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TRAINING THE GENERAL, SPECIAL AND PSYCHOMOTRIC COGNITIVE COMPETENCES IN PHYSICAL EDUCATION LESSONS THROUGH THE NON-STANDARD MEANS OF FUNCTIONAL MUSIC AND TRAINING IN CIRCUIT

***Nastas Natalia*[1],**
***Filipov Valeriu*[2],**
[1]*The State University of Physical Education and Sport, Chisinau, Republic of Moldova*
[2]*Theoretical High School "Alecu Russo", Cojusna, Straseni, Republic of Moldova*

Abstract. *Physical education is a school discipline which, through its educational potential with its own pedagogical systems, must contribute, to an adequate extent, to the formation of general and special competencies, psychometric qualities and value orientations of the pupil's personality towards its integration into the complex activities of contemporary society. In this context, physical education must be interpreted as a success in the socio-professional integration of the pupil, who engages his whole personality through biological and psychological factors, accompanied by pedagogical factors, innovative teaching-learning technologies, evaluation and formative self-evaluation of pupils.*
Keywords: *physical education, general and special competences training, non-standard means, circuit training, functional music.*

Introduction. Appropriate use of pedagogical and psychological factors occupies a central place in developing strategies to optimize the educational process.

Physical education is a school discipline which, through its educational potential with its own pedagogical systems, must contribute, to an adequate extent, to the formation of general and special competencies, psychometric qualities and value orientations of the pupil's personality towards its integration into the complex activities of contemporary society. In this context, physical education must be interpreted as a success in the socio-professional integration of the pupil, who engages his whole personality through biological and psychological factors, accompanied by pedagogical factors, innovative teaching-learning technologies, evaluation and formative self-evaluation of pupils.

School success also involves intensifying the instructive-educational process, which consists in the adequate use of pedagogical and psychological factors, where the school aptitude as integrative psychophysiological, cognitive interest, affections and motivation have an important role in the elaboration of strategies for conducting the educational process, focusing on the criteria for optimizing-intensifying of studies [7].

In the opinion of several authors I.A. Gurvici, 1984, V.Simionescu, 1987 etc., [5,3] the optimization of the instructive-educational process of the school physical education lesson, from the point of view of the psychological and pedagogical factors, can be achieved with the application of the sports nonstandard equipment, methods of teaching through circuit training, non-traditional affective-instructive forms (functional music).

The above presented and the opportunity to increase the effectiveness of the teaching-educational process in the "Physical Education" discipline, as well as the lack of researches aimed at intensifying it by applying the methodology aimed to the concomitant use of the non-standard equipment, the functional music and the "circuit training" are the main reason for our research.

Research hypothesis. It has been assumed that the design, application and use of the physical education curriculum based on the use of sports equipment and functional music in circuit training during the lessons will positively influence the increase of the effectiveness of the instructive-educational process, which will positively affect the level of physical and functional training of pupils.

The purpose of the research. It is the perfecting of the instructive-educational process in

physical education by the application of non-standard equipment and functional music in the lessons organized in the form of circuit training. The circuit of physical education lessons is a success, while at the same time bringing an essential contribution to the continuous improvement in the process of physical education.

Research methods. In order to achieve the research objectives, the following research methods were used: 1. Theoretical analysis and generalization of literature data.2. Studying working documentation: programs, plans. 3. Comparative method. 4. Method of questioning (inquiry, interview). 5. Method of pedagogical observation. 6. Timing.

The circuit process has particular effects on morpho-functional indexes and motor qualities. L. Matveev and A. Novicov demonstrate that training in the circuit can not only be reduced to a methodical method, but also includes rigorously standard exercises (in continuous effort and in intervals).

Filipov V. (2004) points out that the activity in the circuit aims at uniformly demanding all muscle groups and the cardiovascular system. It is based on differentiated work, on homogeneous groups or on individualized work. Circuits are classified into several types determined by the duration of breaks, volume and intensity of physical effort, organizational forms [2].

According to the number of exercises we distinguish:

- Very short circuits, consisting of 4-5 exercises;
- Average circuits, consisting of 6-8 exercises;
- Long circuits, consisting of 9-12 exercises;

2. Depending on the type of exercises and the degree of solicitation of the organism we distinguish:

- Easy exercise circuit that uses the own body weight or weight between 10-20% of the maximum possibilities;
- Medium circuit consisting of exercises performed with weights representing 30-40% of the maximum possibilities.
- A heavy circuit formed by exercises exceeding 50% of the maximum possibilities.

Tibacu V. and Gurevici I. A. [4,5] highlight the following variants of circuits:

- Circuit according to the method of long-lasting exercise (to educate the general resistance);
- Circuit with incomplete intervals (to educate the force-speed resistance);
- Circuit with normal intervals that allows the body to return completely (to educate force and speed).

