

**DETERMINATION OF THE CORRELATION DEPENDENCE OF  
MASTERING THE BASIC ELEMENTS OF RHYTHMIC GYMNASTICS ON  
THE USE OF THE CLASSICAL EXERCISE BY GIRLS 5-6 YEARS OLD**

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**Purpose:** to establish the correlation between the basic elements of rhythmic gymnastics and special exercises of classical exercise.

**Material and methods:** the research was carried out on the basis of the Complex Children's Sports School No.1, Kyivskyi District (Kharkov) among girls 5-6 years old, going in for rhythmic gymnastics. The experiment involved 60 young athletes. 3 choreographers and 4 rhythmic gymnastics trainers were involved to establish the correlation dependence. Due to the fact that the research was carried out in groups of initial training of the second year of study, a 10-point assessment scale was applied. At the beginning of the study, the influence of classical exercise on the assimilation of the basic elements of rhythmic gymnastics was determined. In the end, a correlation was established between the elements of rhythmic gymnastics and special exercises of the classical exercise.

**Results:** in the process of using special exercises of classical exercise, the level of fulfillment of the basic elements of rhythmic gymnastics increased, such as: jump "Cossack" ( $t = 2,12$ ;  $p < 0,05$ ), balance "forward" ( $t = 3,57$ ;  $p < 0,001$ ), balance

"attitude" ( $t = 2,68$ ;  $p < 0,01$ ), turn "passé" ( $t = 2,21$ ;  $p < 0,05$ ), "wheel" ( $t = 1,72$ ;  $p > 0,05$ ).

**Conclusions:** as a result of the research, the correlation relationship of the basic elements of rhythmic gymnastics with special exercises of classical exercise was determined.

**Keywords:** rhythmic gymnastics, basic elements, classic exercise, correlation.

## **Introduction**

Modern types and trends of choreography are becoming extremely popular among children and youth [5]. The motor and physical development of 5-6 years old girls engaged in rhythmic gymnastics are especially relevant. Therefore, there is a need to form the basis of the culture of movements in the training process of young athletes.

The formation of the basics of movement culture of 3-6 years old children due to their propensity for their susceptibility to different structures of motor activity from its qualitative and quantitative characteristics, is naturally considered the establishment of the structure of somatotype features of the contingent and the establishment of all its "marginal" groups. In this case, the culture of movement will be determined by the technique of mastered movements available for this age [11].

These days in the world of rhythmic gymnastics, there have been changes in the rules of judging for the next Olympic cycle (2022-2024). According to the basic requirements in individual exercises, a gymnast must perform only the elements that she can perform safely and with a high degree of aesthetic and technical training. Very poorly executed elements will not be assessed by the Judges Difficulty (D) and will be penalized by a penalty by the Judges Execution (E) [10].

Thus, for better mastering of the basic elements of rhythmic gymnastics, you need to pay special attention to learning special exercises of classical exercise for 5-6 years girls.

According to I. O. Yeltsova, the exercise of classical dance is an ideal and universal system of exercises and combinations, created in the process of long choreographic experience, the elements of which, after natural selection, became part of the exercise, as, indeed, necessary exercises that develop and train. The muscles of the legs, torso, arms and head are comprehensively developed in the exercise, the coordination of movements is improved.

In this regard, the search for the most effective means of choreography for the training of young athletes in rhythmic gymnastics is being especially relevant.

**Aim of the research:** to establish the correlation between the basic elements of rhythmic gymnastics and the special exercises of classical exercise.

### **Material and Methods of research**

The following research methods have been used in the work: theoretical analysis and generalization of scientific and methodological literature, pedagogical observation, pedagogical experiment and methods of mathematical statistics.

The research has been carried out on the basis of the Complex Children's Sports School No.1, Kyivskyi District (Kharkiv) among 5-6 years old girls, who are going in for rhythmic gymnastics. The experiment involved 60 young athletes whose parents consented to their participation. 3 choreographers and 4 rhythmic gymnastics trainers have been involved to establish the correlation dependence. Due to the fact that the research was carried out in groups of initial training of the second year of study, a 10-point assessment scale was applied. At the beginning of the study, the influence of classical exercise on the assimilation of basic elements of rhythmic gymnastics has been determined. In the end, a correlation has been established between the elements of rhythmic gymnastics and the special exercises of classical exercise.

*Relationship of research with scientific or practical tasks, plans, programs.*  
The research has been carried out in accordance with the initiative theme of the scientific research of the Department of Gymnastics, Dance Sports and Choreography of KSAPC: Theoretical and methodological foundations of the backbone components

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### **Results of the research**

The experience, which has been conducted for two months, aimed to determine the impact of classical exercise on the mastery of basic elements of rhythmic gymnastics. For this purpose preliminary and final evaluations of performance of both elements of rhythmic gymnastics and the exercises of classical exercise have been carried out.

