves, they will find it harder to understand the boundaries of what is acceptable. In each communication appear the same elements, but the goals are different. We usually communicate for:

- to persuade (a student to go to aerobics to get rid of the overweight);
- to evaluate (students' performance at annual control samples);
- to inform (a student/player on a specific technique of volleyball game);
- to motivate (the basketball team before a confrontation with a strong opponent);
- to solve (problems arising from a conflict between two students during the PE hour).

### **The principles of relationship building**

**Effective communication** is the key area for developing relationships with others and also covers many different forms of communication.

**Respect.** It is very important to be courteous and respectful, and to listen others points of view. Students with whom we work may also be from different cultures and have different beliefs or values from our own. We should ensure that we acknowledge and respect the views of others at all times and take time to remember names and preferred forms of address. Treating the people around you with respect makes them more likely to respect you and your program.

**Be considerate.** Take the time to consider the positions of others. We may be working with a student who is under particular pressure at a given time and need to understand why they may have behaved or reacted in a certain way or out of character.

**Personalization.** As a physical education teacher will invariably have to deal with different students with different personalities, so it is important to construct your message to suit the student you are working with. A "one size fits all" approach simply won't work.

**Listen.** Make sure that you take time to listen your students, in particular if they are asking for advice or help, or if they need to confide in you. You should always show that you are interested in what they have to say and respond appropriately.

**Clarity** is an essential quality of teachers speech. If students can't hear or understand teachers, they will not be in a position to do what is required of them (Bailey, R., 2007).

When you have conversations with students in which you are giving them information, you should always ensure that they are clear what you have said at the end of the discussion. This is because it can be easy to be distracted from the main point of the conversation.

**Humour.** A sense of humour can be an invaluable skill for the PE teacher. Humour can be a useful strategy for defusing tense situations, or simply helping to maintain a pleasant, positive learning environment (Bailey, R., 2007).

### **Communication skills in physical education and sport lessons**

**Verbal communication** is the spoken word, while **nonverbal communication** involves actions, facial expressions, body position, and gestures. Communication can occur in one-one-one or group settings, and in written formats (e.g., printed materials) or in visual formats (e.g., pictures, videos, and observational learning) and it involves not only the content of a message but also its emotional impact, or the effect the message has on the person receiving it (Burton & Raedeke, 2008).

Webster (2010) proposed six skills that every physical education teacher should have it in order to improve the effectiveness of their instructional communication processes and increase student participation and motivation. The first three are rhetorical communication skills (being clear, content relevance, and using humor) while the second three are relational communication skills (immediacy, communication style and listening).

As PE teachers and coaches, we probably use verbal communication more than any other method. We know from experience that talking with students/players, rather than at them, can be one of the most effective means of communication. When you tell students/players what to do, always consider how they will receive your

message; try to anticipate their reactions. Through the verbal communication the PE teacher sets out the themes of the lesson, explains the activity to follow, communicates different elements specific to the sport activity. They use commands associated with specific actions at various times of class organization, checking the position of the body: straight, resting or moving direction (left, right).

The PE teacher has to contend with a variety of context (classroom, gymnasium, sports hall, swimming pool, playing field), and must also recognize the intrinsically practical nature of the subject. Good use of spoken language is essential, explanations and instructions should be succinct, talk must not dominate in practical sessions where the objective is to get class moving (Capel & Whitehead, 2010).

Physical education teachers' classrooms are often much larger than those of teachers who teach other subjects. Therefore, it is important that physical education teachers speak loudly. They should take extra care to ensure they are not yelling - something that is very easy to find yourself doing in a gymnasium! It's a good idea for physical education teachers to have students gather around in a small group when giving important directions to avoid needing to yell to students who are far away. When in an outdoor setting where students can be spread out in various directions, it's a good idea to use a megaphone if available.

When speaking, physical education teachers should modulate their tone to maintain students' interest and attention. It's also a good idea to repeat important points and directions. This is important because students can potentially get hurt if they do not hear or follow all directions.

The traditional view of the PE teacher has often been one of a strict teacher adopting military-style discipline to a fearful group of students. Recent trends in education have attempted to move away from this image, even to a point where shouting is seen as unnecessary (Grout, H. & Long, G., 2009).

**Nonverbal communication.** Physical education teachers cannot solely rely on verbal communication. Sometimes, verbal communication may not be feasible or the teacher doesn't want to lose his or her voice from speaking loudly for several hours a day. Fortunately, there are a number of *non-verbal* (using actions and body language) means that physical education teachers can use to communicate with their students.

Physical education teachers can use gestures and body language to communicate with their students. They can use gestures to get students' attention (such as waving their arms at a student who is looking at them, but too far away to hear them). Teachers can also use body language to model how to do specific activities and communicate the proper technique or form for activities. A physical education teacher can also hold up a hand while speaking to indicate to a student who is interrupting that they need to stop.

Nonverbal messages are less consciously controlled and that's why they're harder to hide. They can reveal our unconscious experiences and attitudes. For example, PE teacher asks a student how he/she feels before the exercise begins. The student sighs, look down and mumble, "I'm fine". Although the words convey that it is all right, the teacher will perceive another content by interpreting nonverbal messages.

Although nonverbal messages are very strong, they are often difficult to interpret in a fair way. Therefore, we must take care in their interpretation and try to correctly judge the context in which it is received.

*Physical presence.* Often, the first impression across a person depends on its physical presence. We observe, since first glance, that someone is fat, weak, clumsy, familiar, attractive or agreeable. A small thing can convey a consistent message. Twenty years ago, if a student appeared in front of the teacher or with a tattoo or an earring in his ear, he would have been quickly kicked off from hour. Now it's quite acceptable for a student to wear an earring in his ear and this conveys a different message. Clothing and hairstyle provide extremely consistent information.

*Posture.* The shoulders leave express a low self-esteem or depression, while a right posture transmits control and energy.

*Gestures.* They transmit messages even if we do not propose. For example, crossing your arms on the chest, usually expressing a defensive attitude, the lack of willingness to open up in front of others. The tightening of the arms on the back of the neck denotes superiority. Coaches often express themselves by gestures – if they express their thoughts verbally, they risk being severely penalized by referee.

*Position of the body.* It refers to the preservation of a space between the interlocutors and the position of the body relative to others. It's an aspect of proxemics that studies how people communicate through the way

they use space. An example of the language that uses the corporate position is when the coach approaches more than the players with whom the game will start, rather than the backup players. This denotes a kind of favoritism and should be avoided.

**Facial expression.** The face is the most expressive part of the body. When listening to others, people often study facial expressions and eye movements to find hidden meanings of messages. Maintaining visual contact means most often that the listener is interested in the message. When people feel embarrassed or uncomfortable, they tend to avoid eye contact and look the other way. The smile is the universal means to overcome language barriers and the most effective way of communication. Smiles and other facial expressions can invite us to communicate and provide feedback on communication efficiency.

**Voice characteristics.** Verbal communication is often strengthened or contradicted by the sound of the voice. It's important what you say, but it's more important than what you say. The voice characteristics betray the true feelings, dispositions or attitudes. The voice characteristics are height (high or low), tempo (Speed), volume (hard or slow), rhythm (cadence) and articulation (statement).

**Questioning.** You can often achieve far more by asking students rather than telling using what is known as the question-and-answer technique. For example, if you ask a student a question such as, "Who can tell me why that was such a good pass?" or "What defensive systems are our opponents using?" you will achieve two objectives. First, you will elicit the correct technical diagnosis; and second, by involving the students in the discussion, you will encourage them to develop their own powers of observation and critical analysis. Getting students to appreciate and develop their own knowledge of the game is surely at the heart of good teaching, and the question-and-answer technique enhances this process.

**Listening.** People feel more comfortable if they express their ideas and the feelings of someone who wants to listen. Listening to efficiency denotes sensitivity and encourages an open exchange of ideas and feelings. If you really want students to come to you and trust you, you have to make a considerable effort to listen to them.

Listening is a very different skill from hearing. Hearing is receiving messages, but it does not guarantee the message has been interpreted and given consideration. The fact that we receive information does not mean that we understand the message or emotion attached.

During classes of physical education the PE teacher must listen to any problem of the students and try to help them. They should feel comfortable to ask for advice and help, problems that occur most frequently are health problems (a student does not feel well, dizziness from effort), conflicts between students.

**Skills such as empathy and sympathy.** Empathy is the capacity to understand or feel what another person is experiencing from within the other person's frame of reference, i.e., the capacity to place oneself in another's position.

Compassion and sympathy are terms associated with empathy. Compassion is often defined as an emotion we feel when others are in need, which motivates us to help them.

Sympathy is a feeling of care and understanding for someone in need. Some include in sympathy an empathic concern, a feeling of concern for another, in which some scholars include the wish to see them better off or happier.

To manifest our sympathy and empathy towards our students we use the following communication skills: oral - questioning by asking questions to find out their problem, listening to the problem, non-verbal by touching, hugs, attitudes of encouragement like head-approval movement, mimic and visual contact.

## Conclusions

As a PE teacher, in order to contribute to positive relationships, we have to demonstrate and model effective communication skills in our dealings with students. This means that we should consider both how we approach other people and how we respond to them.

Effective communication and positive relationships do not happen by chance. We should think about the way we relate to others and the messages that this sends out. In situations where communication breaks down, misunderstandings can lead to bad feeling.

Communication is one of the most important skills that a physical education teacher can possess. Clear communications to your students helps them to learn your lessons and keep them safe. Effective communication builds a sense of community where students feel confident in their abilities. With greater confidence and support, students are more likely to embrace physical activity as a source of fun. A good communication facilitate students learning and increase participation.

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## INTERDEPENDENCE BETWEEN PHYSICAL AND INTELLECTUAL DEVELOPMENT OF STUDENTS IN PRIMARY SCHOOL

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### Abstract

Harmonization of the relationship between intellectual development and physics is done in mutual dependence and increasingly interested in multidisciplinary research, especially those with an important impact on health. The practice of physical education from the youngest age favors the development of the particularities of manifestation of the modern man's behavior and improves the quality of life.

*Objectives.* At the level of the primary cycle a study was carried out on the issue of strengthening the health status of students by harmonizing the motor and intellectual components and informing the decision makers about the motor and somato-functional state of the school population.

*Methods.* The following methods were used in the study: study of specialized literature, school documents, questionnaire method, survey method, statistical method, graphic method.

*Results.* Research on primary school pupils confirms the correlation between the physical, intellectual and health development components, so children with better levels of motor-based indicators have greater stability against the adverse environmental factors that are manifested by lower illness.

*Conclusion.* The determination of physical and intellectual skills of the group is insufficiently developed in the students of the group tested, which recommends practicing physical exercise both in physical education lessons and in extra-curricular activities.

**Keywords:** physical development, intellectual development, motor education, pupils.

### Introduction

Lack of sporting activities leads to weight gain, obesity and chronic illnesses, cardiovascular pathologies and diabetes, which harm the state of well-being and jeopardize the quality of life of individuals, which has the effect of affecting the economy's budget and financing allocated to the health sector. The statistics published by WHO member countries conclude that a \$ 1 spend for physical exercise is equivalent to a \$ 3.2 reduction in medical expenses.

In this situation, the public authorities responsible for initiating, planning and conducting sports activities and physical education must undertake to fulfill with greater responsibility the task of initiator promoting the strengthening of the health status through the capacities of the specialists in the field: teachers, teachers, methodologists, kinetotherapists and the implementation of prophylactic alternatives, applied according to the age, gender, level of training, in order to accomplish the tasks specific to the specialists' field of competence.

Physical education is a form of education that valorizes moments through the physical development of the body, the development of intellect, the necessary skills of movement throughout a lifetime. Component of general education, school physical education is conducted according to well-established rules, includes various forms of organization and development, in order to optimize the biological and psychomotoric potential of the individual, in order to improve the quality of life (Epuran, M., 1992).

Discipline Physical Education is the only one of the school curricula that aims to educate students for a better way of life that will have a positive influence on health and which will meet the social needs and ideals generated by them, represented by self-discipline, fair play, mutual help, tolerance, friendship, values that are precious goods and should be put into practice in the shortest possible time. The current situation proves, however, that the principle of postponement prevails. It remains at the stage of the proposal and there are too few actions of the responsible structures in the field of education, health, physical education and sport, which

guarantee for a Romania with a healthy population, with a high level of education compared to the European standards, a country with excellent results in sports that make the nation visible to the world through its values.

Due to the fact that a growing number of specialists recommend practicing exercise by all people, starting with the youngest age, for the benefit of strengthening health and for improving motor, intellectual and behavioral indicators, and because many studies have shown that the implementation modeling programs can provide recommendations that favor the physical education lesson, it is necessary to develop and implement a guide for physical education, sports and health. It must begin at an early stage, that is, for primary school pupils (Balint, G., 2001).

### **Study. The dynamics of health indicators of pupils of low school age according to their level of motor and intellectual training.**

An analogous dynamics is observed in the relation of health indicators with those of physical education of pupils in primary classes (Table.1).

Table 1. Health indicators of pupils of low school age according to their level of physical training

Level of physical training	Number of subjects		Health indicators	
	Number	%	Health Index %	Morbidity on 100 children
High	67	33.3	72.6	56.3
Medium	123	61.2	59.6	60.4
Low	11	5.5	55.1	74.2

As we can see in the table, higher levels of intellectual performance indicators are observed in children with higher learning literacy indicators. Thus, in students with a high level of high training 33.3%, we observe an average morbidity of 57.3%, respectively in the children with 61.2%, 61.2%, the morbidity index 80.7%, and the children of the cycle Primary with low level constitutes 5.5% and morbidity 90.0%.

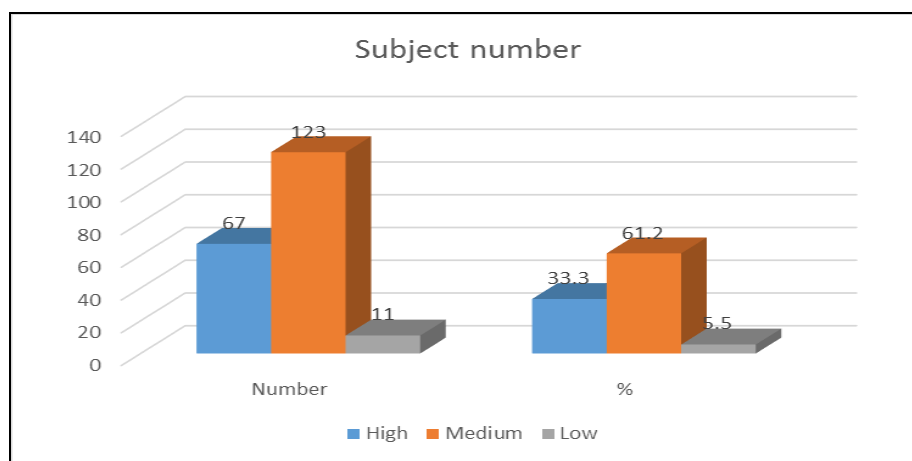


Fig. 1. Level of physical education of pupils in the primary cycle

Figure 1, reflects both physical training and percentage levels (high, medium, low) and the number of subjects included in the research.

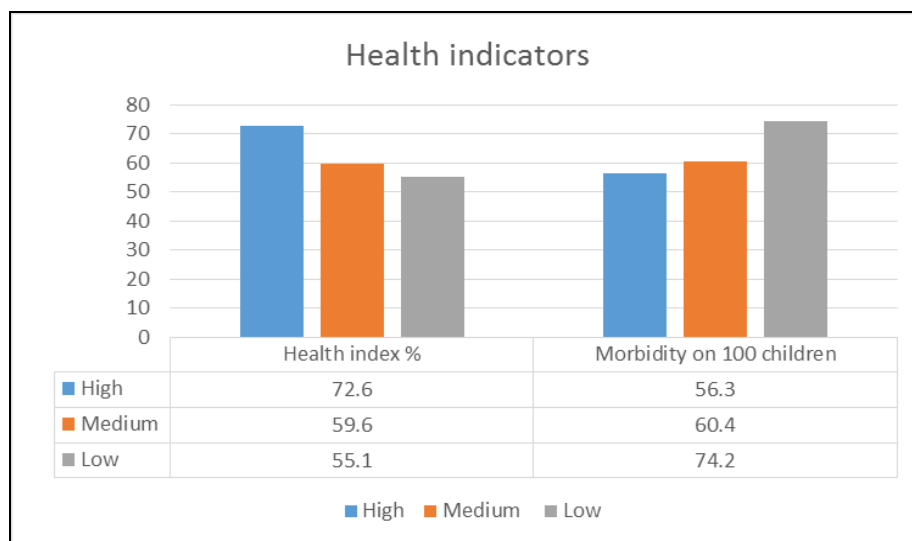


Fig. 2. Health and morbidity index statistics per 100 children

In Figure 2, the percent health and morbidity index is reflected in 100 children. Thus, the percentage of children who did not or were ill during the year accounted for 72.6% of the students corresponding to the level of high physical training, the students who recorded an average level of 59.6% and those with a low level respectively 55.1%.

Morbidity rates were as follows: 56.3% for high, 60.4% for those with medium and 74.2% for those with low levels.

Table 2. Health indicators of pupils in primary school depending on the intellectual level (average of grades per year)

Evaluation level	Note Average	Subject number		Health indicator	
		Number	%	Health Index %	Morbidity in 100 children
High	8.3-10.0	65	32.3	72.6	56.3
Medium	6.3-8.2	120	59.7	59.6	60.4
Low	4.6-6.2	16	8.0	55.1	74.2

In Table 2, we analyzed the correlation between the health and the intellectual index, which was the average of the marks recorded during one year of education. The higher the intellectual level is 32.3%, the higher the health index is 72.6% and the morbidity respectively 56.3%, which demonstrates the traditional pattern of correlation of the health and intellectual components.

Thus, we can mention that the research carried out with the pupil population included in the primary cycle confirmed the traditional correlation pattern of the physical development components with health indices, or the children with a high level of motor training have a higher stability against the adverse factors of the environment, which is manifested by a lower illness. These children also see a higher level of the intellectual performance indicator, which you cumulate with the average level is 92%.



### Dynamics of intellectual indicators of pupils of small school age.

At present, basic theories on the structure of the intellect are considered to be the hierarchical model of C. Spirmen, the models of the intellect (Thurstone L., 1938, Guilford J.P., 1975, Sternberg R.J. 2005).

The intellectual group test (TGI), which was translated and adapted by us to students in Romania, is intended to diagnose the intellectual development of pupils in the third and sixth classes.

Intellectual Group Test (TGI) contains 7 subtests:

- Executing instructions;
- Mathematical problems;
- Filling in sentences;
- Determining the similarity and difference of notions;
- Strings of figures;
- Analogies;
- Symbols.

It is important to note that this group of tests is also cognitive tests (Акимова, М.К, 1993)

Table 3. The average TGI scores in the experimental groups

Tests	1	2	3	4	5	6	7	Total
Control group	4,90	3,57	3,95	18,51	6,07	10,62	15,05	62,67 – low level
Experimental group	6,41	3,37	5,85	21,01	6,65	10,17	20,49	73,95- medium level

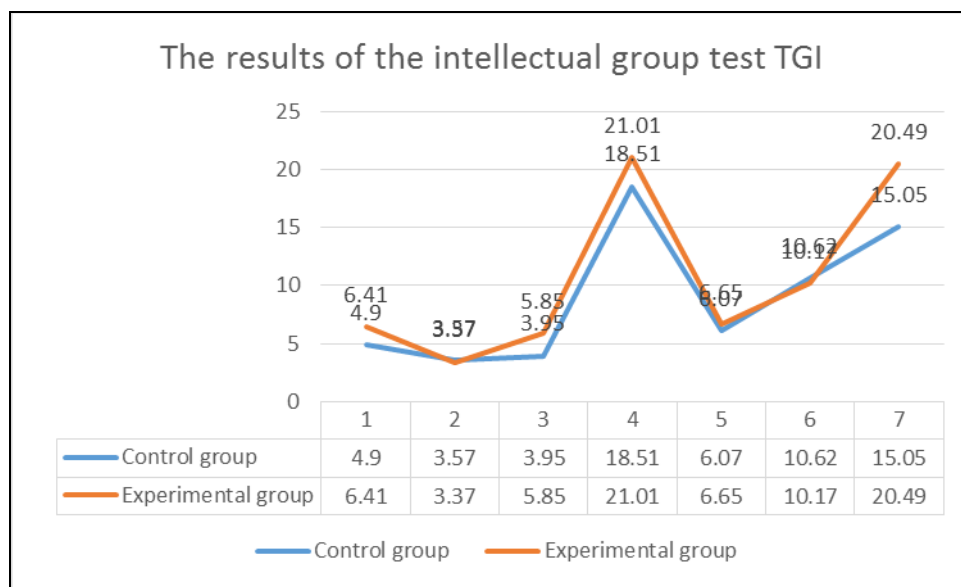


Figure 3. Testing the 2nd, the control group

From the obtained data we can see that the control group in the second test registered more points than the experimental group, which demonstrates that the problems of mathematics in the third class, those in the control group are better solved and this class in the future can be oriented to real profile, and the recorded ball average found 3.57 control group and 3.37 experimental group respectively. Also in the fifth test, the number of balls is quite close although the experimental group recorded an average of 6.65 balls versus those in the control group 6.07. The same is true for the sixth test.