The use of the circuits is mainly based on the motive quality that is to be developed.

Filipov V. (2004), J.C. Kodjaspirov (1987) confirm through the experiments conducted over the years that the physical education lessons, accompanied by functional music, contribute to increasing interest, tightening the nervous system and removing monotonism , to the motivation of students to practice physical exercises [2, 6].

Researches in the field have shown that the most widely used musical passages used during the lesson can last from 10 to 20 minutes, because musical accompaniment should not exceed 30-40% of the actual time of the lesson.

The analysis of the specialized literature shows that these means are not efficiently structured according to psychophysiological and psychomotoric aspects to be applied in the instructive-educational process to the physical education lessons in lyceum ,gymnasium.

The above-mentioned ones allow us to conclude that the "circuit training" method with the application of nonstandard sporting equipment and functional music is one of the most suitable for ensuring the quality of the instructive-educational process at the stage of improving psychomotor skills, which creates conditions for activation through:

- motivation of each student for independent activity within the lesson, which is manifested as a result of the awareness activities (at the level of the formed skills);
- the joint work of all pupils at the level of over-

all coordination of all activities in the execution of each task, which requires a high degree of concentration of attention, precision of execution, and intensification of teacher-student relationships.

Analysing the data from the literature and the surveys conducted (559 respondents: 115 teachers, 254 students, 190 parents - over 30 questions), we can conclude: physical education teachers rarely use non-standard equipment and functional music in physical education lessons , because 65% of the sports halls are not equipped with the necessary equipment [2].

In order to ensure the formative-educational aspects of the lessons developed in the form of circuit training with the application of non-standard equipment and functional music, 76 units (nominations) of them were implemented, distributed according to the curricular themes referring to the teaching of physical education in school.

In order to validate the methodology for the use of non-standard means and functional music in the lessons developed by the circuit training method elaborated during one year of study, a formative pedagogical experiment was carried out in grades VIII-A, B.

The contingent of pupils in 8th grade A was the experimental group, and the 8th grade B the control group. (Cojusna, Straseni district)

Students in the control classes followed the studies according to the current program and the traditional methodology, while the students in the experimental classes followed the elaborated analytical programs, having an equal number of hours throughout the study year.

The curricular curriculum proposes a judicious structure of educational objectives, competences, sub-competences and educational content, which assure the valorisation of the educational, cognitive, formative, etc. of physical education by applying nonstandard equipment and functional music through the circuit training method in the system of lessons (athletics, volleyball, basketball, gymnastics).

At the initial stage (the beginning of the academic year), the intermediate (end of the first semester) and the final one (end of the study year) tests were carried out in order to assess the physical and functional training (14 parameters) of the pupils. In total, the control and experimental groups consisted of 33 pupils: 14 girls in the experimental group and 19 girls in the control group.

The analysis of the level of the test parameters demonstrates that at the initial stage the pupils in both groups (control and experimental) have the same degree of training, the significance threshold being $P > 0.05$.

Comparing the results of the 14 samples that characterize the general physical training (Table 1) of the test subjects at the final stage, it becomes evident that the experimental group showed increased results in all samples compared to the control group. They differ substantially, which is confirmed by the significance threshold ($P < 0.001$, $P < 0.05$) for all tested parameters. Data from final testing to general physical training shows that the methodology developed and applied in the pedagogical experiment is efficient.

Concluding the previously mentioned on the intensification of the teaching-educational process of instruction the physical education discipline, we can say that the respective effects can be obtained as a result of applying the appropriate methodology and didactic strategies that imply the application of nonstandard equipment and functional music in the lessons conducted by circuit training.

Conclusions

The results of the analysis and generalization of the theory and practice of the teaching-educational process of the discipline "Physical Education" show that, at present, there is a lack of a well-conceived conception, whose methodological orientation would represent the imitation of the basic factors of school, pedagogical and psychological success, consider the integrative psychophysiological attitude of the preadolescent pupil personality and the didactic strategies ap-

Table 1. Level of general physical training of pupils of the control and experimental groups (C) and (E) in the pedagogical experiment (girls)

#	Tested parameters	Et	Initial			Intermediary			Final		
		Gr	X_1±m	t_1	P_1	X_2±m	t_2	P_2	X_3±m	t_3	P_3
1	Running 30m (sec)	C	6,0±0,03	6,66	<0,001	5,8±0,03	3,33	<0,01	5,6±0,03	6,66	<0,001
		E	5,8±0,01			5,7±0,01			5,4±0,01		
2	Long jump from standstill (cm)	C	139,0±0,41	0,32	>0,05	148,0 ±0,46	5,96	<0,001	158,0±0,40	5,85	<0,001
		E	138,0±0,06			157,0 ±1,44			169,0±1,84		
3	High jump from standstill (cm)	C	24,0± 0,23	0,00	>0,05	35,0 ±0,04	0,00	>0,05	38,5 ±0,26	0,00	>0,05
		E	24,0 ±0,26			35,0 ±0,44			38,5± 0,44		
4	Dorsal lying trunk lift, 30 (times)	C	15,0 ±0,27	2,43	<0,05	18,0 ±0,27	2,44	<0,05	20,0 ±0,46	2,44	<0,05
		E	14,0 ±0,31			17,0 ±0,31			21,0 ±0,31		
5	Throwing the medicine ball with both hands (cm)	C	398,0 ±1,83	1,82	>0,05	500,0 ±2,01	1,37	>0,05	564,0± 2,88	7,35	<0.01
		E	410,0 ±6,34			509,0 ±6,17			614,0± 6,17		
6	Throwing the oina ball (m)	C	22,0 ±0,37	2,04	>0,05	23,5 ±0,27	5,40	<0,001	24,5± 0,27	5,40	<0,001
		E	23,0 ±0,35			25,5 ±0,25			26,5 ±0,25		
7	Push-upps (times)	C	13,0 0,28	2,04	>0,05	14,0 ±0,18	5,70	<0,001	16,0 ±0,18	5,55	<0,001
		E	14,0± 0,32			16,0± 0,31			18,0 ±0,31		
8	Flexibility (cm)	C	6,0 ±0,18	0,0	>0,05	7,0±0,18	4,16	<0,001	9,0 ±0,18	8,00	<0,001
		E	6,0± 0,17			8,0 ±0,17			10,0 ±0,17		
9	Cuper Test (m)	C	945,0 ±4,54	2,70	<0,05	1000,0 ±4,53	7,35	<0,001	1138,0 ±5,61	3,1	<0,001
		E	960,0 ±3,19			1036,0 ±1,00			1160 ±5,33		
10	Running 60m (sec)	C	10,9 ±0,03	2,00	>0,05	10,8 ±0,04	2,04	<0,05	10,6 ±0,003	2,30	<0,05
		E	10,8 ±0,04			10,6 ±0,09			10,3 ±0,13		
11	Momentum High jump (cm)	C	100,0 ±0,46	4,68	<0,05	105,0 ±0,04	11,4	<0,001	108,0 ±0,41	6,25	<0,001
		E	105,0 ±0,44			110,0 ±0,44			112,0± 0,49		
12	Momentum Long jump (cm)	C	320,0 ±1,83	0,37	>0,05	329,0 ±1,83	0,37	>0,05	335,0 ±1,83	8,33	<0,001
		E	321,0 ±2,01			330,0 ±2,01			355,0 ±1,57		
13	Right hand dynamometer (kg)	C	30,0 ±0,58	1,35	>0,05	31,0 ±0,59	1,31	>0,05	32,0 ±0,18	3,92	<0,001
		E	31,0 ±0,46			32,0 ±0,40			34,0 ±0,48		
14	Left hand dynamometer (kg)	C	27,0 ±0,18	1,58	>0,05	29,0 ±0,14	0,81	>0,05	30,0 ±0,18	0,00	>0,05
		E	28,0 ±0,61			28,5± 0,60			30,0 ±0,78		

propriate to his motivations

The examination of the aspects regarding the intensification of the teaching-educational process of the physical education proves that the respective effects can be obtained based on the didactic strategies and the corresponding methodology aiming at the use of non-standard equipment and functional music in the lessons organized and conducted through circuit training.

The evaluation at the preliminary stage of the research, the level of psychomotor training and psychophysiological development of the students at the gymnasium stage revealed indices with insignificant dynamics at the end of the semester and the school year through a progression predominated by the factors of natural development towards the pedagogical ones, which reveals the optimal unexploration of the teaching-educational process of the discipline "Physical Education".

As a result of the theoretical approaches, the analysis and the generalization of the advanced experience in the field, the educational contents, the methodology and the forms of organizing the didactic process, the exercising regimes, the evaluation and the self-evaluation, which correspond to the psychological and psychomotor particularities, the motivational structures of the secondary pupils were determined. Didactic design refers to the process of phased training based on the conceptual orientation of "physical training" supported by the efficiency of using non-standard equipment and functional music in didactic activity.

Methodology developed, the modelling of its contents through the circuit training demonstrates the effectiveness of the morpho-functional development, the psychomotor and intellectual training of the pupils by differentiated and individualized approach, increases the level of rationality of the exercises and the profitability of the equipment, positively influencing the vital functions of the body, favourable to increase the degree of complexity of motor tasks.

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