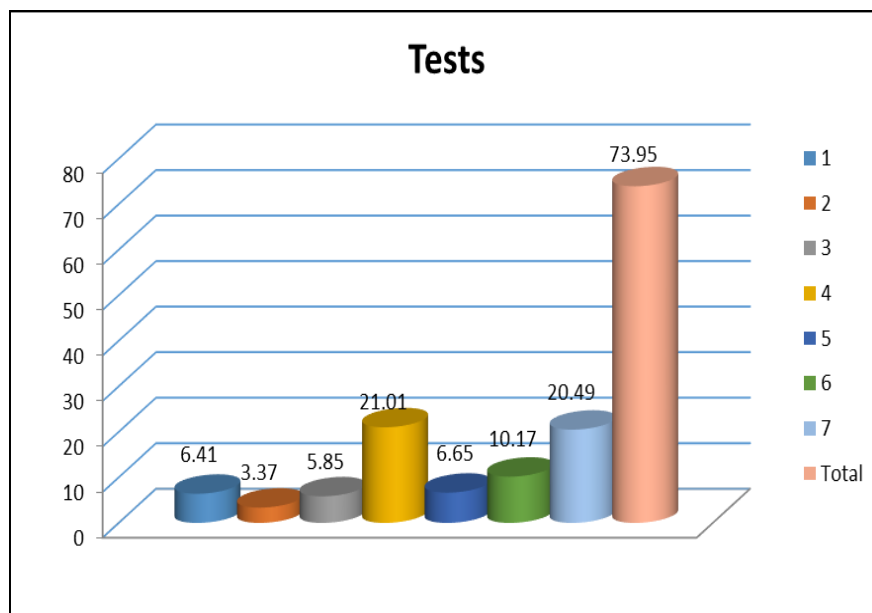


Figure 4. Results of testing the experimental group

Third-grade children in the experimental group have superior environments in tests 1, 3, 4, 5 and 7, indicating that those in the experimental group are willing to be assigned to the human profile in the future because the piloted guide components are focused on those indicators. Figure 5. Testarea grupei experimentale si a grupei de control

### Results

Significant differences between the control and experimental groups are noted in Figure 3. Thus, at an average of 18.51 points recorded by the control group and 21.01 recorded by the experimental group, also at indicator 7, the control group recorded an average of 15.05 points, and the experimental group recorded 20.49 points.

Thus, the control group recorded an average of 62.67 points for all indicators, corresponding to the low intellectual group test level (TGI). The experimental group recorded a general average of 73.95 points, which corresponds to the average intellectual test level (TGI).

### Conclusions

After analyzing the current situation of the school curricula for the physical education discipline, it was highlighted in our study the optimization and the improvement of the degree of assimilation of the theoretical and practical knowledge, the students succeeding in meeting the new requirements of the the physical training required by the framework programs.

Harmonization of the motor and intellectual components of pupils in the primary cycle was directed to the health effect within the study process. Differentiating the study material in the field of physical culture, regarding the harmonization of the intellectual and physical components of the health and the strengthening of the state of health regarding the development of primary school pupils, is open to efficiency and dynamics through the contents always adapted to the new requirements of the framework plans.

The study of pupils in the primary cycle confirmed the traditional correlation pattern of physical development components with health indices, or children with high levels of motor skills have greater stability against the adverse environmental factors, which is manifested by a lower illness. These children also see a higher level of the intellectual performance indicator, which you cumulate with the average level is 92%.

We recommend continuing (at the beginning and / or year-end) evaluation, which aims at simultaneously cultivating self-assessment and assessment capacity at student level and considerably shortens the interval between the evaluation of the results and the improvement of the activity.

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# **SPORT SECTION**

## USING VIRTUAL REALITY IN ATHLETICS TRAINING

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### Abstract

**Background:** Training based on virtual reality has already proven successful in military and aviation. Because it is a visually-kinesthetic learning aid, its utility in sports is certain. The real beauty of sports training based on virtual reality lies in its ability to create real muscle memory through virtual experiences.

Sports profile is the key to developing the self-consciousness the athlete needs to develop emotional intelligence and to understand how behavior and personality influences sport performance.

Establishing the sporting profile builds the self-awareness needed to achieve superior performance. Using it will develop emotional intelligence and help to understand how consistently the best results are achieved as an individual and in relation to others. Sports profiles for athletes' ratings use scientific techniques based on decades of behavioral research and are especially designed for high-performance sports (<http://athleteassessments.com/disc-profiles-sport>).

The face work aims to use a new, alternative method to improve children's performance at the start of athletic training. In this paper we want to demonstrate that applying the training methods appropriate to each type of personality can achieve equally good results regardless of the dominant function.

**Objectives:** The objective of the paper is to demonstrate the effectiveness of the virtual reality method for non-sensory researchers, one single child, aged 11-13 years, in improving athletic performance.

**Purpose:** The aim of the paper is to expose the benefits and the role of virtual training for non - sensors in optimizing athletic performances.

**Methods:** The methods used are two, the first is the Myers - Briggs Type Indicator - MBTY test, and in the second part we use the virtual reality method with the Oculus glasses in the athletic training.

**Conclusions:** The use of personality tests contributes to the efficiency of sports training, especially at the level of training athletes.

In this context, the application of psychomotor tests as modern methods that can significantly influence the quality of the training, clearly leads to the improvement of athletic performance in the level of a single child.

**Keywords:** athletics, Oculus glasses, virtual reality.

### Introduction

"The sphere of the psychomotor domain is very broad, with a rich and varied content, in which the analytical elements intertwine with the synthetic ones" (Albu, C., et al., 2006).

"In the process of forming motor skills, the mental image plays an essential role, being influenced by the motor act, which once improved also leads to its improvement. During its evolution, the representation of movements is subject to series of restructurings and organizations, especially at the level of the rhythm and pace of the action, as well as in the information components that regulate the motor act" (Bota, A., 2002).

Although our advanced physiological and technical knowledge has generated tremendous progress and previously undetectable physical performance, there is a significant "gap in knowledge" that develops into another area that is also essential to delivering results. This is the emotional intelligence of coaches and athletes, which represents the understanding of the role played by personality and behavior in human performance and the ability to analyze and consciously adapt behavior to improve performance.

"Emotional intelligence or mental talent is one of the least understood and explored in performance sports. Athlete ratings were created to help coaches, athletes and sports professionals to develop their "mental talent" to realize their full potential. This awareness is achieved through the sport profile" (Epuran, M., 1999).

This research is based on a personality test called MBTI - the abbreviation for the Myers-Briggs Type Indicator, consisting of 70 questions, which finds within the 4 dimensions (Figure 1) Extroversion-Introversion, Intuition-Feeling, Thought-Affectivity, Judgment-Perception, how people's decision-making is formed in

response to their environment, and how people perceive the world and process information. It is important to say that the test does not judge, but examines the influence factors of a person's decision.

An overwhelming percentage of the great contemporary athletes: Lebron James, Usain Bolt, Serena Williams, Magic Johnson, Joe Montana, Steve Nash, Gilberto Godoy belong to the sensory category (that is, those who have the first, extrovert or extraverted sensation).

"It has been found that, although performance in sport is associated with sensitiveness, there are also many athletes with other dominant functions that excel in sports" (Jung, C., 2004).

### Organization of the Text

Face research aims to use a new, alternative method to improve children's performance at the start of athletic training.

Statistics show that those with ESTP (Sensory-Thinker) and ESFP (Sensitive-Effective) are the most active in sports. Usain Bolt, Serena Williams, Magic Johnson, Joe Montana, Steve Nash, Gilberto Godoy, are just some examples of athletes with these types of personality.

Through this research, we are asleep to demonstrate that applying the training methods appropriate to each type of personality can achieve equally good results, regardless of the dominant function.

Training based on virtual reality has already proven successful in military and aviation. Because it is a visually-kinesthetic learning aid, its utility in sports is certain. The real beauty of sports training based on virtual reality lies in its ability to create real muscle memory through virtual experiences.

How does a virtual reality system work?

HMD (head-mounted display) is a device, a headset with a screen placed in the eyes, divided into two areas with two distinct displays for each eye.

To this device is added two lenses adjusted according to the distance between the eyes, slightly bending the image so that it is perceived as natural. The screen and lenses are placed on this helmet mounted on the head. Depending on the model of the virtual headset, audio headphones can be easily mounted for even deeper virtual immersion

### Results

The purpose of this research is to demonstrate the effectiveness of the virtual reality method for non-sensory researchers, namely children 1, aged 11-13 years, in improving athletic performance.

In this research we proceeded from the following hypothesis: "By acting systematically through the virtual method, we can improve the performance at the level of initiation in athletics, children of 11-13 years of non-sensory type."

The work is based on the premise that not only those with the main sensory function can perform in sports. Subjects: 10 boys in the age group 11-13 years practicing athletics at the initiation level (children 1) at C.S.S. Triumph. We chose this age because then the body image is formed. We applied a number of three control tests: running on a distance of 80 m, 800 m and jumping in length.

The research methods we have used in the first phase required the application of the Myers - Briggs Type Indicator - MBTY test and the virtual reality method with Occulusura glasses.

The Myers-Briggs test, we applied the test at the beginning of the research period, which I interpreted with the help of a psychologist.

Thus, of the 10 subjects, 2 are sensory and 8 non-sensory, according to the table below.

Tabel 1. Type MBTI of the subjects under investigation

Subiecti	Tip MBTI
M.N	ESTP - Senzorial
G.I.	ESFP - Senzorial
A.N.	INTP – Non-senzorial
R.T.	ENFJ – Non-senzorial
P.M.	ENFP – Non-senzorial
C.C.	INFJ – Non-senzorial
B.C.	INTJ – Non-senzorial
A.M	INTP – Non-senzorial

O.P.	ENFP – Non-senzorial
T.N.	ENFJ – Non-senzorial

The next step was to use Oculus virtual reality glasses when specially selected exercises adapted to the particularities of the working method. Using the Social Run and VR Run program, we trained 4 non-sensory subjects. The others trained under normal conditions 3 times a week. Each program shows a circuit on the athletic track, at various levels of difficulty, to mimic reality as accurately as possible.

We have replaced a classic training with VR glasses training as follows:

1. For the 80m sample:
  - running ankle play locally - 2 x 30s;
  - swelling of the calves under the seat on the seat - 2 x 30s;
  - kneeling upside down - 2 x 30s;
  - swinging the calves forward - 2 x 30s;
2. for the length jump sample:
  - vertical jump with half-width - 2 x 30s;
  - step-by-step jump on the spot - 2 x 30s;
  - changing legs by jumping on the spot - 2 x 30s;
  - length without impulse – 6 x.
3. For the 800 m sample:
  - 3 x 3min running in place;

We made a questionnaire to get the views of the subjects in connection with the Oculus virtual reality glasses experience.

Questionnaire:

1. Learning was easier with VR?
2. Have you had dizziness or unpleasant effects after using glasses?
3. Was it an interesting experience?

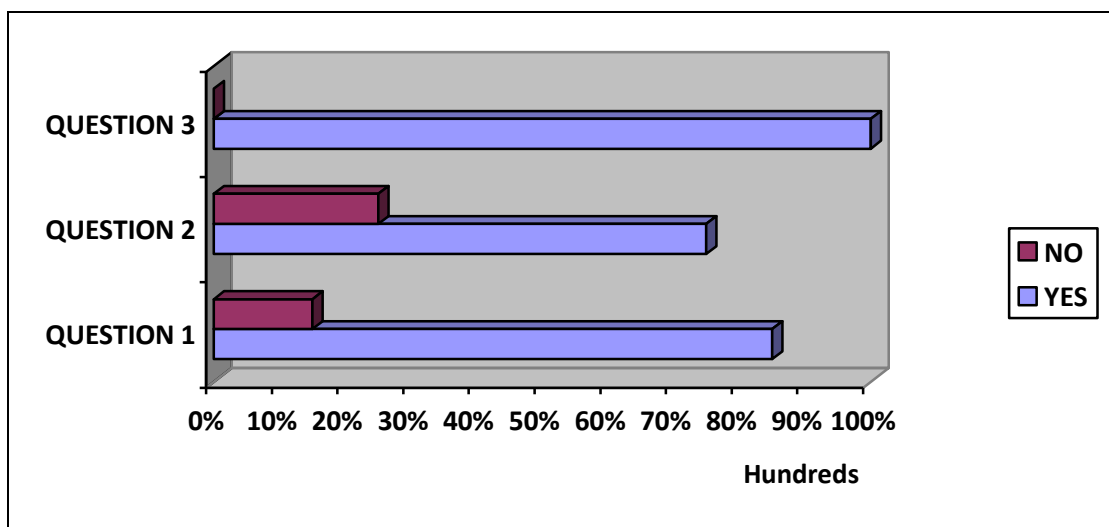


Fig. 1. Investigated subjects answer questions

Tabel 2. The results of subjects investigated at initial testing and final testing

Group	Subjects	Initial testing			Final testing		
		80 m (sec)	800 m (min)	Long jump (m)	80 m (sec)	800 m (min)	Long jump (m)
Senzorial	M.N.	10,89	2.28.79	4,83	10.68	2.27.84	5,06
	G.I.	10,91	2,29,16	4,69	10,74	2,28,34	4,86
Non-Senzorial 1 NS1	A.N.	12,64	2,35,71	4,32	12,52	2,35,22	4,45
	R.T.	12,01	2,41,64	4,11	11,97	2,40,98	4,36
	P.M.	12,47	2,38,30	4,29	12,38	2,37,79	4,35
	C.C.	11,89	2,47,85	3,85	10,54	2,47,22	4,25
Non- Senzorial 2 NS2	B.C.	12,56	2,39,16	4,38	12,10	2,38,05	4,75
	A.M.	12,66	2,42,66	4,25	12,15	2,41,71	4,73
	O.P.	11,79	2,40,31	4,21	11,19	2,39,33	4,61
	T.N.	12,10	2,36,27	4,14	11,56	2,35,38	4,58

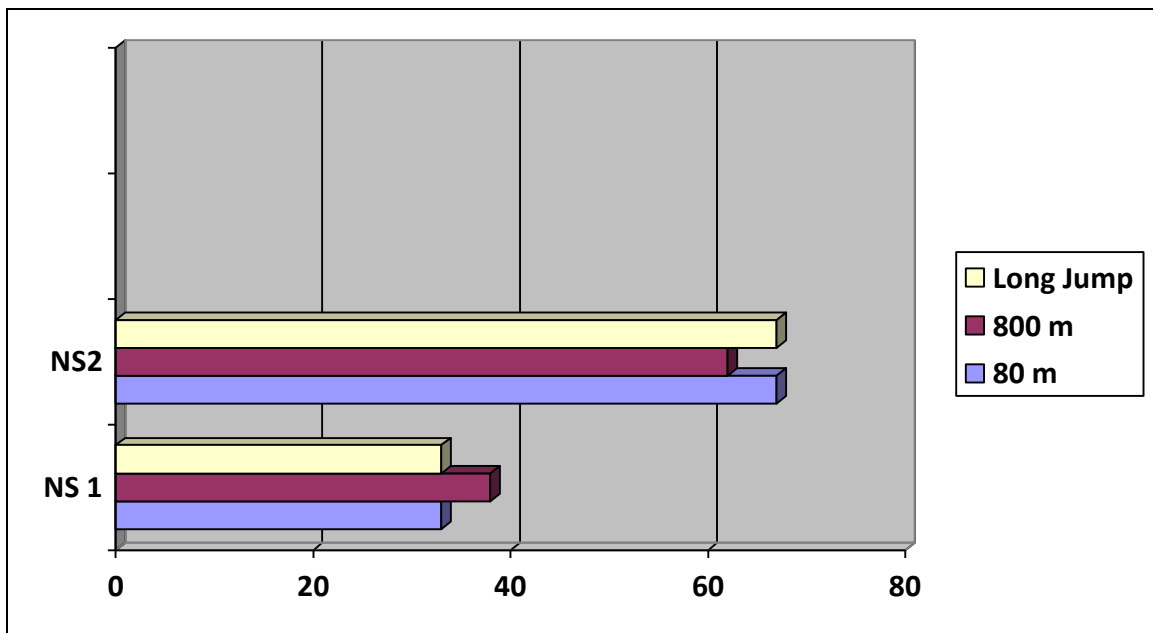


Fig. 2 The results obtained in the initial testing and final testing of the three samples

As a result of the results obtained at the 80m sample, it results that NS2 subjects had an average of 40 tenths of a second less than subjects who were not subjected to the virtual NS1 experiment, respectively a 67% progress compared to 33%.



Based on the results obtained at the 800m sample, it results that NS2 subjects had an average of 33-tenths of a second less than subjects who were not subjected to the NS1 virtual experiment, respectively a 62% progress compared to 38%.

Following the results obtained from the sample length, that test subjects undergoing NS2 had an average of 21cm longer than subjects who did not receive virtual experiment NS1 or a progress rate of 67% to 33%.

## Conclusions

The use of personality tests contributes to the efficiency of sports training, especially at the level of training athletes.

In this context, the application of psychomotor tests as modern methods that can significantly influence the quality of the training, clearly leads to the improvement of athletic performance in the level 1 children.

Following the interpretation of the results, it has been shown that the virtual reality training method is effective, demonstrated by those who have not achieved sensitivity to the MBTI test and achieved comparable results to the sensory.

The approach to athletic training of modern methods in our case by applying the virtual reality training method has led to a significant increase in the performance of the athletes in research at all three control samples.

The body image of subjects in research is enhanced by virtual reality training due to neuro-motor stimulation.

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## FASTER, HIGHER, FARTHER FOR AS LONG AS POSSIBLE?!

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### Abstract

Athletics is the sport that cannot be influenced by subjectivity, because the highly-advanced modern technology allows the measurement of performance with great precision. World records are increasingly rare. If over 20 years were needed to eliminate a few seconds, nowadays, performance improvement is limited to tenths or even thousands of a second, because the human body has its own biological and biomechanical laws.

One of the most common journalistic expressions is that records are set to be broken. But how far can we push the physical limits of the human being? This paper is a journey back in time to highlight the most impressive world performances in the history of athletics.

**Keywords:** track and field, world records, physical limits, sports performance

### Introduction

“The issue addressed has arisen with the emergence of a real cult of world records. Always faster, higher, farther is the Olympics bet with the limits of the human body. Being at the origin of sports competitions, the Olympic spirit initially aimed to measure the athletes of a generation, without comparing their results with the performances of their predecessors. If one of them invented a technical artifice (see the backward-twisting high jump), the others were able to imitate it quickly” (Aldhous P., 2016).

“Athletics is included in the sports category where performance can be accurately measured; the measuring tape and the timer, which proved to be sufficient in the beginning, were replaced by electronic devices. New world records are increasingly rare, and when they occur, growth margins are relatively small, which is evidenced by the 23 performances lasting for over 15 years. This tendency equally concerns men and women, the sprint, but also the endurance events, disciplines that engage both the upper and the lower body. In addition, some performances established in the 1980s, associated with massive doping, have not changed since then” (Nourygat V., Jacquet, K., 2018).

“Nowadays, the race for records in athletics considerably loses speed. According to the Institute of Biomedical and Epidemiological Research in Sport (IRMES), in Paris, which analysed more than 3,000 world performances since the first edition of the modern Olympic Games, world records peaked in 1992” (Silk, H., 2012).

“Human limits have already been calculated. According to the mathematical model developed by researchers, half of the world records will disappear in 2060, despite the athletes’ commitment, the carefully scheduled workouts and the quality medical supervision, because the physiological limits / thresholds are not far from being reached” (Shannon, R., 2010).

“According to specialists (Jean-François Toussaint, Director of IRMES), every year a discipline ceases to progress. Today, records continue to be broken particularly in women’s sprint events with special technical features (hurdles), marathon and pole vault” (Nothias, J. L., 2007).

“Many disciplines go through periods of stagnation, even regression, a phenomenon that more often affects the female than male events” (Vazel, J. P., 2016).

### Records

#### Women’s short sprint

The time achieved by Florence Griffith-Joyner in 1988, over the distance of 100 m, is inhuman/superhuman. Even though “Flo Jo” was never tested positive, her physique, specifically transformed by anabolic steroids, as well as her premature death at only 38 years old, amplified the doubt in the hearts of athletics lovers.

For more than 15 years, the best women sprinters in the world stagnated, her time (10.49) being apparently inaccessible over this distance. The next two performances in the history of the event only increased the suspicion: Marion Jones (10.65) spent 6 month in prison for doping, and Carmelita Jeter ran the 2nd fastest time (10.64) late, (too) long after the end of the competitive season.

### **Women's 800 m**

The 1980s and early 1990s were marked by spectacular progress in some events, a phenomenon that specialists associated with the State doping. Their suspicions were mainly directed towards the former German Democratic Republic. Thus, the country with only 17 million inhabitants won, at the Seoul Olympics (1988), 37 gold medals, a track record ranking it on an incredible 2nd place, behind the Soviets, but before the Americans.

Some colossal performances amazed the world of athletics at that time; among them, the time of Jarmila Kratochvilova over the distance of 800 m, which also remains the world's oldest record (1:53.28). The systematic doping of athletes served the interests of the communist regime, in its competition with the German Federal Republic. The administration of hormonal cocktails to (often minor) athletes caused them serious physical and psychological disturbances and had horrible effects on their (unborn) children.

### **Long-distance races**

Among the outstanding performances achieved in the early 1990s, we mention those of the Chinese female runners, who dominated the long- and middle-distance events at the 1993 World Championships. The Chinese coach Ma Junren managed to place his athletes on the highest steps of the podium in the races over the distances of 1,500 m (1st place), 3,000 m (1st, 2nd and 3rd places) and 10,000 m (1st and 2 places). It was a unique situation, especially for the 3,000 m, where 5 female athletes broke the world record the same day.

To achieve that, the girls had been subjected to unprecedented workloads, which were possible only through total control over the athletes. In the winter of 1992, the group trained by Ma Junren had covered the equivalent of 114 marathons (!), making the doping spectrum float over these results.

### **Men's 100 m**

Mathematical equations have decreed that man will never run under 9.66 seconds over the distance of 100 m. However, the theory was contradicted by Usain Bolt, who managed, in 2009, an exceptional 9.58. To note that the Jamaican is outside the somatic standards for this event, with his 196 cm, but which allow him an impressive stride and consequently the smallest number of steps (41.5) in a race.

Scientists believe that Bolt could have run even better. Thus, maintaining the speed in that race (37.5 km/h), but with better latency at the start (0.1, not 0.133 seconds), would have produced a time of 9.55 seconds. Mathematician John Barrow (Cambridge University) estimated that, under wind conditions at the maximum permissible limit (2 m/s), he would have gained 5 hundredths (9.50), and if the race had taken place at an altitude of 1,000 meters, he could have finished it in 9.47 seconds!

### **Throws**

For men, world records in running events are generally more recent than for women (Usain Bolt, 2009; van Niekirk, 2016). On the contrary, in throwing events, the most recent one dates back to 1996. The East German discus thrower Jürgen Schult (74.08 m in June 1986) and the Soviet hammer thrower Yuriy Sedykh (86.74 m in August 1986) are the world's oldest record holders.

But in the hammer throw event, the last three to throw over 84 m, namely the Belarusians Vadim Devyatovski (84.90 m in 2005) and Ivan Tikhon (84.51 m in 2008), as well as the Hungarian Adrian Annus (84.19 m in 2003), were suspended for doping at a certain time in their careers.

In 1987, the personal record of Gabriele Reinsch was 64.12 m, an honourable one, but insufficient in the world context. The East German thrower aged 25 years started the next season with an amazing 71.64 m in the first competition, at the beginning of May. In about two months (July), she adds 5 m, reaching 76.80 m from the first attempt in an international match between East Germany and Italy, held in Neubrandenburg, an amazing world record that has survived until today.

### Long jump

In the male long jump, Mike Powell's performance (8.95 m) has remained unbreakable since 1991. This incredible record surpassed the equally surprising record of his compatriot Bob Beamon, whose best performance dated from ... 1968. Beamon's jump represented a 7% improvement in his usual performance. Extrapolating to Bolt, he would have been supposed to run the hundred in 8.98!

Moreover, the record was broken in Tokyo by two athletes, during the same period of time: Mike Powell and Carl Lewis, but the latter was also accused of doping.

### Pole vault

The performance recorded by Serghei Bubka (6.14 m in 1994) lasted for 20 years. It was due to his technical skills, but also to the financial interest that made the Ukrainian raise the bar with only 1 cm at each competition (knowing that each record was generously rewarded). His results brought again into focus the problems of Soviet sport in the 1980s, but the performance of the Frenchman Renaud Lavillenie (6.16 m in 2014) left them behind.

### Conclusions

Olympic records depend on several parameters that we can or cannot control. Obviously, it is impossible to predict progress related to doping, technology or environmental factors. However, we must consider that, despite the tremendous progress of the sports industry and economic means involved for more than 50 years, the gap between records, in terms of time, becomes increasingly smaller, and a physiological limit is very likely to occur.

It should be noted that man has always wanted to go farther, higher and to be stronger, but the limits of the body do not necessarily correspond to the expected ones. The will to excel is omnipresent, dominates the human species, and it is difficult to imagine that one day it will disappear.

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## THE OPINION OF SPECIALISTS AS CONCERNS THE UTILITY OF THE "DATA VOLLEY" SOFTWARE IN PERFORMANCE VOLLEYBALL

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### Abstract

The problem of optimizing the training process of volleyball players in Romania, at every level is a quite current one and absolutely necessary in the theory and practice of this sport.

These last years, in the process of sports training, there are all the more used a series of technical and electronically machines which allow the immediate obtaining of information related to the game actions of each sportsman, of one's own team, as well as of the other's team. Such a software is "Data Volley", used in the last years in our championship also. A number of technical and electronic machines

In order to highlight the most pressing issues in the male volleyball nationally, I performed a quiz-like inquiry, asking for the opinion of the specialists in the field, with regard to identifying ways to optimize the training level of the sportsmen. In this context, I asked the specialists to express their opinion in the matter of the individualized training of senior volleyball players, and of the interest of each and everyone of them as compared to the utility of the "Data Volley" software.

Thus, analysing the results of the specialists opinion in the matter of the training of senior volleyball players in Romania, there was identified a series of problems, whose solving would influence positively the increase of the quality level in their training.

**Keywords:** volleyball, performance, analysis, software

### Introduction

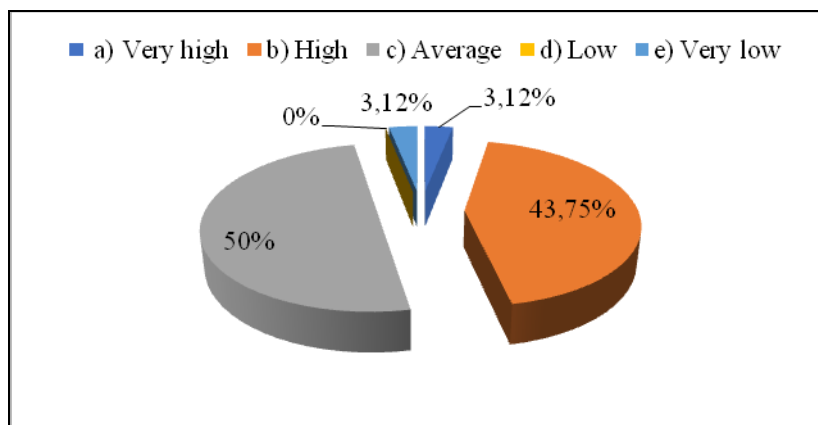
The problem of optimizing the training process of volleyball players at all levels is quite current and absolutely necessary both in theory and in the practice of this sport. Experts' opinions Bompa T. (2001), Păcuraru A. (2000), Furmanov A.G. (2007), on the utility of computer programs in performance volleyball, are mentioned by authors Cojocaru A., Ioniță M. (2008), in their paper. It is no coincidence that this game has a high level of popularity worldwide, including in Romania.

However, both Ciorbă C. (2016) and other authors such as Păcuraru A. (2002), Bril M.S. (2001), Furmanov A.G. (2007), signals that the poor results achieved in Europe and around the world by top volleyball teams show that the level of training is low.

In order to highlight the existing urgent problems in the male volleyball nationally, we initiated a quiz-like enquiry, asking for the opinion of the specialists in the field of volleyball, as concerns the finding of some proper ways to increase the sportive training level of the players.

In this context, we asked the specialists to express their opinion regarding the issue of the individual training of senior volleyball players, depending on their position in the game. Actually, this thing makes up the subject matter of our research. In the enquiry, there were involved 15 coaches of the sports club participating in the A1 League - National Championship of Volleyball in Romania, who were to express their opinions on certain topics, which we were particularly interested in. The enquiry performed by us contains 16 questions, which according to us, reflect the entire range of sportive training of the senior volleyball players in Romania. The coaches were suggested even a series of answer choices that they were to tick in the event that they agreed with one of them or had the possibility of opting for a separate opinion, which they considered as correct. All the quizzes were processed statistically and are shown in the figures below.

Thus, the first question addressed to the specialists had to do with assessing the development level of the volleyball game nationally (fig.1.).

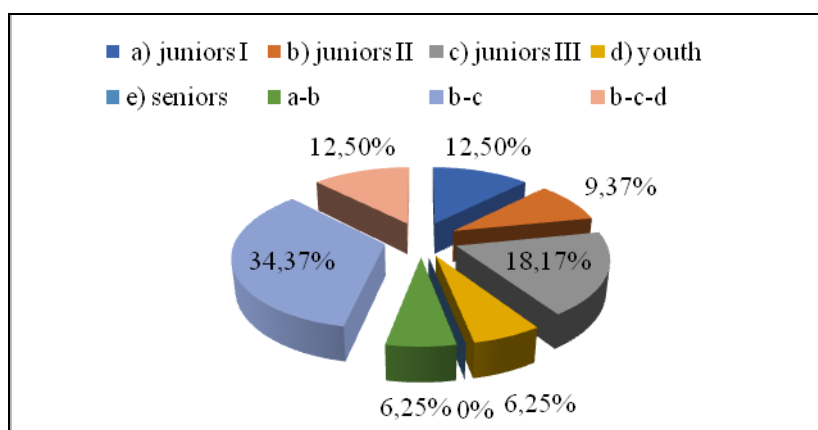


**Fig.1.** The development level of the volleyball game currently in Romania

If we observe figure 1, we notice that most of the specialists assess the development level of the volleyball game for seniors in Romania as average. For this choice, there opted half of those surveyed (50%). However, a great deal of the coaches (43.75%) think that the training level of volleyball players currently in Romania is very high and only 3.12%, meaning just one of the coaches, thinks it is very high, and also one other thinks it is very low.

Hence, the recorded results express the fact that in the training process of volleyball senior players in Romania there is a series of problems that has to do with their training process, and the poor results recorded in the last years confirm this theory.

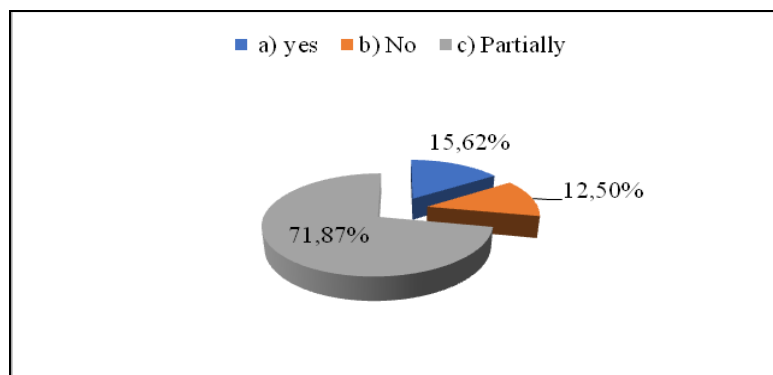
Furthermore, we were interested in the specialists' opinion concerning the ages that require an increased attention in the training process of the volleyball game (fig.2). Here, the opinions of those interviewed vary quite a lot, and most of them (18.17%) claim that an increased attention in the training of volleyball players should be given to the juniors III - players, while the rest had other opinions, such as: juniors I – 12.50%, juniors II – 9.37%, youth – 6.25%, and none of those questioned mentioned the importance of showing special attention to the training of senior players.



**Fig.2.** Ages requiring increased attention in the training process of the volleyball game in Romania

This thing actually confirms the situation created at the moment, namely that the training process of senior volleyball players is not given increased attention, mentioning that this is to be done by coaches for the players of younger ages, as mentioned previously.

The next question starts from the specialists' opinions concerning the assessment of the training level of senior volleyball players in Romania as related to international standards (fig.3). Although in one of the questions suggested to the coaches, they mentioned that the training level of volleyball players in Romania is quite high, in the given case 71.87% consider that their level corresponds only partially to the international standards. Only 15.62% opted for the fact that at the moment, the training level of senior volleyball players in Romania corresponds to international standards; whereas 12.50% of the overall number of experts opted for the fact that this level does not correspond entirely to international standards.



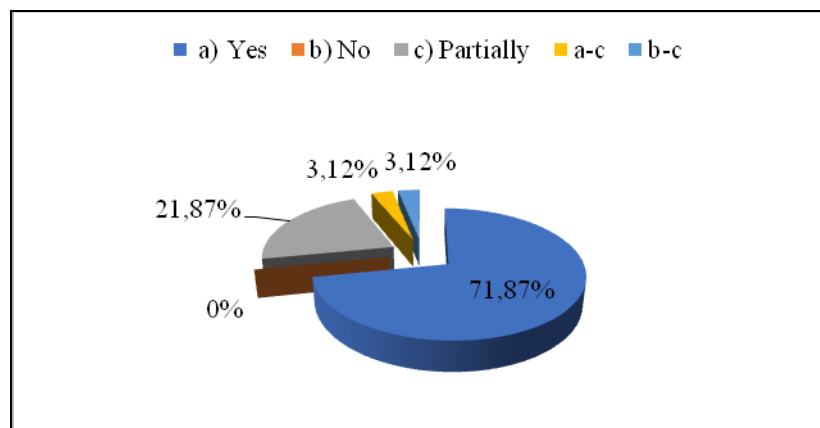
**Fig.3.** Assessing the sportive training level of senior volleyball players in Romania as related to international standards

Therefore, the coaches are in full accordance when it is about comparing the sportive training level of senior volleyball players in Romania as compared to European standards, the latter being obviously under their level at the majority of parameters studied by us and other researchers in the field.

Another question addressed to the experts in the matter was that concerning the application of individualized training in the sportive training of senior volleyball players (fig.4).

By analysing the coaches' answers to this question, it was revealed the fact that around 71.87% of the total number of coaches use the individualized form of training for senior volleyball players in practice. Around 21.87% apply only partially such a way of training of the senior volleyball players and none of those interviewed opted for the answer choice that they do not use such an approach of sportive training.

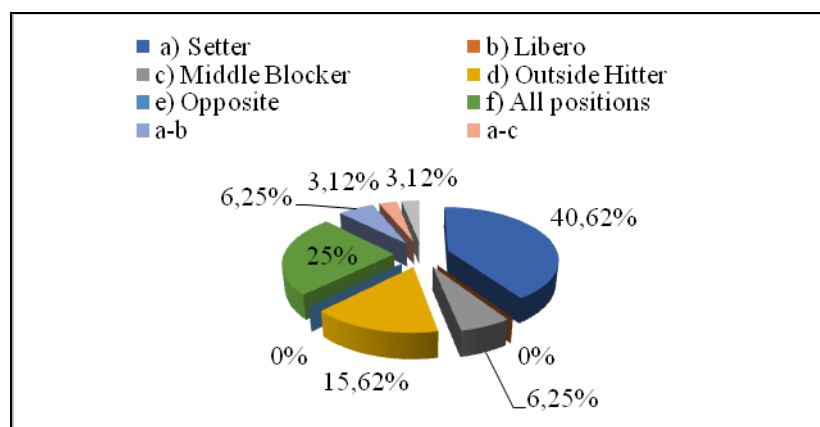
As a result, the coaches know very well the advantage of such a way of training the senior volleyball players and even mention the priorities of approaching such a training method.



**Fig.4.** Applying the individualized training in the sportive training of senior volleyball players depending on the game position

In approximately the same context, the question was addressed to the experts in volleyball, who had to assess which of the game positions of senior volleyball players requires a more consistent individualized training (fig.5). According to the data in the figure shown below, we notice that the coaches had different opinions about the individualized training, some thought that certain game positions require additional attention, while a great deal of the coaches for this sport stated that all the game positions require an individualized training, which would lead to an increase of the players' training level.

Thus, 40.62% of the coaches think that the players on the position of Setter need such a training, 15.62% - the Outside Hitter position, 6.25% - the Middle Blocker position, 25% of the coaches think that all the game positions need such an individualized training, whereas the rest of the coaches think that only some game positions require individualized training.

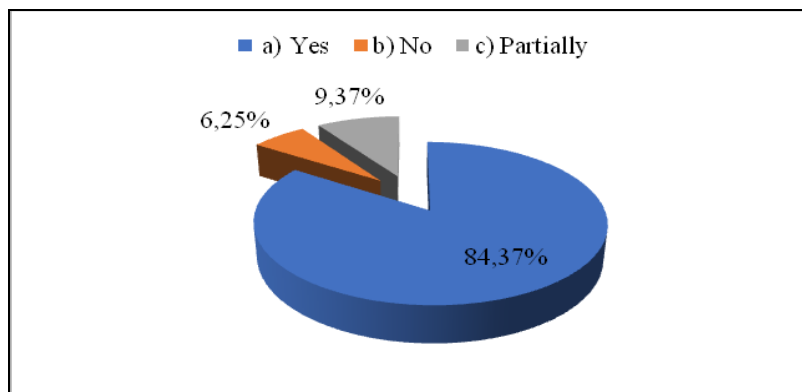


**Fig.5.** Game positions requiring an individualized training of senior volleyball players

The conclusion for the results of the specialists' answers to this question would be that the coaches treat differently the given problem and do not have a joint vision on the topic. This thing is not mentioned even in the specialty literature, where it would be clearly stipulated the methodology of training senior volleyball players by applying the method of the individualized training, depending on the game positions.

The next question addressed to the volleyball coaches was related to the players on the Middle Hitter positions and it sounded as such: 'Do you think that the individualized training of the Middle Hitter in the senior volleyball game would have a positive impact in the evolution of the entire team?' (fig.6). According to the data in figure 6, it is easily noticed that most of those questioned (84.37%) think that the individualized training of the player on the Middle Hitter position would have a positive impact on the evolution of the entire team, 9.37% think that it would partially help and only two coaches, meaning 6.25% of them, think that such a training would not have a great impact on the evolution of the entire team.



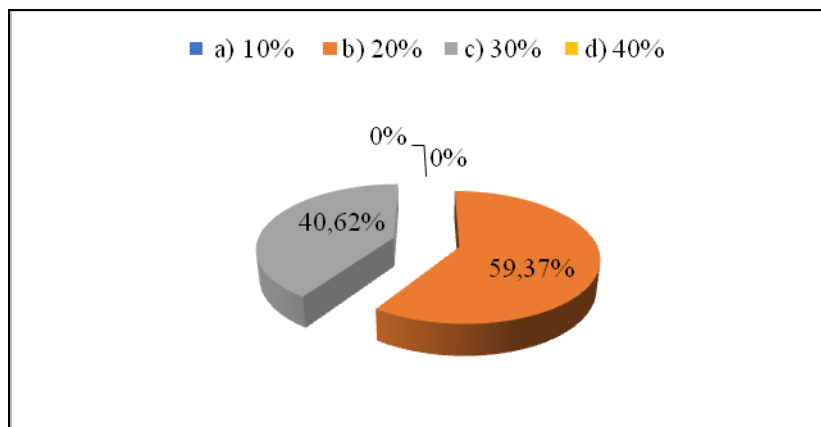


**Fig.6.** The importance of the individualized training of volleyball players on Middle Blocker position

However, according to the opinion of most specialists in volleyball, the individualized training on game positions, including that of the Middle Blocker, is an advanced methodology which can give rather good results in the training of volleyball players, in our case at the level of seniors.

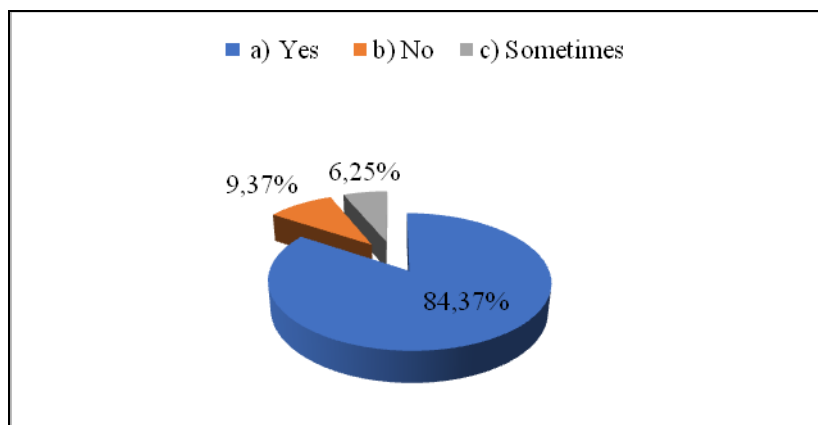
In fact, the next question comes to clarify one of the problems that interested us in particular, here being about the weight of the given time within a sportive training, as concerns the individualized training on game positions (fig.7).

If we examine the results in figure 7, it is clearly obvious that the coaches think the time allotted to training on separate game positions would be ranging from 20 to 30 minutes maximum of a training session with a duration of two hours, the rest of the time left being dedicated to working with the entire team. Here there is also an explanation from the coaches who think that volleyball as a team game requires to a great extent the training of the entire team, where players need to coordinate all of the game actions and follow precisely the indications of the coach.



**Fig.7.** Time weight within a sportive training, concerning the individualized training on game positions

Another question addressed to specialists was one very important for our research, where coaches were to find out whether or not they use the statistical analysis of game actions within official competitions (fig. 8).

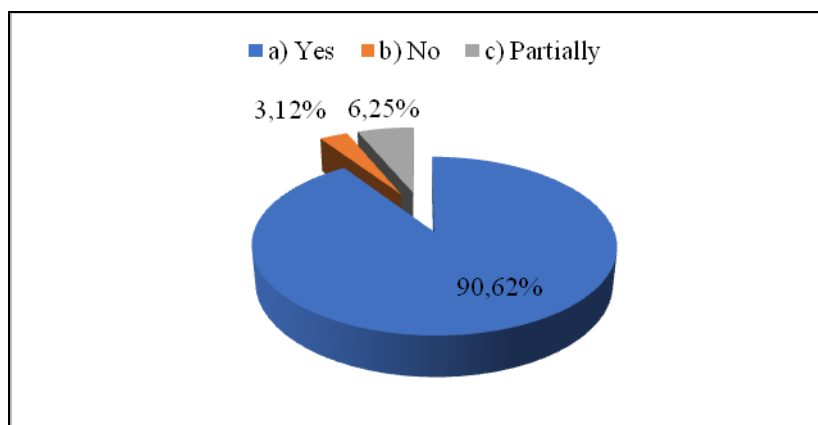


**Fig. 8.** Applying the statistical analysis of game actions within official competitions

From the analysis of the recorded results, it turns out that the majority of coaches (84.37%) practice this thing and use the statistical processing of game actions of the teams within official competitions. Nearly 10% do not use the statistics of game actions, whereas 6.25% use it only sometimes.

As we can notice, the majority of coaches working at the senior volleyball teams in Romania use the statistical analysis of game actions, which shows us that the coaches are very preoccupied with improving the sportive training and at the same time with increasing the volleyball standard at the senior level.

The next question was addressed with the purpose of finding out whether the coaches have knowledge about “Data Volley”, the statistical analysis of game actions in the volleyball (fig. 9).



**Fig.9.** The knowledge of coaches about “Data Volley”, the statistical analysis software of game actions in volleyball

It was proven that most of them know this kind of methodology of recording and processing statistics data for the game actions of volleyball players (90.6%). 3.12% mentioned that they do not know and do not use this kind of methodology, whereas 6.25% just vaguely know the methodology and apply it only occasionally and partially.

Therefore, analysing the results of the specialists’ opinion in the field of performance volleyball in Romania, it was noted that the coaches of this sport, especially the coaches working with senior players, apply different techniques and modern methodologies in the theory and practice of sportive training in the volleyball game.

Talking about the application of “Data Volley”, the statistical analysis software of game actions in the training process and within sportive competitions, most coaches claim that it would be a good thing for

improving the quality of the game, but however they do not use it, mentioning several causes for this: the high costs of such software; the lack of specialists able to work with this programme; the lack of information on this software, and more.

After the survey performed among experts in the field of male volleyball, we are to introduce the experimental methodology mentioned earlier, and the results obtained will give us an idea on its effectiveness in the training of senior volleyball players.

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## APPLICATION OF SOCIOMETRIC TESTING AND EVALUATION OF NATURAL SITUATION AS A FACTOR TO IMPROVE MEASURING TRAINING

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### Abstract

In order to improve the training process in the swimming sport, a survey was conducted in which 30 athletes (12-14 years old, boys and girls) were divided into 2 equal groups according to an official scientific sociometric test that they were given to complete, as well as similar physical fitness tests. Based on the information gathered from these two tests, the following groups were formed:

- 1) The experimental group, in which the work was carried out with homogeneous segments and
- 2) The control group in which the work was carried out with heterogeneous segments.

The control team followed the traditional way of training, where the main disadvantage was that the coach worked at the same time with all athletes, regardless of social preference and physical condition, with the result that the stimuli accepted by athletes did not bring the expected performance.

However, this is not the case with the experimental group, in which its members clearly had better personal relationships and about the same physical condition. As a consequence, the stimuli that they received daily in training were as effective for everyone. At the same time, the same tests were applied to the members of the experimental group where, according to these results, 3 subcategories were obtained, aiming at better training and best results.

At the end of the second year, our research showed that the experimental group had clearly better performances than the control group, which at the beginning of the first year of the survey had much better results. So I strongly recommend grouping as this is more effective and interesting.

**Keywords:** sociometric test, fitness, performance, groups, measurements

### Introduction

The content of this work is directed towards the study and experimentation of the modern issue of improving the training process, finding new forms of organizing training and learning activity, which should be as effective as possible and consistent with modern requirements.

For this purpose, a sociometric test was used to help us gather information about the personal relationships of our team members so that we can divide our athletes into groups in which members' relationships run smoothly.

The sociometric test can be used by both educators and coaches to study social interactions within a group, which may be either a school class, a sports team or a working group, etc.

It enables us to collect information directly from participants in the group, who are asked to complete a sociometric questionnaire. This information comes to complement those that come from our observation.

From this questionnaire we can extract information regarding the choice / preference of the rejection or indifference expressed by a member of the group towards the other members.

Once the collection of information has been completed, we can identify children that are more or less popular.

We have the ability to make judgments about the overall climate of the group inspirational and founder of the sociometric test, the Hungarian psychiatrist / researcher J.L Moreno. "Considered by many theorists to be a specific form of the psychosocial investigation, sociometric analysis was imposed with the advent of JL Moreno's work" We will survive "through which he manifests his intention to find a way of probing interpersonal relationships within groups small, especially those of preferential nature" (Schratz M., 1997).

Five (5) key steps for applying the test:

1. Choosing a sociometric test.
2. Instructions-conducting the test.
3. Formation of a sociometric table.

4. Interpretation of a sociometric table.

5. Pedagogical exploitation.

Apart from the sociometric test, which would give us useful information on team separation, we also used an athlete's physical fitness test to ensure that our teams are as uniform as possible.

In this physical fitness test that the athletes were called to pass, we chose 4 exercises that would give us the appropriate information about the athletic level athletes at that time.

*The 4 exercises are as follows:*

1. Exercise of speed. (Speed is the most important factor in the performance of most sporting activities. This velocity is the maximum power, strength, and functionality of the neuromuscular system to achieve the highest responses and speeds of movement under certain conditions, says Grosser (1994), quoted by Solomon (1999). It is the kinetic ability the person responding quickly to a stimulus with the greatest possible motor velocity with or without external reactions).

2. Exercise flexibility of the trunk. (Elasticity measurement of the waist.) Flexibility is a necessary component for the motion range of a joint, the main technique used was stretching.

3. Muscular strength test (bends). (This test records the general strength and strength of the athlete's upper torso, where the sport of swimming is a particularly important factor of success.) Muscular endurance is the ability of a muscle to generate maximum recurring contractions or to exert continuous force against a fixed object Essentially, muscle strength determines how much a muscle can work in time.

4. Muscular endurance test (abdominal). (Strong abdomens are one of the most important factors for a successful and safe participation of athletes in almost all sports. We measure how many abs do in one minute the athlete).

The sociometric questionnaire used to form the groups was as follows:

Full name.....

Who your teammates would like to work with in the same team

1 .....  
2 .....  
3 .....

Who your teammates would not want to work with in the same team

1 .....  
2 .....  
3 .....

In a simple form, we ask the children to write down their preferences (up to 3) for cooperation. We tell our athletes why we need this information, and assure them that we will never announce what have responded. Children are also asked to not discuss with each other what they asked for in the questionnaire.

The research activity took place at the National Swimming Pool of Thessaloniki, during the years 2017-2018, athletes and gymnasts belonging to the same team of 12-14 years old took part in the survey. Our team consists of 30 people who were invited to participate in a physical fitness test designed to help us split our athletes into two teams. The experimental group and the control group. The best-rated children in this test followed the control team, which worked in the traditional way throughout the research. The members of this group may not have had the best personal relationships, but this was what was required for the experimental team. The remaining 15 people completed the experimental group whose members were required by a sociometric test given to them to choose with which individuals they would like to be in the same group so that the experimental group could be divided into 3 subgroups.

The aim of this research was to find out whether good personal relationships between athletes as well as effective communication between them are enough to increase their performance and lead to success.

The control group was homogeneous in the physical condition of the athletes, and the experimental was homogeneous both in the physical training of the children and in the personal relationships between them.

The fitness test and athletes' performance are listed in the following table:

Table no. 1

A/A	Full Name	Speed 400μ	Flexibility on the Bore cm	Push ups 60 sec	ABS 60 sec
1	D.T	1:14:12	12	36	46
2	O.H	1:13:34	11	36	48
3	B.D	1:17:80	6	27	40
4	A.O	1:18:67	7	24	37
5	X.B	1:25:45	7	25	26
6	O.I	1:27:23	5	23	24
7	I.C	1:13:89	11	38	50
8	Z.F	1:21:65	6	29	30
9	D.P	1:24:45	8	28	38
10	T.L	1:15:10	10	35	41
11	N.L	1:19:34	7	28	35
12	D.C	1:26:10	6	24	31
13	M.C	1:22:39	8	20	29
14	B.C	1:14:28	12	37	45
15	E.L	1:15:05	10	39	48
16	M.T	1:12:26	13	42	55
17	B.F	1:19:89	9	30	42
18	N.M	1:14:78	11	37	49
19	A.E	1:12:78	14	48	49
20	C.P	1:17:34	9	26	31
21	C.B	1:13:67	10	39	46
22	P.I	1:12:69	10	49	51
23	N.G	1:11:03	11	51	53
24	E.B	1:13:89	11	40	47
25	T.P	1:27:23	6	21	30
26	E.C	1:15:67	9	31	38
27	M.D	1:17:80	9	29	40
28	E.G	1:14:60	11	36	41
29	S.T	1:21:56	7	27	37
30	M.P	1:23:18	9	25	33

According to the prices shown in the above table, we divided our athletes into two groups.

Table no. 2

TEAMS		
	EXPERIMENTAL GROUP	CONTROL TEAM
1	B.D	O.H
2	A.O	I.C
3	N.L	T.L
4	B.F	B.C
5	C.P	E.L
6	M.D	M.T
7	X.B	N.M
8	O.I	A.E
9	Z.F	C.B
10	D.P	P.I
11	D.C	N.G
12	M.C	E.B
13	T.P	E.C
14	S.T	E.G
15	M.P	D.T

Formation of a sociometric table of the experimental group (up to 3 positive and 3 negative choices)

Table no. 3

	B.D	A.O	N.L	B.F	C.P	M.D	X.B	O.I	Z.F	D.P	D.C	M.C	T.P	S.T	M.P
B.D			+			---	+		--					--	+
A.O	---				+			+		---		---		+	
N.L	+	---				--	+			---			+		
B.F				--		+		---	+	+				---	---
C.P		+	---					+			+		---		--
M.D	---			+					+	+	---			---	
X.B	+		+	--	---					+		---			+
O.I	--	+			+							---		+	---
Z.F	--			+	---	+					---	+			
D.P				+		+	---		+				---		---
D.C		+						+		---			---	+	---
M.C				+		+	---			+	---		---		
T.P	+		+			--				---	---	+		--	+
S.T	--	+				---		+	---		+				
M.P	+		+		---		+				---		---		

According to Table 3, we created 3 teams of (5) five athletes so we can train them as divided as possible according to the best personal relationships they can have with each other.

The 3 groups were divided as follows:

Table no. 4		
<i>1<sup>st</sup> TEAM</i>	<i>2<sup>nd</sup> TEAM</i>	<i>3<sup>rd</sup> TEAM</i>
B.D	A.O	B.F
N.L	C.P	Z.F
X.B	O.I	M.D
M.P	S.T	M.C
T.P	D.C	D.P

After the above two tests that were carried out to all athletes, the above tables were produced, according to them, we have the composition of two teams. The experimental part and the control section.

In the experimental group, which was then divided into 3 groups, there are friendships between members, that is, an equal relationship, from which the members that make up the group are satisfied. There is reciprocity, emotional interaction, interest, fun and security.

"Through friendly relationships, the individual is socialized, develops social skills and personal developmental features such as self-awareness and self-esteem. Therefore, it is understood that the effects of friendship in human life are varied and mainly beneficial," says Berndt T. J. (2002). We wanted to take advantage of the positive climate between our members during the training session, we wanted to avoid jealousy, conflict, sovereignty and bad competition.

In the control group, things were different as long as there were no such friendships, the members of this group were homogeneous only in terms of their performance. There were no friendships between the children, the relationships between them were not safe, the children were very suspicious, and they could not trust them.

There were doubts, often conflicts between them, there was an emotional gap, which made it difficult to catch up because of the fear of a relationship as a result of fear of rejecting them. "People who do not feel safe in the area where they are often show aggressive attitudes, with strong feelings of anger and jealousy. They have low self-esteem and self-confidence and find it difficult to recognize their own feelings as well as others" (Meyer E., 1987).

Workouts in both teams were performed daily except Sunday, 2 hours each day.

The traditional training mode, which was selected in the control group, has several disadvantages such as:

- Team blocking is not taken into account. This is very important for the integration of athletes with a low sociometric position (level), because in the various games and teamwork, in the majority of cases, there are athletes who are not selected in the teams, or if they are chosen, they are not asked to cooperate and do not participate in activities. This is due to the fact that the teams are formed by the coach without calculating the functionality of the preferred relationships;
- The coach requires the same effort and interest from all athletes, when there are some who do not have the training and the effort required of them exceeds them;
- The dynamic nature of group members (division) is not taken into account.

All of the above, perhaps other elements, make bathing training sometimes carried out at a low level, with low efficiency, not to be of interest to the majority of athletes, and thus not attaining the target athletes. When in a team the athletes do not feel safe and the climate is not friendly, then the athlete does not have good psychology either in the training or the race.

“The psychological factor is the mood, the motivation to fight the athlete, the interest he shows, the anxiety, the self-confidence, the concentration and the ability to focus on the appropriate elements, the ability to manage situations and difficulties, the emotional management of the self of” (Herman C., H., 1986).

In the experimental team, where the athletes had very good relationships with their athletes, the training was in an excellent climate, there was motivation, communication, motivation, organization, and one helping the other tried for the good of all members. There were no conflicts or implications among the athletes.

From January 2017 until December of the same year, both teams took part in all the races that took place in these categories that our athletes are aged. Specifically, they took part in 4 championships so that all children run in all the events so we can get a picture of their results, compared to the two years of the survey. The results of the control group athletes as well as the results of the experimental group for 2017 are presented in the tables below.

Table no. 5

<i>CONTROL TEAM RESULTS OF THE GAMES 2017</i>					
A/A	Full name	100 Free style	200 Free style	100 Backstroke	50 Butterfly
1	O.H	1:15:89	2:50:56	1:25:56	00:49:67
2	I.C	1:17:20	2:58:10	1:28:34	00:51:56
3	T.L	1:15:56	2:51:56	1:26:69	00:52:87
4	B.C	1:18:33	2:55:19	1:29:45	00:52:87
5	E.L	1:18:45	2:57:34	1:27:28	00:55:29
6	M.T	1:19:78	3:00:45	1:28:90	00:54:90
7	N.M	1:16:22	2:59:39	1:27:45	00:49:67
8	A.E	1:17:29	3:02:69	1:24:87	00:51:78
9	C.B	1:15:12	3:04:29	1:23:67	00:53:89
10	P.I	1:19:56	2:58:93	1:26:30	00:50:45
11	N.G	1:22:45	3:05:38	1:30:38	00:55:69
12	E.B	1:20:56	2:59:18	1:31:60	00:57:69
13	E.C	1:18:29	2:56:51	1:26:34	00:51:89
14	E.G	1:22:78	3:08:78	1:32:67	00:54:71
15	D.T	1:21:56	3:04:12	1:31:38	00:56:94



Table 6

<i>EXPERIMENTAL TEAM RESULTS OF THE GAMES 2017</i>					
A/A	Full Name	100 Free style	200 Free style	100 Backstroke	50 Butterfly
1	B.D	1:19:69	3:02:45	1:23:93	00:54:86
2	A.O	1:21:89	3:05:32	1:26:67	00:55:67
3	N.L	1:26:34	3:10:89	1:32:82	00:59:45
4	B.F	1:26:21	3:11:59	1:33:52	01:04:62
5	C.P	1:24:78	3:08:61	1:29:62	01:01:38
6	M.D	1:23:89	3:02:29	1:27:62	00:58:35
7	X.B	1:19:78	3:01:68	1:25:61	00:56:72
8	O.I	1:24:61	3:07:28	1:31:16	01:02:52
9	Z.F	1:24:67	3:09:62	1:30:49	01:03:62
10	D.P	1:20:49	3:03:02	1:28:16	00:58:02
11	D.C	1:21:49	3:04:62	1:30:30	00:57:31
12	M.C	1:24:67	3:10:36	1:31:48	01:01:94
13	T.P	1:26:56	3:14:92	1:35:81	01:05:57
14	S.T	1:22:61	3:10:58	1:33:28	01:00:45
15	M.P	1:23:50	3:09:52	1:35:62	01:03:58

According to tables 5 and 6 we find that the control group for 2017 has better times for the experimental group. Then we will present two more tables with the racing results of the year 2018.

Table 7

<i>CONTROL TEAM RESULTS OF THE GAMES 2018</i>					
A/A	Full Name	100 Free style	200 Free style	100 Backstroke	50 Butterfly
1	O.H	1:18:76	2:53:78	1:27:59	00:52:56
2	I.C	1:19:67	3:04:95	1:32:00	00:53:13
3	T.L	1:17:45	2:56:47	1:29:29	00:55:56
4	B.C	1:23:79	3:00:82	1:33:69	00:57:00
5	E.L	1:21:58	3:05:67	1:30:37	00:59:48
6	M.T	1:23:67	3:03:29	1:31:38	00:58:27
7	N.M	1:18:59	3:04:69	1:34:47	00:53:27
8	A.E	1:20:67	3:06:29	1:27:62	00:56:37
9	C.B	1:18:45	3:08:58	1:26:17	00:57:69
10	P.I	1:23:56	3:09:25	1:30:29	00:52:36
11	N.G	1:26:25	3:10:59	1:36:25	00:58:48
12	E.B	1:24:78	3:04:69	1:36:16	01:01:45
13	E.C	1:22:69	3:00:28	1:30:46	00:56:82
14	E.G	1:26:78	3:14:48	1:36:15	00:58:17
15	D.T	1:24:53	3:08:40	1:34:52	01:00:81

Table 8

EXPERIMENTAL TEAM RESULTS OF THE GAMES 2018					
A/A	Full Name	100 Free style	200 Free style	100 Backstroke	50 Butterfly
1	B.D	1:17:35	2:58:79	1:20:27	00:52:56
2	A.O	1:18:56	3:01:28	1:23:62	00:54:13
3	N.L	1:22:23	3:04:62	1:28:39	00:57:27
4	B.F	1:21:38	3:06:03	1:30:28	00:59:37
5	C.P	1:20:56	3:04:05	1:25:53	00:57:26
6	M.D	1:19:39	2:57:31	1:24:69	00:56:16
7	X.B	1:16:47	2:56:17	1:22:41	00:55:26
8	O.I	1:22:28	3:02:53	1:26:28	00:58:69
9	Z.F	1:22:17	3:06:24	1:25:25	01:00:34
10	D.P	1:17:59	2:58:25	1:24:36	00:56:45
11	D.C	1:17:49	2:59:71	1:25:17	00:54:28
12	M.C	1:21:72	3:04:62	1:28:42	00:58:38
13	T.P	1:23:56	3:10:52	1:30:39	01:02:49
14	S.T	1:18:29	3:05:48	1:25:73	00:56:29
15	M.P	1:20:69	3:04:58	1:30:27	00:58:16

As we can see, in Tables 7 and 8, the control team has reduced its performance significantly in the year 2018, while the experimental group has much better times than last year. It is therefore considered that work in a friendly environment can work positively in sport, offering athletes not only an ideal training environment but also many distinctions and achievement of goals. Overall, until now research has generally supported the primacy of team performance, and especially among members who have good relationships with each other, the activity is more productive. When in a group of people who in our case are athletes, good mood, solidarity, contribution, moral superiority are absent, then we have unacceptable behaviors that benefit no one but only harm the whole. Relationships between control team members were uninteresting since the start of the experiment, but they worsened in the second year because athletes saw their performance falling. In contrast to the experimental group, the members' relationships have always been very good, and since the athletes saw a positive development in their performance, their relationships went even better.

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# **KINETOTHERAPY SECTION**

## STUDY UPON 6-7 YEARS AGE PRESCHOOL CHILDREN SPINE DISORDERS PROPHYLAXIS

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### **Abstract**

*Background:* The organizing of physical education with preschool children always was and still is a very actual issue which requires from the specialists to create new approaches according to contemporary social requirements. This article addresses the problem of prophylaxis of the spine deficiencies of preschool children by applying the means of physical education in various forms. Regarding this it was developed a model of the prophylaxis of the spine deficiency in preschool children, which was applied for a one-year period of their education. The recorded results demonstrate the effectiveness of applying the experimental model, which allows us to recommend it for implementation in physical education in preschool institutions.

*Objective:* In this context the research aim is to experimental argue the efficiency of the physical education means in preschool children spine disorders prophylaxis.

*Methods:* The methods used are:

1. Specialized literature analysis and generalization in what concerns physical education for preschool children;
2. Assessing the physical training and physical development levels of the preschool children in Romania;
3. Spine disorders in preschool children study;
4. Experimental argue for the efficiency of the physical exercise in preschool children spine disorders prophylaxis and recovery.

*Conclusion:* The scientific evidence based results demonstrate the preschool children physical education process improvement effectiveness. The practical application of the proposed experimental methodology will contribute to the motor training level increase, as well as to the spine disorders prophylaxis for 6-7 years preschool children.

**Keywords:** preschool children, physical education, prophylaxis, spine disorders, physical development.

### **Introduction**

Social progress at the current stage has led to a considerable reduction in the physical activity of the population, especially children, from the earliest age. More and more they are involved in various static activities, directly or indirectly, using gadgets such as computers, mobile phones, etc.

The results are all kinds of problems with the locomotor system, more specifically the affected state of the spine, basic pillar of the human body. The age of 6-7 years is one in which the skeleton is growing and developing and the specialists in the field of physical education and sports should take into account all the physiological and anatomical laws specific to this age.

Specialists in the field, such as Antonescu M.D. (2008), Blandine C.G. (2009), Gîrleanu L. (2001), Niculescu I.I., (2006), presents a number of recommendations regarding this chapter, but these are in most cases medical, ie the application of various medical devices and, is based on the application of the means acquired in the field of physical education and sport.

Unjustly, in this case, the role of physical exercise for the prophylaxis of the spine deficiencies is diminished. The prophylaxis of the spine deficiencies was the particularly interested issue in our researches and we consider it quite current and absolutely necessary for the physical education of preschool children.

At the same time, very few researches are devoted to prophylaxis of the problems of the locomotor system, including the spine in pre-school children. The need to study this problem results from the fact that the results of several researches initiated by Constantinescu M. (2014, 2015), Constantinescu M., Havriș D., Constantin A. (2010), Fozza C.A. (2002), Mureșan E. (2006) showed that there are an impressive number of pupils in the primary school, those who come from preschool institutions with different types of skeletal deficiencies and among them the most common ones are those of the spine.

The most common deficiencies of the spine are scoliosis, hiperkyphosis and hiperlordosis. The field specialists propose the widespread use of the means of physical education, ie physical exercise, for the prophylaxis and treatment as far as possible of these malfunctions. Specialists such as Antonescu M.D. (2008), Constantinescu M. (2015), Constantinescu M., Havriş D., Constantin A. (2010), Zavalisca A., Demcenco P., Tuchilă I. (2012), considers that these deformations are easier to prevent than to be treated later, which can be makes it quite difficult and difficult and only by medical means.

In recent years, in most European countries with a well-developed economy, the issue of physical education and development of preschool children has often been and is being addressed. In this regard, the specialists come up with a range of organizational solutions, either in sports activities, which are compulsory in kindergartens, or in other forms of physical education organization, such as morning revival, active breaks, competitions with dynamic games etc.

### **The prophylaxis of spine deficiencies for preschool children**

Starting from the above-mentioned arguments, we can say there is no currently well-founded scientific methodology for preschool children, more specifically 6-7 years, spine deficiencies prophylaxis.

During the academic year 2017-2018, a pedagogical experiment was organized, which aimed at highlighting the level of physical development and training of preschool children from the perspective of physical education activities in preschool education institutions.

In this respect, a detailed analysis of the recorded results was carried out and it was proved that the level of physical development and training of preschool children in Romania and the Republic of Moldavia is well below the standards for this age at all tested parameters.

Also, in this experiment the situation regarding the number of children with deficiencies of the spine, which appeared at the beginning of the age of 6-7 years, ie at the end of the pre-school period, was also analyzed, as well as in the literature, mentioning the authors Constantinescu M. (2015). Constantinescu M., Havriş D., Constantin A. (2010). Zavalisca A., Demcenco P., Tuchilă I. (2012).

From six preschool Romanian institutions we selected a sample in a total number of 522 children, aged between 5 and 6 years, 255 boys and 257 girls.

All of these children were also examined for several parameters related to the assessment of the level of motor training, physical and functional development, as well as highlighting the number of their spine deficiencies.

The aforementioned have directed us to look for effective ways to improve the situation in this regard, referring primarily to the prevention of deficiencies of the spine of preschool children by applying the means of physical education in their training. In this respect, a pedagogical model for the application of the means of physical education in physical education with preschoolers for 5-6 years (Table no. 2) was made.

The given model focuses on three general compartments, these being: the place of sports activities, the use of the means proposed for application in the process of training and assessment of the condition of the spine of children following the application of the means described in the model.

Both block one and block two of the given model focused on two large groups of tools, such as object exercises and objectless exercises.

It is worth mentioning that this model has been applied in the process of teaching children from preschool education institutions in Romania for a period of one year. The children in these institutions have been physically active every day, each time being 30 minutes. Exercises complexes were elaborated (Table no. 1), either in written or graphic form, varied according to the objectives of physical education activities and changed once a week or at least once every two weeks.

The way of completing the exercise complexes was quite simple, where the didactic framework held a complex of exercises, and at the end of the sports activity a dynamic game with concrete tasks was built, based on its goals.

However, children have always received some individual tasks to be done at home under the control of their parents. The content of each task was strictly formulated, or drafted by the teacher, indicating the number of repetitions for each exercise, in order to dose the physical effort.

Parents were informed at the beginning of the year about the purpose of the experiment. There were several ways of communicating with parents, one of these was the by e-mail.

These exercise complexes are not only for the prophylaxis of children's spine deficiencies, but are quite beneficial to improve the level of motivational training, functional training, which in turn will positively influence the overall health of children.

EXERCISES USING A CHAIR		
<b>Sitting exercises</b> <ul style="list-style-type: none"> <li>- Both hands to your sides, inhale and slowly raise your hands upwards, exhale and lower your hands back down to your sides;</li> <li>- Bring the right heel forward, the same time you punch with your right arm; the same with the left;</li> <li>- Bend over and place your right palm on the floor, outside your left foot. Extend your left arm up to the heavens. Turn your head to follow your left arm, to gaze at your left hand. Take a moment to feel the stretch, then do the opposite side;</li> </ul>	<b>Standing exercises</b> <ul style="list-style-type: none"> <li>- Stand behind the chair, holding on for balance. Breathe in, breathe out and slowly lift one leg straight back without bending your knee. Hold position for 1 second and then slowly lower your leg;</li> <li>- hold on to the back of the chair, lift up your right foot and balance on your left foot. Hold that position for as long as you can, then switch feet;</li> <li>- Imagine you are standing in the centre of a clock. The number 12 is directly in front of you and the number 6 is directly behind you. Hold the chair with your left hand. Lift your right leg and extend your right arm so it's pointing to the number 12. Next, point your arm towards the number three, and finally, point it behind you at the number 6. Bring your arm back to the number three, and then to the number 12. Look straight ahead the whole time.</li> </ul>	<b>Using the chair only as a support tool</b> <ul style="list-style-type: none"> <li>- different types of squats</li> <li>- different types of push-ups</li> <li>- different types of abs</li> <li>- different types of hyperextensions</li> </ul>
EXERCISES USING A BROOMSTICK		
<b>Broomstick in front</b> <ul style="list-style-type: none"> <li>- Extend the arms straight in front of you. Hold the broomstick from one end and put the other one down. Lean forward, tuck the stomach in, then slightly rock up and down, moving just a few inches;</li> <li>- Hold the broomstick in front of you on both ends, keeping your hands pretty wide. Keep your elbows straight and bring the broomstick overhead and back (but not down). Next, bend your elbows and flex them so that the broomstick ends up close the back of your neck. Finally, extend them back to the starting position.</li> </ul>	<b>Broomstick at the back</b> <ul style="list-style-type: none"> <li>- Wide grip with your hands holding each end of the broomstick. Keep your elbows straight and lift the broomstick up and over your head. Bring it as far back as you can while keeping your elbows straight;</li> <li>- Hold the middle of the broomstick with one hand. Lift the stick overhead and behind your back and grab it with the free hand from the front side of your body. Slightly rock the arm by pulling with the lower hand, moving it up and down. Make sure your elbow of your upper arm is pointing to the side</li> </ul>	<b>Broomstick in the side</b> <ul style="list-style-type: none"> <li>- Wide grip on each end of the broomstick. Keep your elbows straight. Lift up one arm and first bring it up overhead, then down at the back side of your body. Imagine you're drawing a circle with the stick. At the same time bring your left hand to the back side of your body, close to your lower back. Next, lift up the left hand and do a similar circle so that the broomstick ends up at the front side of your body, close to your quads. Then, do the right side</li> </ul>
EXERCISES USING OWN WEIGHT		

**Table no. 1** Exercises complexes for the prophylaxis of spine deficiencies

THE PROPHYLAXIS OF SPINE DEFICIENCIES FOR PRESCHOOL CHILDREN PEDAGOGICAL MODEL		
USING OBJECTS EXERCISE COMPLEXES	HOME EXERCISE COMPLEXES	USING OWN WEIGHT EXERCISE COMPLEXES
	IN WATER EXERCISE COMPLEXES	
	AT THE GYM EXERCISE COMPLEXES	
	OUTSIDE EXERCISE COMPLEXES	
	DYNAMIC GAMES	
EXERCISE COMPLEXES AND DYNAMIC GAMES FOR ALL THE MUSCLE GROUPS		
USING OBJECTS EXERCISE COMPLEXES	HEAD AND NECK MUSCLE GROUPS	USING OWN WEIGHT EXERCISE COMPLEXES
	UPPER LIMBS MUSCLE GROUPS	
	TRUNK MUSCLE GROUPS	
	LOWER LIMBS MUSCLE GROUPS	
MEDICAL EVALUATION (TESTS)		

**Table no. 2** The prophylaxis of spine deficiencies for preschool children pedagogical model

Regarding the methodology of applying exercise complexes for the prevention of spine deficiency in preschools, the didactic framework will take into account the following aspects: the age of the children, the genre, the level of motor training, the level of physical development, the state of health, the deficiencies of the motor system, the place sports activities are performed, inventory available, part of the day (morning, afternoon, evening).

Speaking about the methodology of organizing and running dynamic games, we will point out the following compulsory aspects: child contingent, age, level of motivational training, level of physical development, material conditions of the institution, the place games are performed.

The teacher will see that dynamic game complexes change at least once every two weeks, the number of games played in a sports activity do not exceed 2 games.

Through the pedagogical observations, the didactic framework will highlight the most demanded games for children and these will also be used for educational purposes, serving as a means of motivating children to exercise, increasing the interest in regular attendance of the kindergarten, stimulating sports practice from the beginner levels, even to competition.

One of the basic aims of our research was to highlight the effectiveness of the application of the means of physical education in the prophylaxis of the spine deficiencies in the pedagogical experiment. The means of physical education, according to the experimental methodology presented at the beginning of this chapter, were to be applied daily in the sports activities organized by the teachers. Both at the beginning and at the end of the pedagogical experiment, all children were analyzed with the help of specialized medical staff from preschool education institutions, who would appreciate the number and deficiencies of children at the beginning and end of the experiment.

**Table no. 3.** Analysis of the spine deficiencies of children aged 6-7 years framed in the pedagogical experiment (boys = 255, girls = 267)

No.	Type of spine deficiencies	Sample	Initial tests	Final tests	Diff (units)	Diff (%)
1	Lordotic attitude	boys	184	21	163	88,59
		girls	86	30	50	65,12
2	Kyphotic attitude	boys	160	35	125	78,13
		girls	82	-	82	100,00
3	Scoliotic attitude	boys	45	5	40	88,89
		girls	133	45	88	66,17

The authors Constantinescu M. (2014) and Gîrleanu, L. (2001), state in their work that at the age of 6-7 years, children do not yet develop spine diseases such as scoliosis or others, here we have the so-called attitudes like: lordotic attitude, kyphotic attitude, scolitic attitude.

### Results

So, as mentioned above, 522 children aged 5 to 7 participated in the pedagogical experiment. At the beginning of the school year, all children were examined to find the actual number of children with so-called attitudes, as being prone to some future deficiencies of the spine.

All results were collected, analyzed, statistically processed and presented in Table no.3, and Figures 3-5.

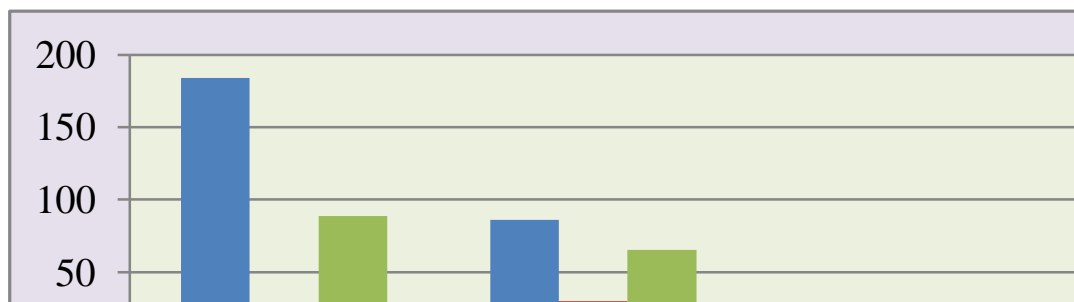


Fig. 3 Analysis of the lordotic attitude children aged 6-7 years framed in the pedagogical experiment

The results recorded after the final medical examinations were as curious as they showed a definite decrease in the number of children prone to spine diseases.

Both boys and girls at the end of the pedagogical experiment recorded a much lower number with spine deficiencies.

More convincing results were recorded in the case of children with kyphotic attitudes, which is also a type of deficiency of normal spine development in preschool children (Fig. 4).

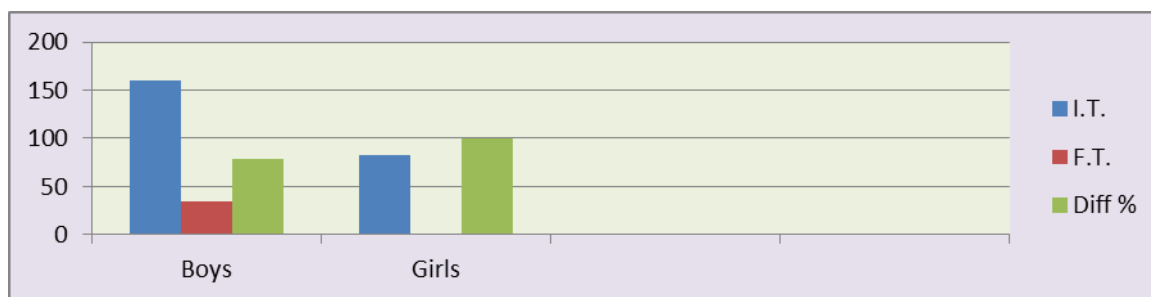


Fig. 4 Analysis of the kyphotic attitude children aged 6-7 years framed in the pedagogical experiment

There is a similar pattern as in the case of children with lordotic attitude, ie the number of children with kyphotic attitude is approximately equal to that of children with lordotic attitudes.

If we are to analyze this indicator, it is very clear that boys at this age tend to develop more spine deficiencies in respect of kyphotic attitude type than the girls. Instead, both groups recover quite efficiently if well-designed means are used for prophylactic purposes.

The third type of spine deficiency analyzed during the experiment was the scolitic attitude of the children (Fig. 5).



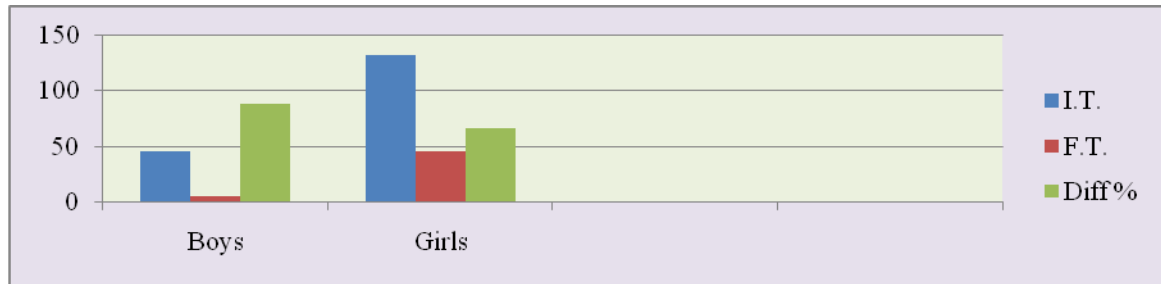


Fig. 5 Analysis of the scoliotic attitude children aged 6-7 years framed in the pedagogical experiment

Scoliotic attitudes in children aged 6-7 are quite common, mostly for girls. In the absence of measures to prevent these, it is likely that the scoliosis will develop, which is hard and sometimes impossible to recover.

### Conclusions

Our strengthened findings and literature lead to a common denominator that at the age of 6-7 years, children do not develop spinal cord diseases such as scoliosis or others, here we have the so-called attitudes like: lordotic attitude, kyphotic attitude, scoliotic attitude.

It is worth mentioning that many of the children undergoing medical control in this regard are prone to multiple spine deficiencies, which makes the number of children with different spine deficiencies higher than the total number of children.

The recorded results have clearly demonstrated that the use of physical education in preschool institutions and at home, can prevent a large number of children from subsequently having major problems related to their development, especially spine deficiencies.

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## THE ROLE OF INTEGRATED PSYCHOLOGICAL KINETO RECOVERY IN THE POST OF AVC PATHOLOGY

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### Abstract

The paper lays emphasis on the importance of linking the methods of kinetic recovery techniques and the specific methods of psychological consoling, which holds the purpose of complex rehabilitation of the patient with stroke both physical /mental and emotional , lowering the negative impact of depression linked to after stroke depression.

*Beginning:* Stroke means a fast lost of the brain function because of the problems that occur in brains' blood flow. The history may be either ischemic – missing the blood flow caused by a block of brain blood (thrombosis, arterial embolism). Ischemic stroke or blood stroke is a cause of a brake of blood vessel or of an average blood structure- blood stroke.

*Prevalence:* In Europe around 1 million deaths each year come because of stroke 20-30% of the patients die during the first month and about 75% from the survivors develop disabilities and loose their independence. In Romania 21,64% of the death caused by stroke being the second death cause and the second disability cause 11,34%.

National Statistics' Institute believe that a growth of mortality cause by stroke to 35% until 2035 having the data that after the age of 65 the values grow 10 times and the average age of beginning is 37.

**Keywords:** kinetic recovery, depression, psychological consoling

### Introduction

Stroke affects patients' physical, functional, emotional, the consequences differ on dimension and place where the brake took place.

"Somatic paralysis, paralysis, decubitus, pneumonia, urinary incontinence and, implicitly, personal autonomy are reduced. The place and role of the patient both in family and in society changes" (Caplan L.R., Hon F.K.S. (2004).

"Psychological level the modification on emotions brought by the direct brake of emotional centers in the brain cause disorders at the level first of all cognitive, mnesic, prosexice, language, and on the other side the difficulty to adapt to the new boundaries which came along with this sickness align the emotional mood to about 50% of the patients who suffered stroke" (American Psychiatric Association, 1994).

The field research reveal the fact that all emotional manifestation came gradual appear at the early beginning by doubt, revolt, powerless, negativity, catastrophe, modification of self esteem "what have I been and how have I become". Another set of traumatizing modification felt by the patient who suffered stroke are linked to role and status. By changing the role and place both in family and in society the loose or change of job, the modification brought in sexual relational bring a major impact on the patients' recovery (Lucaci P., Necuăeș M., 2015).

"The impact is even bigger when stroke begins at an early age. All this mixture of feelings modifies the inner value system held by the individual and develops a form of depression. The depression after stroke has a prevalence of around 35-50% and begins after 3-6 months after the blood event, period I which the kinetic recovery can be affected and the progress diminished.

The person affected manifests a lack of interest to outer world, lowering energy level, and feels as if the entire world clashed over him/her" (Johnston S.C. et al., 2009).

"The recovery after stroke is a complex and multidisciplinary process. It involves collaboration and a complex team of experts, doctors, physiotherapists, psychologists and occupational therapists. And last but not least the family should offer the emotional support and psychological therapy for determining the new adapting process imposed by the patients' illness" (Khandelwal P. et al., 2016).

Psychological level, all the modification of thinking level need a sustained therapy and it is important that the recovery process at kinetic level to be linked to psychological therapy during all stages because during all levels at each and every one of them involves effort, will, assumption and awareness. The patient must recreate a new identity in which he/she should get use to accepting and valuing himself/herself (Holdevici I., 1997).

**The objectives set out in the psychological plan imply** (Andersen K.K. et al., 2009):

- Understanding the neurophysiological mechanisms that produced stroke;
- Changing cognitions by defining personal goals;
- Information and awareness;
- Taking responsibility;
- Identification of motivational and affective resources;

The established goals are adapted to the patient's attitudes, socioprofessional level, personal pathological antecedents.

From a psychological point of view, cognitive behavioral therapy fills most effectively with the patient's needs because it focuses the patient's attention on the present and the situation they are in. It will help to identify negative thoughts, thought errors, change behavior and, implicitly, mood. The patient will be taught to think adaptively, to improve their affective feelings, which will increase motivation. The main theoretical trends in cognitive behavioral therapy are: "Cognitive Model of Aaron Beck" and "Albert Ellis Cognitive Model" (Bancroft J., Graham C., 1998).

### **„Cognitive Model of Aaron Beck"**

The essential concepts of Aaron Beck's model are automatic thoughts, cognitive distortions and cognitive schemes (Daniel D., 2006).

#### **a. Automatic gags**

These are the thoughts that occur involuntarily and automatically when a person is in a certain situation. For example, a patient during a decinetotherapy session, following repeated exercises, looks into the mirror and in his mind the following thoughts may arise: "I'll never recover, I'm a loser, I'm incompetent, I'm disabled now, I have no chance". These automatic thoughts are grouped into cognitive schemes that have a higher degree of generality. These thoughts may occur at any time during the recovery process, depending on the individual cognitive pattern and the area in which the patient activated before stroke occurs.

A cognitive scheme such as "I am incompetent" and is manifested in several areas of her life that refer to performance.

#### **b. Cognitive schemes**

Cognitive schemes are the basic beliefs that people have about themselves, the world and others. Two types of cognitive schemes are known: adaptive and non-adaptive. Certain cognitive disadaptive schemes are predictable for emotional and behavioral changes. For example, a person who develops a mild form of depression, and who, in the recovery room, is observed to look first worried around, with an aura of helplessness and painstaking painted on the face, will have the schema: "I do not want to do nothing good! I'm not in the mood! I will never recover!".

#### **c. Cognitive Disorders**

Cognitive distortions or thinking errors are: overgeneration, maximizing or minimizing the importance of events, personalization, thinking of the "all or nothing" type, leaping to conclusions.

Through therapy, the patient will be taught and helped to understand the neurophysiological mechanisms that produced stroke; It will define viable, achievable personal goals, will be assumed in terms of changing the

role in the family and in interpersonal relationships, and after the interview and observation will be helped to identify motivational and implicitly affective resources.

„It is important to be aware by the therapeutic team that each patient is different in his personality structure and in the pathology overlaid by the disease of the personal pathological antecedents, and that each therapy will be adapted and personalized to the patient” (Sbenche T., 1987).

If a patient with stroke pathway is recruited into a cognitive behavioral therapy session, segmented in meetings, complicated in the motor recovery process, we will have at discharge, a recovered patient both physically and emotionally, reintegrated into the family, returned to the company.

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**PHYSIOTHERAPY AND MANUAL THERAPIES IN STRESS AND ANXIETY****SOMARDOLEA (GUTOI) Maria-Alina<sup>1\*</sup>, SLĂVILĂ Mircea<sup>2</sup>**<sup>1,2</sup>Ecological University, Faculty of Physical Therapy and Special Motricity, Bucharest, Romania

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**Motto:** “But the real secret to life long good health is actually the opposite: Let your body take care of you.” (PhD Deepak Chopra)**Abstract**

Human body is our vehicle in this life time and it is the one that, without us noticing, is creating the perfect environment for each day. He is taking care of us being alive and experiencing every day. Our heart beats, our eyes see, our lungs breathe even when we sleep or work. Our body has this amazing system that balances itself, as much as it can, when in stress or new environment.

Our brain processes 2000 bits data/second – as our conscious mind. Our body processes 4.000.000 bits data/second – as our unconscious mind.

The recent years, when high level of technology over flood our lives, a high percent of the population is experiencing a new, increasing level of stress and anxiety.

Using our brain mainly in activities that involved virtual experiences, virtual social networks and less physicality creates a huge unbalance between the conscious and unconscious, one that would result, in time, in high level of disconnection, stress, anxiety.

With the same influence is the work-related stress.

Romania is one of the countries in Europe with the highest work-related stress

- 62% of the working population fear losing their jobs.
- 43% are experiencing stress related to violent work environment.

In 2017, from January to May, the Dynamic HR and Learning Network conducted a study “National Stress” revealing the fact that 99,7 % of the Romanian employees suffers of burnout, stress, sadness or depression.

The study was conducted on 804 employees, with ages between 26-35 years old, working in HR or Sales department.

Manual therapies and physiotherapy are tools that reconnect body, mind and spirit. They help in reconnection of the conscious and unconscious mind through connecting the movements and sensitive responses of the body to the brain and mind.

Active bodies, people that use movement, walks in nature and choose to exercise, as a daily routine, experience a much lower level of stress or anxiety.

Through gentle manual therapies, like massage or cranio-sacral therapy, our body is assisted in reconnection to the whole communication system of our being. In therapy, the body can signal areas of stress or which need attention or healing and could release stress and tensions.

The results are seen in the health, immune system, in clarity of mind and in relaxed approach of daily life.

Physiotherapy allows the body to move as a whole structure, using all muscles and joints that in virtual reality living are completely ignored and in our daily work environment are forgotten.

In this, the results are seen as flexibility even in decision making, lighter breathing increasing the level of oxygen to allow the entire body to expand the communication and to adapt.

**Keywords:** body, manual therapy, physiotherapy, stress, anxiety

*The Environment, The Technology and the Influence on our Health*

“The evolution of science and the use of new understandings on the profoundness of nature, the physical environment, the cosmos and of the way we belong to this space, have been supporting human’s development on all levels (physical, mental, social, spiritual). Each stage of evolution, each scientific breakthrough, has brought improvements to the level of living, to the work space and to the way we travel, accelerating the travelling speed and decreasing, almost always, the travelling time” (Bays B., 2009).

Over the past 10 years, as in a science fiction movie from 1990, the technology has brought on a new level of communication which is faster, independent of distance and requires a minimum of physical movement. These leaps in technology are supported by science which is a part of this mirage, confirming human capacities to reposition, to adapt and transpose to new shapes.

“The scientific discoveries - which have come to confirm the understanding of the bodies at their vibrational level, the bodily transcendence and the unity of space with all matter, are also bringing new depths in the way we are able to interact with the environment and with the tools we are using. It is also due to science, and to the human capacity to assimilate information, that we assist to an exponential increase in the use of technology- both by adult and very young generations” (Bays B., Billet K., 2018).

A study led by the University of Texas and McCombs School of Business and conducted in Austin (2017) on almost 800 smartphone users, concluded that the mere presence of the telephone in close proximity reduces the capacity to concentrate. In their desire to remain focused enough time, the subjects were consuming mental energy in their attempt to not be distracted by the phone. The subjects were divided into three groups: some had the phone by their side, face-down on the desk, others kept it in their pocket and the last group had the phone in another room. All phones were on silent. The results showed that the ones with the phone farther away had a higher cognitive capacity than all the others, this proportionality being the same also in the other groups.

“We see a linear tendency which suggests that, the more visible the smartphone is, the more the cognitive abilities available to the subjects are reduced. The conscious mind does not think at the smartphone, but the process itself- of forcing oneself not to think of something, consumes part of one’s limited cognitive resources. It is draining the brain’s energy. It wasn’t the fact that the participants got distracted by the notifications received on their phones. It was the mere presence of the smartphone, which was enough to diminish their cognitive capacity.” (Professor Adrian Ward, McCombs School of Business, 2017).

“The studies show an increase at all ages in the levels of stress, depression, chronic illness, terminal disease. For all of these, science brings solutions through more and more innovative treatments and through studies that show the importance of physical exercise, grounding and socio-emotional balance in healing. What actually happens is that the level of information processed through the body and neglected by the selective attention which is involved in mental and virtual activities, is creating gaps between the needs of the physical body, the emotional states and the way daily activities are carried out” (Wanveer T., 2016).

Another factor, resulted from adapting to the rapidly evolving level of information, is conglomerating the employees within workspaces which can allow the shortest time possible for the assimilation of data and action results, in order to generate profit and reimburse the employees, as payment or benefits, all the energy they have invested.

Inside such workspaces, hosting 8 to 20 employees, most of the times, the only form of ventilation is the ventilation air system which allows only a filtration and recirculation of the air in the respective spaces. Rarely are they provided with the option of external ventilation for fresh air intake. Although all these seem to be built and implemented in order to facilitate a good living and good health, things are different from a global perspective.

By separating themselves in the online environment and living 8 to 10 hours per day in ventilated-air workspaces, with mostly artificial light and with very little physical activity, the individuals deprive themselves of elements that are naturally supporting their health.

Physical immobility and predominantly virtual relationing create a disconnection from the physical body, which has great influence on the emotional state. That capacity of the brain to process information is used in an environment that is not correlated to the adequate physical activity, while what the physical body processes ends up being ignored through emotional immobility.

„He who is everywhere is nowhere” (Seneca)

For these reasons, stress is accentuated to such an extent that it generates chemical imbalance, causing physical or mental disorders and allowing depression to set in.

Regaining inner force and balance and restoring the physical and mental structures may be accomplished through connecting (reconnecting) to the body, to the present moment, to the environment, through physical activities, breathing and food.

*What happens inside the body and how can we support it?*

“A person has an average of 8000 thoughts per day, out of which 90% repeat almost daily. The way we deal with these thoughts, the way we pay attention to them and how we react, mainly define the mental emotional and cognitive programs on which our life experience is ran” (Dispenza J., 2014).

Being in the present, here and now, attentive to your own actions, is an exercise that requires first of all a good connection to the physical and emotional bodies. Thoughts are the language of the brain and emotions are the language of the body. The way we think our daily interactions and the way we relate to passing thoughts that come as a memory of actions from a previous day define the emotional environment of the moment, respectively, they set the biochemistry of the body to the emotions, experiences and reactions which are associated to the context where those thoughts appeared.

An environment where we constantly keep the physical body separated from the state of awareness and in which the visual stimuli and interactions to others are carried out mostly through auditory and visual stimuli and much less through kinaesthetic ones, destabilizes first and foremost the relationship between the brain and the body. The messages become misleading and every component of the physical body relates more and more to the brain in the attempt to re-establish the natural connexion.

In situations of stress or anxiety, the human body suffers a series of modifications that over time could generate even chronic disorders (physical or mental). During the first stages of stress or anxiety, upon the request of the body which is reacting to stimuli, the brain will react by secreting stress hormones: adrenaline, norepinephrine and cortisol. In real situations, on short term, these hormones are the ones saving our life by adapting the body to the event. Within the environment described above, where most of the activity is static and the situation seen as dangerous is virtually created by the online environment, the body will react the same way, but the hormones will become the ones distressing the organism, not saving it. The cortisol may save edge situations, but when it is produced without real reasons, it can -from obvious motives- cause serious illness. Therefore, too much cortisol may lead to low immunity, increased blood pressure and high glycaemia, a reduced libido and serious digestion problems.

According to the Medical Centre from the University of Maryland USA, the severe stress and the anxiety may trigger skin rashes, eczemas. Anxiety doesn't only activate the obvious organs, such as the brain and heart, but it also affects the internal functions of the spleen and blood cells. In order for the oxygen to be better distributed in a body that seems to have been drained of blood due to stress, the spleen will release additional red and white blood cells. The blood flow will also increase with 300-400% during this process, in order to prepare the rest of the body for additional reactions when dealing with stress.

“When one feels anxious, the body contracts creating a tension in many muscle groups. Chronic stress and anxiety can exaggerate this tension, resulting in headaches, pain in the shoulders, throat pain and even migraines. People who find themselves in a constant state of stress present a higher risk of developing chronic muscle-bone system disorders” (Dragan I., 1989).

“In most manual therapies, the first contact with the body is the one defining also a first comeback and connection between the awareness and the subtle reactions of the body which come from the unconscious information. In this case, the role of the therapist is to facilitate the relaxation, the connecting and communicating state between the brain and the body, the emotional and mental, so that the bio-chemical flow in the body allows the rebounding to a present relationing with the self and the environment” (Upledger J.E., 2018).

Through therapies like Cranio Sacral therapy, the body is given back the capacity to release emotional tension flows accumulated even from the simplest accident or flu. Through the communication at the fascia level, the body finally receives the message to regenerate, balance and heal, and the brain has the chance to connect with the direct physical and emotional needs.

In situations of prolonged stress or anxiety, when a part of the body-be it even one single cell, remains stuck in a structure deformed by the emotional state, an inner state of trauma might be created. The stress excess

from the cell patterns can create a high biomechanical and biochemical effort that is unusual but chronic, even long after the trauma per se has finished. Over time, this may re-awaken a continuous stimulation of the stress response, causing a continuous chaos and alarming the autonomus nervous system.

Through our senses, we experience both what is within ourselves and outside of us. The vibrations of the traumatised cells can imprison our whole being. The tissues of the body are created out of a great diversity of cells oscillating at different frequencies. This forms an inter-relational matrix in every part of the body – each cell has an impact on the whole body. Generally, each event in the body has an effect upon the whole body. Therefore, the cells formed while in a state of stress and anxiety can cause unfavourable consequences to the entire body. These cells are like the beats of a time-keeper, the fluctuations of fear, terror or fearfulness vibrating without cessation in the whole being.

“Cranio Sacral therapy can help by making the optimization process of the cells easier, helping the body to change the shape of its cells through soft techniques that improve the natural ways of self-correction.

Massage is one of the therapeutic ways which help the body unplug the accumulated stress areas, through relaxation, by relieving tension and improving the blood flow from the level of the stagnant areas, thus allowing a regeneration and a reconnection to the healthy stimuli and oxygenating the body while giving healthy messages to the muscles again” (Marcu V., Dan M., 2006).

Besides its role in medical recovery, Physiotherapy, can be included in the therapies with good influence on the body- when in stress and anxiety, due to the principles of motion activation of the body in its basic forms. By restoring articular mobility following a trauma or simply by resetting the body's correct position, the Physiotherapy helps to reconfigure each patient's relationship with their own body.

In daily activities, a correct posture allows a good functioning of the entire organism, self-correction when in muscle tension (the posture is more difficult to uphold in a state of tension and muscle strain) and the engagement in stress relief movements.

Physiotherapy may also be used to improve the respiratory function, thus allowing a new flow of changes to take place in the organism. A correct posture and correct breathing will improve the oxygenation system, the intestinal transit and the nutrients take-in the organism needs. Basically, through well controlled physical exercise, mobility, correct posture and breathing, we render the organism vitality and the capacity to adapt to stress factors.

A vital organism with healthy functions and physical mobility will have the same mobility also at a mental level, actually offering functional support that generates emotional mental and physical balance.

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## **VARIA SECTION**

## STUDY REGARDING THE SELF-ESTEEM AND THE SELF-EFFICACY OF THE PARTICIPANTS IN PHYSICAL EDUCATION CLASSES, AT THE UNIVERSITY OF BUCHAREST

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### Abstract

Starting from the premise that the young person is a person in full affirmation of his personality, multiple determined: biological, psychic and social, characterized by a set of needs, interests, ideals, etc., we consider that in their fulfillment a very important role are the perception of self-esteem as well as of the self-efficacy as important elements in self-regulation of their behaviour.

While self-efficacy aims at perceiving one's own abilities to achieve a certain goal, and self-esteem is related to the global perception of its own value, both influence both choosing the behaviors in which an individual will engage, and the resources allocated to the solving of some tasks.

*Objectives.* The idea of this study came from the curiosity of identifying in young first-year students, practically in the first stage of their professional career, the level of self-esteem and the perception of self-efficacy as premises for an optimal professional career development as well as the correlation between availability for physical activity and the capacity of effort and the two components of the personality highlighted above.

*Methods.* We used the following methods: the study of the specialized literature, the survey method based on the questionnaire - "Rosenberg Questionnaire - Self Esteem Scale" and the Self-Efficacy Scale, the statistical-mathematical method and the graphical method.

*Subjects.* Our study was attended by 25 students of the University of Bucharest, enrolled in the aerobics course.

*Results.* By applying the stated questionnaires, the level of self-esteem and self-efficacy was investigated both at the beginning of the semester and at the end of the semester after attending the contents of aerobics classes. Also, it was carried out an initial and a final assessment of the effort capacity, through the Ruffier Test.

*Conclusion.* We can say that, in the view of the investigated subjects, participation in aerobics lessons influenced the satisfaction of those needs that they consider important in the success of their personal, socio-professional approaches: improving self-esteem, the qualitative change of their beliefs about their ability to deal with specific situations, improving social relations, which confirms our hypothesis.

**Keywords:** self-esteem, self-efficacy, physical education

### Introduction

"The young person is a person in full affirmation of the personality, multiple determined: biological, psychic and social, characterized by a set of needs, interests, ideals, etc. In their fulfillment a very important role is the perception of their own self-esteem, as well as of the self-efficacy, as important elements in self-regulation of their behavior" (Bandura, A., 1997).

"While self-efficacy aims at perceiving one's own abilities to achieve a certain goal, and self-esteem is related to the global perception of its own value, both influence both choosing the behaviors in which an individual will engage, and the resources allocated to the solving of some tasks" (Jerusalem, M., & Schwarzer, R., 1992).

### The research organization

#### *The purpose of the paper*

In this paper we aim to identify in young first-year students, who are in the first stage of their professional career, the level of self-esteem and the perception of self-efficacy as prerequisites for a professional career development as well as the correlation between availability for physical activity and the capacity of effort and the two components of the personality highlighted above.

***The research objectives***

To achieve the proposed goal, the following research objectives were set:

- Establishing the research sample;
- Applying the self-esteem and self-efficacy questionnaires in two moments: the beginning and the end of the first semester, the academic year 2018-2019;
- Carrying on the aerobic gymnastics program;
- Analyzing and interpreting the results.

***The hypothesis of the research:*** carrying on the content specific to aerobic gymnastics will lead to a positive change of the investigated parameters, namely the self-esteem and the perception of self-efficacy, as well as an improvement of the effort capacity.

***The research stages***

The data collection and the development of the training programs were carried out as follows:

The initial testing took place between October 17-21, 2018 and aimed at knowing the initial values of the research parameters - the dependent variable.

The final testing took place between January 7-11, 2019 in order to highlight the changes in the research parameters after developing the programs of the aerobics.

***The Subjects and the place of the research***

To conduct the experiment, the sample was composed of 25 UB students (girls), year I, aged 18-21 years, enrolled in aerobics classes.

***The research methods***

In our approach we used the following research methods:

- The study of the specialized literature;
- The statistical-mathematical method;
- The graphical method;
- The tests method:
  - the Ruffier Test
- The survey method based on the questionnaire:
  - the "Rosenberg Questionnaire - Self Esteem Scale"
  - the Self-Efficacy Scale

In the case of the Rosenberg questionnaire, which contains 10 statements (table 1), the subjects are asked to answer the question "To what extent do each of these statements match me?"

Table 1 - Rosenberg Questionnaire

Check in the adjacent columns the extent to which the following statements match you:		Very little	A little bit	Neutral	A lot	Very much
1	Overall I am very pleased with myself					
2	Sometimes I feel I'm not good for anything					
3	I think I have many qualities					
4	I am able to do things as well as most of people around me					
5	I feel that I do not have many qualities to be proud of me.					
6	I often feel useless					
7	I feel like I'm as important as most people around me					
8	wish I could have more respect for myself					
9	I'm inclined to feel like I'm failing					
10	I have a positive attitude towards myself					

In the case of the **Self-Efficacy Scale**, the subjects received a number of 10 statements (Table 2) regarding their professional activity, being asked to assess the extent to which they agree with each of them, each statement being analyzed on the following scale:

- a. Completely untrue as far as I'm concerned
- b. Mostly untrue as far as I am concerned
- c. Mostly true as far as I am concerned
- d. Perfectly true as far as I am concerned

Table 2 – Self-efficacy Scale

Check in the adjacent columns the extent to which the following statements match you:		a	b	c	d
1	I always manage to solve difficult problems if I'm working hard enough.				
2	Even if someone opposes me, I manage to identify the ways and the means to get what I want.				
3	It is easy for me to be consistent with my goals and to achieve my goals.				
4	I trust that I can successfully cope with unforeseen events.				
5	Thanks to my resources, I know how to deal with unexpected situations.				
6	I can solve most of the problems if I invest the necessary effort.				
7	I can remain calm when facing difficulties because I can rely on my defense abilities.				
8	When I'm confronted with a problem I can usually find more solutions				
9	Usually, when I have a problem, I can think of a solution.				
10	I can usually handle any situation and any problems I have to deal with.				

We chose the aerobic gymnastics from the sports disciplines that can be practiced by the students of Bucharest University, on the one hand because it is in the top of the preferences of the students since the establishment of the department, and on the other hand because it is recognized the positive effect on the psychic sphere of sports activities of this kind in which the atmosphere is relaxed, the musical background is entertaining, all of which are prerequisites for the efficiency of such actions.

Over the years, talking to the first year students at their debut in student life, we found that not few are those who were not sure if they made the right choice, who had too little confidence in their chances of success in the field where they chose to develop, which is why we wanted to evaluate the level of self-esteem and the perception of self-efficacy at the beginning and the end of a training program with aerobic gymnastics content.

## Results

In table no. 3 are shown the results of evaluation of self-esteem, initial and final testing.

Table 3 – level of self esteem results

Level of self esteem	Number of the subjects	
	<i>Initial testing</i>	<i>Final testing</i>
Very low self-esteem	3	0
Low self-esteem	6	3
Average level of self-esteem	7	9
High self-esteem	7	9
Very high self-esteem	2	4

The answers to this questionnaire and the score calculation revealed a significant change in the level of self-esteem from one test to another, with most and major changes being noted in statements 1 and 10.

The graphic representation of the answers of the 25 students surveyed is shown in figure no.1

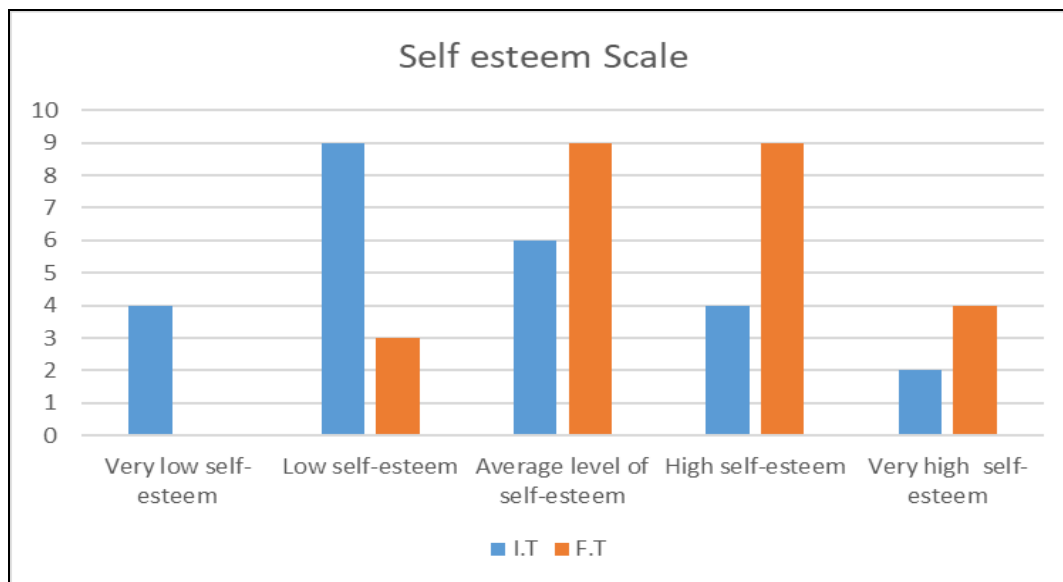


Fig. 1 – The result of the Self esteem Scale

Regarding the **self-efficacy scale**, it includes 10 items describing the self-perceived personal efficiency of the respondent's profession. The perceived self-efficacy score is obtained by adding the score of the 10 items. The score may be between 10 and 40. The higher the score is, the more it indicates a higher level.

The SS scale

	Class 1	Class 2	Class 3	Class 4	Class 5
Scores	≤ 25	26-29	30-33	34-37	≥ 38

In table no. 4 are shown the results obtained in the evaluation of the self-efficacy, the initial and the final testing.

Table no. 4 – Self efficacy Scale

Self efficacy Scale	Number of the subjects	
	Initial testing	Final testing
Class 1 – very low level of self efficacy	4	1
Class 2 – low level of self efficacy	9	3
Class 3 – average level of self-efficacy	8	10
Class 4 – high level of self efficacy	2	5
Class 5 – very high level of self efficacy	2	6

Analyzing the responses obtained by the application of this scale and calculating the scores, we can see the improvement in the level of self-efficacy, as perceived by the subjects of our investigation, from one test to another.

The graphical representation of the answers of the questioned subjects is shown in figure no. 2

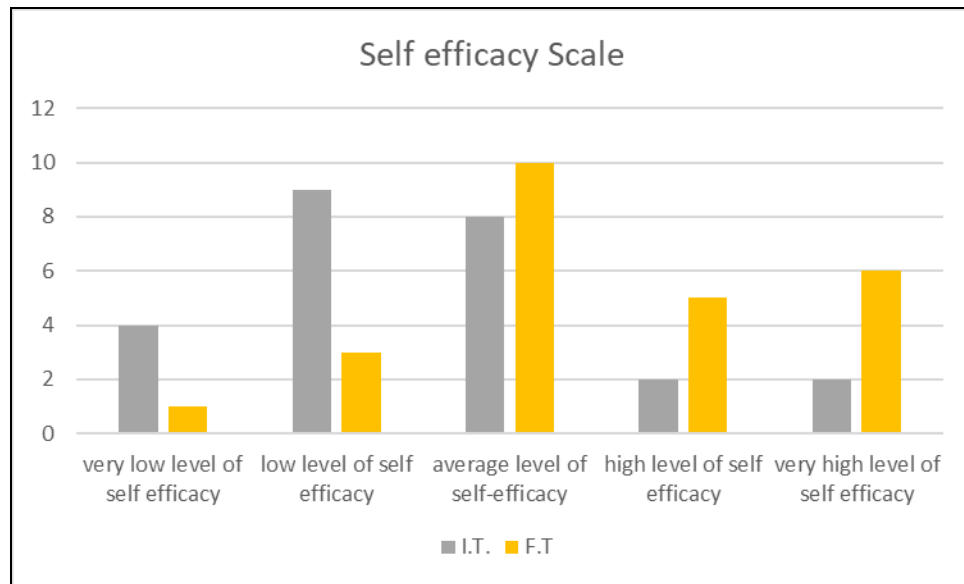


Fig. 2 – The result of the Self efficacy Scale

### Ruffier Test

At initial testing, the students in our experimental group obtained an average value of the Ruffier index of 10.54, and at final testing, the value was 9.08. The differences between the recorded average values are statistically significant because the calculated value  $t$  is greater than the table  $t$ , at a significance threshold  $p = 0.00 < 0.05$ , which confirms our hypothesis.

The graphical representation of the mean values of the Ruffier index is shown in figure no. 3.

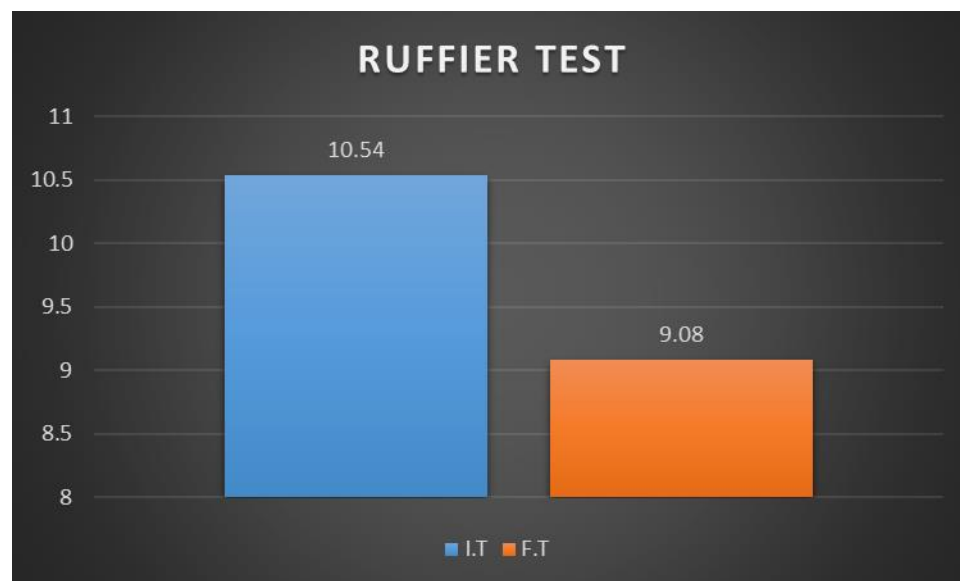


Fig. 3 – The average values of the Ruffier index, initial and final testing

## Conclusions

After analyzing the results obtained by applying the Rosenberg questionnaire and the Self-Efficacy Scale there was an improvement in the scores of the two evaluated variables, which demonstrates that participation in aerobic gymnastics lessons has had positive influences both on self-esteem and on the perception of one's own efficacy, thus confirming our hypothesis. "It is expected that people with a high level of self-esteem and self-efficacy will optimally allocate the resources needed to successfully solve a task, which will help them increase their professional performance" (Rosenberg, M., 1965).

Also, the two above-mentioned indicators correlate with the increase of the effort capacity, the differences between the results recorded in the Ruffier test, in the two tests, being statistically representative and thus validating the hypothesis proposed by us.

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## METHODOLOGY FOR FORMING ENGLISH COMMUNICATION COMPETENCES FOR THE USE OF SPECIALIZED LEXIS TO SPORTS STUDENTS

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### Abstract

Studying of English in higher education creates opportunities and openings to other cultures and civilizations, communication being the linguistic competence stipulated in the (Common European Framework of Reference for Languages, first of all in the terms of Vizental A., 2008), assimilation of the vocabulary and complex lexical units, thus highlighting the value of phraseology (Bushnaq T. 2011).

Forming CCEL in the field of specialized lexis (sporting) is a desideratum of university pedagogy, which is not limited to updating the curriculum and the curriculum construction necessary for the complex valorization of the terminology of the field, aims at guiding the educational process of the university to the students in sports English language that creates openings on the labor market.

The opportunity to study the process of communication competences in English to Sports students is determined by the conditions of contemporary society reflected in the process of modernizing the higher education system in the context of a postmodern, informational, knowledge-based society. In this global and open, pedagogical priority is not the continuously multiplied information, cyclically acquired by subjects involved in the educational process, student-teacher, but communicative competence, which favors their adaptation in a changing environment. It plays a significant role in the assimilation, accommodation and professional integration of future sports specialists (Verdeț, M. 2015).

*The aim of the research* is to develop the methodology of communication competence in English to Sports students by using the sports lexis.

### Objectives of research:

1. Determination of the linguistic and psycho-pedagogical fundamentals of the training of Sports students for professional communication;
2. Studying the historical evolution of the concept of communication competence in English;
3. Identification of psycho-pedagogical premises and professional imperatives regarding the motivation for the students to know the English sports lexis;

*Research methodology:* study of working documentation, conversation, pedagogical observation, analysis and generalization of literature.

*Results.* It is worth noting that by learning a foreign language, students acquire knowledge which will enable them to understand and appreciate another general and professional culture, to broaden their career prospects. Studying a professional language contributes to the development of professional abilities and attitudes by exploring the fields of other disciplines with diverse content. In the process of teaching / learning professional English, professional competence develops, and by reporting individual situations of learning, reception and production, typical of foreign languages, to those of the mother tongue, a unitary conception is created about the functioning language as a primary element of communication. In this respect, there is a need to develop a model for the English language communication competences of students in the field of physical culture (Cazacu T. & Frunze L. 2012).

*Conclusions.* Forming English professional language to sports students helps in the knowledge and application of the sport-pedagogical language, forming general and special cognitive competences, on the basis of which they will carry out the educational activity according to the requirements of the modernized curriculum for physical education.

The process of forming and learning English to students in the field of physical culture gains significance by constantly reporting to social practices and concrete contexts of exercising acquired competences. Learning becomes a clear, targeted process that increases motivation for action. Competencies mobilize the student's previous acquisitions, providing concrete opportunities for achieving the educational process as a result of developing skills, which increases student motivation for learning English. Focusing on the final purchases of training offers freedom in capitalizing on different learning styles, strategies and modern technologies to prepare the future sporting specialist.

**Keywords:** English, sports students, specialized lexis, communication competences.



## Introduction

The knowledge and use of English becomes an acute current need for global professional communication through mobility of expression, mutual understanding and good professional and interpersonal co-operation. Studying English contributes to the vocational training of students by exploring the different areas of socio-cultural life reflected in different content, favouring to a large extent and defining their own interests and motives.

The study of English in higher education creates opportunities and openings to other cultures and civilizations, communication being the linguistic competence stipulated in the Common European Framework of Reference for Languages, first of all in the terms of Vizental A. (2008), assimilation of the vocabulary and complex lexical units, thus highlighting the value of phraseology - Bushnaq T. (2011).

The training of communication skills in English in the sphere of the specialized lexicon is a desideratum of the university pedagogy, which is not limited to the updating of the curriculum and of the curricular construction necessary for the complex valorisation of the terminology of the field, aims at guiding the university educational attainment to the students in the field of sport, the professional communication in English that creates openings on the labour market, according to the current requirements, in relation to the quality of the specialist with higher education.

The theoretical and applicative research of English communication competence at the Faculty of Sports has become a priority in the perspective of gaining a place on the labour market. The current orientation of the academic teaching process according to the specialized terminology requirements (sporting) can ensure the reform of the higher education through the tendency of European integration, amid the tendency of globalization of the labour market, thus conferring the sports lexicon status as a priority indicator of the English communication competence quality from the perspective of the current pedagogy paradigm - the curriculum paradigm, adapted to the field of foreign language teaching, folded openly into the reality of the changing sporting field. With the accession of the (higher) national education to the European educational space, the paradigm of teaching-learning- evaluation of foreign languages should focus on the defining elements of the educational and linguistic policies contained in the Sorbonne Declaration (1998); The Bologna Declaration (1999), the Salamanca Message (2001), the Conference of Ministers of Education in Berlin (2003), the Higher Education Strategy of the Republic of Moldova in the context of the Bologna Process (2004), the Resolution of the Council of Ministers of the European Union quality improvement and diversification of teaching-learning-language evaluation in EU education systems (1995), Common Framework of Reference for Languages (2003), European Language Portfolio (2004). In the process of teaching-learning-evaluation of a foreign language, methodology is the main instrument. The opportunity to study the process of communication skills in English to students in Sport is determined by the conditions of contemporary society reflected in the process of modernizing the higher education system in the context of the postmodern, informational, knowledge-based society. In this global and open context, pedagogical priority is not the continually multiplied information, cyclically acquired by subjects involved in the educational process, student-teacher, but communicative competence, which favours their adaptation in a constantly changing environment. It plays a significant role in the assimilation, accommodation and professional integration of future specialists. The training of communication skills in English is continuous. Thus, cooperative forms of cooperation between educational institutions gain more valences. The quality of linguistic competence training influences the dynamics of communication activity, especially academic and socio-professional communication, typical of the academic environment.

**The aim of the research** is to develop the methodology of communication competence in English to Sports students by using the sports lexis.

### **Objectives of research:**

1. Determination of the linguistic and psycho-pedagogical fundamentals of the training of Sports students for professional communication;
2. Studying the historical evolution of the concept of communication competence in English;
3. Identification of psycho-pedagogical premises and professional imperatives regarding the motivation for the students to know the English sports lexis;

**Research methodology:** study of working documentation, conversation, pedagogical observation, analysis and generalization of literature.

The need to research the problem of forming English communication competence results from: the tendency to implement innovative didactic technologies in higher education in order to make the teaching activity more efficient in general (Neacșu I., 1990, Cucoș C., 2002, Mândăcanu V., 1997, Patrascu D., 1996, Callo T., 2007, Cerghit I., 1997, Cojocaru M., Papuc L., Sadovei L., 2006) and especially in the context of language learning (Harmer J., 2003, Bushnaq T., 2011, Camenev Z., 2010, Vizental A., 2008, Blachowicz C., Fisher P., 2002, Duquette G., 1995, 2000, Richards JC, Renandya WA, 2002, Mes E., 2010 etc).

In the Republic of Moldova there have been applied applicative researches on optimizing the teaching of English in higher education (Burdeniuc G., 2008, Budnic A., 2001, Babîră E., 2003, Ixari A., Gogu T., 2008, Camenev Z., 2010, Grădinari G., 2006, Croitoru T., 2010 etc.). The orientation of education towards the formation of competences, according to Gutu VI., is one of the priority dimensions of educational policies. At the same level, the concepts of "competence-based curriculum, competence standards, competence assessment, etc. are evoked" (Guțu VI., Silistraru N., Platon C., 2003).

Thus, the provision of pedagogical connections between the steps of the educational system excludes the discontinuity of the educational process. At the normative level, this approach becomes an imperative condition in the complex process of communication competence in English. Developing communication skills to students based on English learning is a priority, because through the knowledge of this language, the student is familiar with all the socio-cultural backgrounds of Great Britain and the United States. This contributes to his assertion as a sports specialist, to the improvement of his abilities to communicate, to develop his international sporting language, and the necessity to establish ways to develop the competence of communication with sport orientation. The requirements of the company where the students will later work in order to provide a professional activity are increasingly demanding and pressing in the short, medium and long term. That is why knowledge of English can make it easier to get a job that is tailored to the needs of the current labour market. Researchers in the field (Piaget J., Spencer I., Golu P., Golu M., Șchiopu U., Verza E., Cristea S., Popescu E., Joita E., etc.) join their efforts to study English communication competence in context of various sciences: philosophy, psychology, pedagogy. The context of the professional communication highlights the communicative action as a factor of the communication skills in English, approached by researchers from several perspectives: the pedagogical perspective, the communicative perspective, the contextual-dynamic perspective, the psycholinguistic perspective, the perspective of the communication situation, the socio- linguistics, the perspective of interactive instruction, etc. The formation of communication competence is a vast field with less value-added issues, as evidenced by the recent recommendations of European specialists in modern language learning, which designate linguistic and communicative skills as the determinants of socio-cultural and professional integration.

The importance of studying the issue is based on contradictions in the reality of university pedagogy and modern English language teaching in general and English, in particular, between current requirements in relation to the training of students in the field of sports for professional communication and the questionable quality of English communication competence in the plan of the knowledge and practical use of athletic terms; the necessity of professional integration of graduates of the Faculty of Sports in the workplace, through communicative availability in English and the presentation of indicators and descriptors of the English communication competence lexical quality to the Sports students;

In the key to curriculum development for higher education, Cojocaru M., Papuc L. etc., through teaching technologies understand teaching (teaching-learning-evaluation) strategies aimed at achieving

educational objectives through the relevant educational content, based on theories of knowledge, communication, learning, determined by the nature of teaching-learning- the quality of the available resources, the educated subjects and the professional culture of the university teachers (Cojocaru M., Papuc L., 2005). Academic staff must provide the pedagogical segments necessary for effective instruction in the learning process that creates difficulties for students in assimilating and capitalizing on the sporting terms required in professional communication.

The development of English communication competence for students in the field of Sport will contribute to the successful professional integration of future athletes, teachers, coaches, etc. as social agents of change, moderators in professional communication interactions, if: linguistic and psycho-pedagogical activities of English communication competence training for students in Sport for professional communication; the historical evolution of the concept of communication skills in English has been studied; the theoretical approaches to the methodology of teaching-learning-English-language assessment in higher education were examined; the psycho-pedagogical premises of the professional motivations regarding the motivation for the knowledge of the sports lexics in English were identified; English communication competence was evaluated by students in Sport in terms of the use of the sporting lexicon.

Students' motivation is such an important factor in language learning that no teacher can ignore this essential aspect of the methodical and educational approach. Among the factors that favour language learning, the following may be mentioned: the ability to learn these languages, the student's intelligence, perseverance or motivation, the role of programs and textbooks, the role of the language teacher.

When examining language learning, we note that motivation is analyzed in different terms from other subjects. The student learns either from parents' desire to master a foreign language, or from the desire to achieve outstanding results. The purpose, however, remains the mastery of language as a means of communication in various situations of everyday life, learning which remains artificial anyway and to which the teacher has to apply his imprint of authenticity.

According to the theory of purposes of John Nicholls, Carol Dweck, Martin Covington, the three theoreticians-researchers focused on the goals / objectives pursued by individuals (Eng. goals] in situations of achievement / success. Targeting toward an objective rather than another is the motivational basis for achieving a certain goal (eg learning to get good marks for the exam or for improving the knowledge). Nicholls and Dweck argue that the first motivator of the achievement / success behaviour is the desire to demonstrate a high ability or to avoid negative skill assessments. Covington, on the other hand, states that individuals are motivated by the desire to maintain their sense of self-worth. (Elliot, A.J., Dweck, C.S., 2005)

Suggestions for reviewing teaching strategies to increase motivation for learning. The key / cross-cutting skills that are closely related to self-determination and mindset are: "learning to learn", "social and civic competences "and" the spirit of initiative and entrepreneurship". The skills that need to focus on student development are: self-knowledge (strengths, weaknesses, preferences, interests, expectations); identifying and setting your own goals (self-direction, personal choice); planning / prioritizing activities to achieve goals; self-regulation (affective, cognitive, behavioural); self-evaluation, monitoring of your own progress underlying the goals; the informational use of feedback (internal and external) in order to improve their own activities; assertiveness. The underlying skills of self-determination and development of growth mindset are: the setting of goals; self-monitoring; self-training; self-evaluation; self-administering / strengthening (to strengthen self-determination and competence behaviours); taking the decision; problem solving; self-representation / support (personal point of view, needs, interests, etc.).

English, in the sense of Rousseau, a precursor of modern education, must be received in different ways for reading and writing. In his opinion, "To learn English you have to teach it twice, once to read it a second time to write it" (Rousseau, J.-J. 1999). An important thesis of the pedagogy of global communication is thus anticipated. Didactics of foreign languages taught in the university system emphasizes the crystallization in the learner's awareness of the importance of acquiring the proposed code (English), the student being the "active partner" who can and must be part of the individual work plan. In this respect, the optimal organization of English classes in the form of a course or seminar determines the teacher to use a network with many communication channels to facilitate teacher-student and student-to-student pedagogical communication,

stimulating the active participation of all the members of the group in the efficient realization of the activity (Holec H., 2000). Using teaching-learning-assessment methodologies appropriate to English language teaching / English language communication, "student-centred", the teacher contributes to the formation of the future specialist. The qualities required by the modern language teacher can be developed in the English seminar. A model of the teacher relevant to students highlights his ability to show self-confidence, the knowledge he possesses and conveys, self-mastery, alterity, patience, spirit of co-operation, elasticity, fairness, modernity, and why not, sense of humour.

**Results.** Studying a professional language contributes to the development of professional abilities and attitudes by exploring the fields of other disciplines with diverse content. In the process of teaching / learning professional English, professional skill develops, and by reporting individual situations of learning, reception and production, typical of foreign languages, to those of the mother tongue, a unitary conception is created about the functioning language as a primary element of communication. In this respect, there is a need to develop a model for the English language communication skills of students in the field of physical culture (Cazacu T. & Frunze L., 2012).

It is worth noting that by learning a foreign language, students acquire knowledge which will enable them to understand and appreciate another general and professional culture, to broaden their career prospects.

### Conclusions

Forming English professional language to SUPES students helps in the knowledge and application of the sport-pedagogical language, in the formation of general and special cognitive skills, on the basis of which they will carry out the educational activity according to the requirements of the modernized curriculum for physical education.

The process of training and learning English for students in the field of physical culture gains in significance by constantly reporting to social practices and concrete contexts of exercising the acquired skills. Learning becomes a clear, targeted process that increases motivation for action. Competencies mobilize the student's previous acquisitions, providing concrete opportunities for achieving the educational process as a result of developing skills, which increases student motivation for learning English. Focusing on the final purchases of training offers freedom in capitalizing on different learning styles, strategies and modern technologies to prepare the future sporting specialist. English communication competence training for sports students is based on a system of educational, cultural and communicative-linguistic principles, with emphasis on the principle of creativity in communication, the logos being a creative act, but subject to grammatical rules. As we have outlined in this article, communication competence has over time in pedagogical doctrines different definitions, which shows us once again both the concern of researchers for the language of art and the possibility of this research to identify relevant views on the issue. Motivation is the competence for which every human being learns, spontaneously or through mimesis. Learning theories provide a synopsis of studies over time, but as a volitional act, learning English means combining the educator's will, his genetic premise, and the teacher's art of communicating, interacting, giving self-esteem and authenticity to the student. In a world where there is a tendency for man to be replaced by technology, it is precisely the vision of the system, of the educational act itself, of creativity as a common point between the actors of communication, making the difference. The acquisition by the sports students of the sports lexicon is a complex act, based on the concept of linguistic education in teaching-learning-assessment of communication competence in the context of phonetic, lexical, grammatical, stylistic communication - of the linguistic-communicative phenomenon in the specialized field of sport.

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## THE CORRELATION AND INTEGRATION OF CLIL INTO PE AND THE REFLECTION ON TEACHER TRAINING PROGRAMS

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### Abstract

Our starting point in this paper is based on the evidence that physical education (PE) correlates with CLIL and the level of EFL knowledge is significantly increased when classes of English and PE are combined in education. This opinion refers to primary, secondary and higher education. The findings obtained through multiple experiments which were carried out with students from 11 to 25 years of age were justified in the tests and observation charts which come as a result of psycholinguistic, neurolinguistic, pedagogical and medical scientific research.

CLIL – Content Language Integrated Learning is a foreign language teaching model that triggers the imagination, boosts brain, and works on making students interested in receiving and giving information based on the language content. More energy for getting involved in reasoning about problem-solving and prolonged motivation for tasks requiring brainwashing is major components of the method. A bilingual approach to teaching PE and learning a foreign language requires good initial teacher preparation.

The aim of the paper is to put stress on the advantages of a bilingual approach to teaching foreign languages and PE in correlation and to give guidelines for the additional pedagogic preparation of teachers.

**Key words:** CLIL, PE, correlation, bilingual approach

### Introduction

Successful society develops if their members are healthy, and health, among other things, fosters physical activity, which is good for the body as well as for the spirit of man. "In a healthy body, a healthy spirit is inhabited". It is the statement that leads the way toward a healthy nation with a good perspective for the development of society as a whole.

The relationship between physical activity and cognitive function (Etnier et al., 1997; Crabbe and Dishman 2004; Chang et al., 2012; Cox et al., 2016) in young students, teenagers and young adults shows positive correlation and responds to teaching demands for a successful, appropriate and expected knowledge of the foreign language. Based on the research executed by Helen O'Connor, there is evidence that physical activity (PA) positively affects cognitive function (CF), Helen O'Connor (2016). The study included a younger and slightly older population of 18 to 50 years of age. Modern society depends on the young population. They are the leaders and promoters of new, fresh ideas, views for success, reasoning that claims for better solutions to world problems, and self-conscious individuals who firmly defend their attitudes because they are self-confident and trustworthy.

Physical education (PE) in schools fosters physical activity which affects cognition and brain function becomes boosted by impulses that body in action sends in order to activate not just body but brain and spirit altogether. This paper has the goal to appoint to PE as an important factor in motivating the whole body to send feedback to cognitive processes of the students to inspire their desire to learn a foreign language with better interest and purpose.

Our intention is to advocate for teacher preparatory courses in the direction to develop teaching skills that will provide them to integrate CLIL into teaching PE. We strongly believe that teachers of foreign languages would gain better prospects in the organization of teaching classes if they take PE as the motivating tool that triggers brain and helps students learn and get successful knowledge.

This paper underlines the learning of English as a foreign and global language in the New Era.

### Principals of integration of CLIL teaching model in PE

There is an increasing interest in investigating the effects that physical activity produces on brain activity which is realized through cognitive function and knowledge of the subject matter. Cox, et al. (2016) investigated the relationship between physical activity and cognitive function in healthy young people. The result was that physical activity positively affects cognitive function. This positive correlation can be used to more adequately acquire knowledge of a foreign English language while at the same time the student is actively engaged in sports or in physical education classes in schools. Paterson and Warburton (2010), as well as Ryan et al. (2017), justified the hypothesis that regular physical activity supports the positive impact on the brain and cognitive function. "Effects of bodily activity on cognition have been studied for several decades and are meanwhile widely accepted (Colcombe & Kramer, 2003; Cox et al. 2015; Esteban-Cornejo, Tejero-Gonzalez, Sallis, & Veiga, 2015; Etner et al., 1997). However, the influence on the specific brain activation patterns is barely examined" (Alexandra Pantzar et al., 2018). Christopher Bergland (2014) in his article *Physical Activity Improves Cognitive Function* concludes that regular physical activity improves brain function throughout a lifespan. In Lyons Dylan's (2017) article we can read that learning a foreign language while at the same time a person is involved in physical exercise or activity, allows faster and more accurate and long-lasting knowledge of the foreign language. The experiment was executed with two groups of students. They were asked to learn and develop the English vocabulary. The first group was learning new English words while riding a stationary exercise bike, whereas the second group was staying still and learning vocabulary. It was proved that the first group of students, those who were riding a stationary exercise bike, learned the English words more precisely than the second group. When the experiment was repeated the same way after a period of time with the same two groups of students, it was proved that the active group retained the learned knowledge of English words while the other group was not successful in the same way.

"We are not suggesting that schools or teachers buy lots of bicycles," Gretchen Reynolds says. "A simpler take-home message may be that instruction should be flanked by physical activity. Sitting for hours and hours without moving is not the best way to learn", published in the Public Library of Science Journal (PLOSJ, 2017).

The conclusion reached by this research shows that physical activity attracts and strengthens one's mind, and cognitive function is stimulated. As a result, the student acquires, develops and establishes the knowledge of a foreign, English, language.

What kinds of neurological processes occur during the physical exercise and simultaneous teaching and learning English, is unknown, but neurologists and medical scientists think that physical activity changes the biology of the brain, or, it is about brain plasticity. This refers to a brain that becomes more "willing" to accept learning and ground knowledge of English. "Many past studies have shown that exercise prompts the release of multiple neurochemicals in the brain that help increase the number of new brain cells and the connections between neurons". These effects "improve the brain's plasticity and augment the ability to learn" (Reynolds, 2017).

The process of teaching a foreign language is based on a certain theory within which the methods and approaches are applied in active work with students. All three relevant parts – theory, method, approach - of the teaching process are dependent on the global teaching aim and the goal of education. However, all are subject to change.

The goals of education depend on the needs of the modern era and the guidelines for the educational development of the individual and the need for expanding knowledge, understanding the problems on a global scale and opening the perspective and ability of a man to make good solutions according to the circumstances in which they arise. It has long been rejected the idea of developing foreign language learning through repetition and deduction. Gathering information from different sources, of which the teacher is only one possible source, thinking about the issue leads to reasoning and making conclusions. Therefore, the cognitive theory becomes the leading one in planning and organizing the teaching process.

In a constant search for a foreign language teaching model, English as a global one, we come to the method for facilitating learning a foreign language in the last two decades under the name of CLIL: Content Language Integrated Learning. This model of teaching English is based on globally relevant contents and integrates one more subject matter apart from only English learning: PE. It is about physical education and sports that is integrated with English language learning class (Tomprowski et al., 2008:9). CLIL is a dual-focused educational approach in which an additional language is used for the learning and teaching of content and language with the objective of promoting both content and language mastery to predefined levels (Maljers, Marsh, Wolff, Genesee, Frigols Martín, Mehisto, 2010).

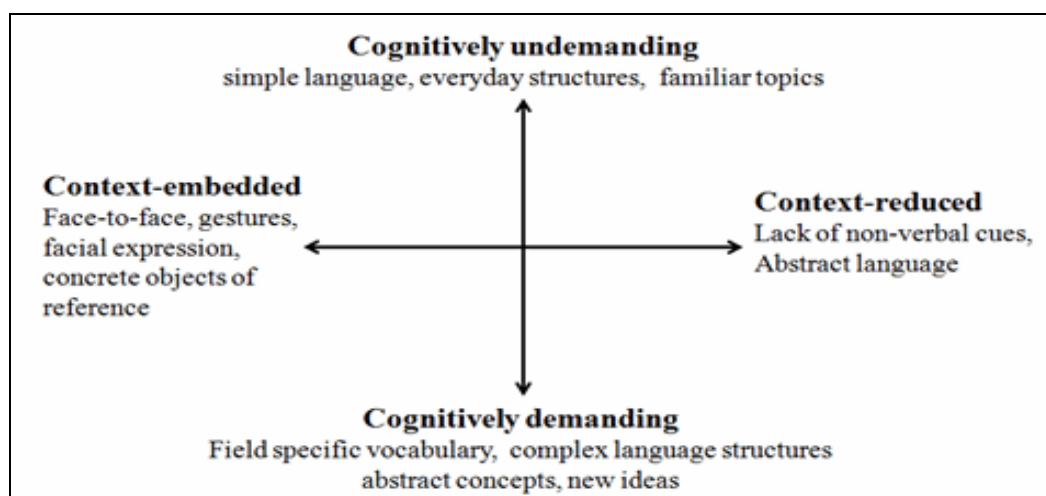


Fig. no. 1. The range of contextual support and degree of cognitive involvement in communicative activities  
(after Cummins & Swain, 1996)

Language learning is based on particular contents. We will appoint to four content fields within which learning activities with students are developed:

1. The first place goes to *tasks* through which students practice their language skills and abilities, think about received information and ideas, and solve tasks the way they know, based on experience.
2. *Target culture* makes a very important content to develop interesting themes and topics in order to introduce elements of the culture of the language students learn. The themes are introduced in language teaching at the intercultural level.
3. *Free conversation* classes when students improvise and get involved in various communication activities. This type of activity is very productive and gives freedom to students to apply the language and knowledge they learned and acquired through teaching classes.
4. *Everyday language* (common language) is the medium of conversation.

Jacobs Heidi (2013) in her book, *Mastering Global Literacy, Contemporary Perspective on Literacy*, distinguishes three major perspectives for getting knowledge: "learning, thinking and innovation skills". She says that *thinking* should be creative and use "systems thinking", whereas *skills* should be "associated with life and careers, such as designing, evaluating, and managing one's own work for ongoing improvement and adapting to change". Students improve their cognitive abilities which are manifested in problem-solving, decision-making, producing and performing the language, English as a foreign language, and strengthening memory.

The goal of this paper is to confirm our standpoint that learning English as a foreign language is much more naturally developed and the knowledge of English is successfully acquired when the language learning takes place in a relaxed atmosphere, under less stressed teaching conditions. Physical and language learning activity correlate positively and affect the success of English language learning. The correlation and integration



of the two subject matters – PE and EFL through CLIL model of teaching, have become popular and started spreading around world countries like Spain, Poland, Italy, China, in recent years.

The third element, which plays an important role in the integration of English language education into physical education, is the pedagogical education of English language and PE teachers.

#### **Further pedagogic preparatory teacher courses**

Prior to starting PE teaching through the CLIL program or before teaching English as a foreign language integrated into PE teaching, a detailed teacher training plan should be made for both school subjects. The cooperation between teachers of PE and English as a foreign language is inevitable and significant. An English teacher would be involved in planning the content that would be included at the time of the PE, while a PE teacher would develop a plan of activities and physical exercises that could contribute to better student productivity in learning a foreign language.

Preparation of teachers for PE teaching time with the acquisition of English language skills is an important link in the realization of CLIL teaching. The impression is that PE teachers receive greater responsibility for organizing PE time and that English language teachers have the task of helping school students and higher education students achieve the learning goals of a given language in a relaxed, physically active atmosphere. The teaching time that is designed in this way will help students to think about the problem and make conclusions on the spot. Students will gain benefits from the contribution that PE can make on the student's personal development in both activities: physical and mental. It is important to emphasize that through integrated teaching, CLIL in PE, the following goals are achieved: linguistic, cultural, cognitive and motor.

The preparatory course for English language teachers who participate in the CLIL program integrated into the PE must include the following elements: teaching theories with emphasis on cognitive functions, methods, and approaches, techniques of work with pupils that allow applicability and the realization of teaching methods within a certain theory. For the teachers of PE and sports, it will be important to appoint to various physical activities and sports and their reflection on the cognitive abilities and functions that develop as they are stimulated by physical activity through the chosen sport.

"The World English Project" (Graddol, 2006) is about integrating CLIL in different school subjects, as is the matter of teaching PE and English as a foreign language during the same teaching time. The project is concerned with the idea that teachers of any subject should develop English language skill and the teaching class would be bilingually based. The idea of teaching school subjects by integration of CLIL and cooperation with English and PE teacher is part of globalization which is spreading across the planet Earth. "If this project succeeds, it could generate over two billion new speakers of English within a decade"(Graddol, 2006:96-97). "For a start", Graddol suggests, that "global English may mean the end of 'English as a Foreign Language' and that the language will shift over to becoming a basic skill" (Hillyard, 2011: 2). In primary and secondary schools some or most of the subjects will be taught in English. This phase is seen as the approach to the bilingual nation: the language of origin combined in teaching classes with English knowledge to use it fluently in various English proficient situations. Students at universities should enroll with excellent knowledge of English or at least such knowledge that will allow them to use English literature for the purpose of studies and future profession and career.

Serbia is one among the countries in Europe that have introduced CLIL into the primary and secondary school curriculum. Some school subjects have teaching programs where CLIL is integrated with mathematics, geography, history or there is another chosen subject by the School Board of teachers. This type of teaching could be classified as a monolingual model of CLIL. Learners are non-English speakers who are educated in their native country, and few subjects are teaching-based on CLIL model. At Serbian universities, some departments have developed a CLIL integrated model of teaching throughout four years of studying program. This type of special program with integrated CLIL in all courses can be referred to as bilingual. Our conclusion with regard to "The World English Project" takes into account the global urge to make world citizens bilingual with English as one of the world languages. Whether such an effort is justified or not, is another issue that will not be discussed in this article.

The CLIL model of integrated teaching of English as a foreign language and some other subject in the education curriculum poses a different role to an English language teacher in the process of teaching. This

different role of English language teachers is reflected, in the first place, in the fact that English becomes a means of teaching rather than the subject of teaching as it was in the EFL or ESL teaching model in earlier decades. The teacher of PE with CLIL integrated program of teaching English, regard the language as a tool in teaching a PE class. Another important element is the cooperation of English and PE teacher. Without mutual cooperation, the teaching of physical education and English language teaching cannot be successfully realized.

The complexity of the role of English language teachers inevitably leads to changes in the subject and the organization of methodological education of teachers for teaching in the CLIL model. Hillyard (2011:5) states that teachers involved in the CLIL model of teaching need three different abilities to develop: "target language ability, content knowledge, and CLIL methodology".

*Target language* ability is understood as the knowledge of "common" English language with authentic phrases and language manipulations used in "free" conversation and in discussions in which students show abilities and skills to produce language functions in real-life situations. The language should be appropriate to the language content.

*Content knowledge* refers to syllable contents and skills developed on the cognitive level. *CLIL methodology* has the goal to teach students to respond to the content of the teaching class, their output which shows their thinking skills. It is about thinking and doing.

Teacher training course for teaching through CLIL model requires certain language skills and abilities, professional education as regards a commitment to cognitive, social and affective personal development that will be acquired during the teaching program. It is expected that teachers of CLIL develop and expand abilities to explore, define and articulate their pedagogical and content competencies. They must be informed about the developmental needs according to CEFR (Common European Framework of Reference). They must know principals of teaching and learning techniques and must be able to take and manage multiple teaching roles and be capable of helping students receive knowledge according to the teaching content. CLIL teachers develop, model and implement strategies to support language learning in content classes.

## Conclusion

The concept of CLIL integration into PE and ELT requires knowledge, skills, and abilities for the assessment of the program into classroom teaching. The steps that teachers who are involved in the teaching must pass are multiple and demanding. Detailed design of the initial preparatory course for teachers of English and PE has grounds in:

1. Globalization as the general world process and the role of English as the global language.
2. The second field to cover is CLIL: the meaning, the application, the development, and the expectancies from the model of teaching in real-life language learning situations.
3. Comparative studies of ELT models of teaching have the importance of planning and organizing the teaching of English as a foreign language.

Besides the core areas to study during the preparatory teacher course, minor but equally important issues to study are

1. developing the ability to cooperate with co-teachers and teachers of English as a foreign language;
2. learning to become active in social life and inspire students to get involved in social activities;
3. working on self-improvement and how to develop self-criticism to one's work and mutual support in working with students;
4. making good professional relationships with colleagues and students which they develop and improve through time;
5. networking programs and administer them through a training course.

We believe that the objectives of world achievements through globalization that was forced upon us determine the basis for the adoption of a program of global education and future demands of world society in possession of knowledge that will help in the realization of global tasks and CLIL as a part of a global program. Physical activity stimulates cognitive function and thus opens the way for better results in learning English. Therefore, we think it is excellent and adequately fits the concept of integrating CLIL into PE teaching. We

believe that there should be more research as regards the methodological approach of learning English as a global language through CLIL model of teaching English and PE. At universities in Serbia, this kind of bilingual instruction would give, we believe, good results and enable the greater presence of Serbian ideas around the world.

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## ADVANTAGES AND DISADVANTAGES OF DIFFERENT TYPES OF TENNIS COURTS

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### Abstract

The paper reviews different types of tennis courts and how those can influence the playing style of the game. In the first section of the text, the author classifies and describes the differences between tennis courts. The most important difference is made by the surface; there are four types of surfaces, so there are four types of courts. Also, differences are made by the dimensions or by the space where the court is placed (indoor or outdoor). This text reviews each type.

Additionally, the text explores how each type influence the playing style of the game according to the equipment players are using. The author focuses on direct observation of matches played on each and every type of courts.

The paper seek to answer the question: Which are advantages and disadvantages of playing tennis on different types of courts? The author finds out that the most used type is the hart court, especially in U.S.A., even if the grass court is the fastest type of courts.

It is hoped this study will inform people that are not athletes about differences between tennis courts in case of playing this sport as a hobby.

**Keywords:** tennis courts, surfaces, player, equipment.

### Introduction

A court is an area drawn out on the ground that is used for playing sports, according to Cambridge Dictionary. A tennis court is a compact, solid, rectangular surface with a low net stretched across the center. The same surface is used to play doubles or singles matches. There are a lot of surfaces that can be used to create a tennis court, each with different characteristics which influence the game.



Fig.1. Tennis Court diagram

International Tennis Federation (ITF) which is the governing body of the game of tennis and its duties and responsibilities include protecting the integrity of the game, ITF Rules of Tennis (2019), which include defining and regulating the dimensions of a tennis court, so all of the news concerning dimensions, permanent fixtures, balls or score are written down in the annual "Rules of Tennis" document. According to "Rules of Tennis" published in 2019, the court is a rectangle, 23.77m long and 8,23m wide (for singles matches); for doubles matches, the court should be 10,97m wide.

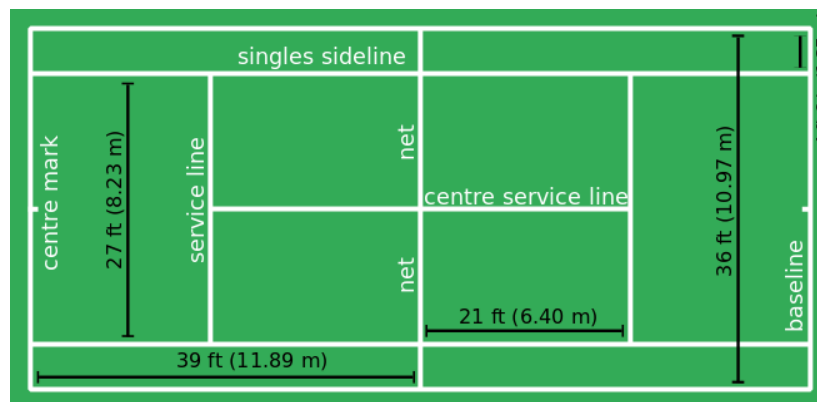


Fig. 2. Tennis court dimensions

The service line is 6.40m from the net, which is 1.07m high at the posts and 0,91m high in the center; it is, also, 0,91m outside the doubles court on each side or, for a singles net, 0,91m outside the singles court on each side. Additional clear space around the court is needed in order for players to reach overrun balls for a total of 18m wide and 37m long, ITF Rules of Tennis (2019).

There are allowed smaller courts with slower red, orange and green balls for children. The reason is simple: it gives children more time and control in serving. The ITF has mandated that official competition for children under 10 years should be played on “Orange” courts 18m long by 6.4m wide. For children under 8, the competition should be played on “Red” courts. The net is always 0.8 m high in the center.

The most important difference between the courts is made by the surfaces. We identify four main types of courts depending on the materials used for the court surface: clay courts, hard courts, grass courts and carpet courts. The International Tennis Federation has also a list of different surfaces and it classifies surfaces into one of five pace settings, as we will show next:

- Category 1: slow
- Category 2: medium-slow
- Category 3: medium
- Category 4: medium-fast
- Category 5: fast

### Clay courts

Clay courts are made of crushed shale, stone or brick. This type of court slows down the ball and produce a high bounce in comparison to grass or hard courts, that is why the clay court takes away many of the advantages of big serves, which makes it hard for serve-based players to dominate on the surface. It is know that clay courts are cheaper to construct, but it takes more money to maintain. Clay courts need to be rolled to preserve flatness. The clay's water content must be balanced; green clay courts generally require the courts to be sloped to allow water run-off. Clay courts are more popular in Europe and Latin America

The French Open is the only Grand Slam tournament that is played on this type of court and that happen since 1981. US Open, also, used clay court, but for two years, from 1975 to 1977. One of the champions that played on this type of court is Simona Halep. We could observe that she used special shoes with sole made of rubber.



Fig. 3. Clay court

### Grass courts

This type of court is the fastest type in common use. Bounces depend on how healthy the grass is, how recently it has been mowed, and the wear and tear of recent play. The serve plays a more important role than on other surfaces. Grass courts tend to support serve-and-volley tennis players. Also, grass courts are more traditional than the others types. It is known that this kind of court costs a lot of money to maintain. Grass courts are very popular in U.K., but there are a lot of private grass courts in the U.S.A.

Wimbledon, the oldest tennis tournament, is played on grass court. One of the most famous champions who played on this type of court is Serena Williams. We observed that she used special shoes that have ribbed sole.



Fig. 4. Grass court

### Hard courts

Hard courts are made of uniform rigid material, often covered with an acrylic surface layer. This surface is rare now. These courts tend to play medium-fast to fast because there is little energy absorption by the court, like in grass courts, Judy Murray (2019). Flat balls are favored on hard courts because of the extremely quick play style. This type of court is known for the low cost of construction and maintenance, but for the last one there are a lot of methods which are commonly used to keep these facilities in top condition. Those methods include brushing and washing with a chemical solution. Also, there are a lot of treatments that is must to be applied for reducing the friction.

US Open and Australian Open currently use hard courts, but according to the most important tournaments it seems to be the predominant surface type used on the professional tour, 10-S Tennis Supply (2019). Mike Bryan is one of the winners of US Open. In his game, we could observe that he used special shoes with a high sole, cushioning in the heel and maybe, he added an additional sole on the inside of the shoes.



Fig. 5. Hard court

### Carpet courts

The International Tennis Federation defines carpet courts as a "textile surface of woven or non-woven nylon, or a polymeric or rubber material, typically supplied in rolls or sheets" and as a removable surface, ITF Rules of Tennis (2019). This is the second fastest type of court, after the grass court. The maintenance is pretty easy and costs are not that high compared to grass courts. This type of court is used especially for indoor courts.

Carpet courts are only used nowadays in Women's Tennis Association tournament in Quebec City. In 2009, Association of Tennis Professionals disallowed the using of carpet courts to reduce injuries. Victoria Fyodorovna Azarenka is one of the champions that played on this type of court. In her game, we saw that she used shoes that have a low sole and cushioning in the heel.



Fig. 6. Carpet court



## Conclusion

### 1. Type Advantages

#### 1.1. *Clay*

- high bounce
- big serves

#### 1.2. *Grass*

- fast
- physically forgiving

#### 1.3. *Hard*

- greater consistency of bounce

#### 1.4. *Carpet*

- low bounce

### 2. Type Disadvantages

#### 2.1. *Clay*

- heavily support baseline players

#### 2.2. *Grass*

- bounces depend on how healthy the grass is
- support serve-and-volley tennis players

#### 2.3. *Hard*

- friction

#### 2.4. *Carpet*

- high risk of injuries

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