The obtained results and the analysis carried out on their basis, which are presented in table 1, indicate the certain choice of the special exercises of classical exercise for mastering the basic elements of rhythmic gymnastics. The most significant effect ( $t = 3,57$ ;  $p < 0,001$ ) from the usage of these exercises has been obtained when performing such an element as balance "forward". This indicates that the set of involved training exercises has contributed to the development of strength of the muscles of the shoulder girdle and leg muscles, elasticity of ligaments and stability in girls.

To a less extent, but the results of the performance of the balance "attitude" ( $t = 2,68$ ;  $p < 0,01$ ), the turn "passé" ( $t = 2,21$ ;  $p < 0,05$ ) and the jump "Cossack" have been improved ( $t = 2,12$ ,  $p < 0,05$ ). This is due to the fact that during the training process, young athletes have not sufficiently mastered the basic movements, which were studied at the machine.

It should be noted that the exercises used in their statics and dynamics are as close as possible to the basic elements of rhythmic gymnastics that are being studied. Thus, it is easier for 5-6 years old girls to master the curriculum in rhythmic gymnastics due to such exercises of classical dance. However, the performance of such an element as "wheel" ( $t=1,72$ ;  $p>0,05$ ) was not significantly affected by the usage of the special exercises, which requires their adjustment and further application.

To identify the effectiveness of the usage of the special exercises of classical exercise to master the basic elements of rhythmic gymnastics, a correlation analysis has been conducted.

Table 1

**Statistical indicators of influence of special exercises on mastering of basic elements of rhythmic gymnastics (n = 60), points**

Element of rhythmic gymnastics	Special exercises of classical exercise	Scores		$t_e$	$p$
		previous $\bar{X} \pm m$ , points	final $\bar{X} \pm m$ , points		
Jump "Cossack"	Relevé Demi-plié Grand battement Sauté Assemble	5,98±0,19	6,63±0,24	2,12	<0,05
Balance "forward"	Hand positions (I, III, II) Leg positions (VI, I, III, V) Battement tendu Battement tendu jete Grand battement jete Adajio	5,63±0,20	6,80±0,26	3,57	<0,001
Balance "attitude"	Hand positions (I, III, II) Leg positions (VI, I, III, V) Battement tendu Battement fondu Grand battement jete Relevé	5,68±0,18	6,55±0,27	2,68	<0,01
Turn "passé"	Hand positions (I, III, II) Leg positions (I, IV, VI) I, II, III port de bras Aplomb Keeping the position of one leg in the "passé" Keeping the position of one leg in the "passé" on the relevé	5,95±0,18	6,63±0,25	2,21	<0,05
"Wheel"	Motor actions near the machine Adajio Grand battement jete Hand holding (II, III positions)	5,75±0,16	6,22±0,22	1,72	>0,05

According to the obtained results, the exercises used in mastering such an element as the jump "Cossack" have a positive effect, as the correlation coefficient is at the level of the average ( $r = 0,51-0,60$ ). An integral part of this element is a special exercise "grand battement" ( $r = 60$ ), "big throw", swing at  $90^\circ$  and above the outstretched leg in the desired direction. This exercise develops leg strength, sharpness of foot movement, step [9] (Table 2).

*Table 2*

**Matrix of correlation dependence of special exercises of classical exercise and performance of the basic element of rhythmic gymnastics jump "Cossack"**

N <sup>o</sup> i/o	Special exercises of classical exercise	Correlation coefficient
1	Relevé	0,34
2	Demi-plié	0,43
3	Grand battement	0,60
4	Sauté	0,53
5	Assemble	0,51

Performing the element of balance "forward" includes various technical components: raising the leg by  $90^\circ$ , holding the pose on the "relevé", changing the position of the body and hand position, so the most effective is a special exercise - "adajio" ( $r = 0,63$ ) and "grand battement jete" (Table 3). Also for balance, no less important is the exercise for training hand position ( $r = 0,49$ ), which stabilizes the position of the body in space.

*Table 3*

**Matrix of correlation dependence of special exercises of classical exercise and performance of the basic element of rhythmic gymnastics balance "forward"**

N <sup>o</sup> i/o	Special exercises of classical exercise	Correlation coefficient
1	Hand positions (I, III, II)	0,49
2	Leg positions (VI, I, III, V)	0,32
3	Battement tendu	0,36
4	Battement tendu jete	0,42
5	Grand battement jete	0,57
6	Adajio	0,63

The exercises used to perform the basic element of rhythmic gymnastics - the balance "attitude", provide the specifics of the formation of movements as in dance

sports. Particular attention should be paid during the training of young athletes to the basic movements of classical dance in the reverse positions of the legs, body position and keeping the free leg. All the above exercises (Table 4) are of great importance for creating individual components of the basic element, especially "grand battement jete" ( $r = 0,68$ ) and "battement fondu" ( $r = 0,58$ ).

*Table 4*

**Matrix of correlation dependence of special exercises of classical exercise and performance of the basic element of rhythmic gymnastics balance "attitude"**

N <sup>o</sup> i/o	Special exercises of classical exercise	Correlation coefficient
1	Hand positions (I, III, II)	0,44
2	Leg positions (VI, I, III, V)	0,39
3	Battement tendu	0,31
4	Battement fondu	0,58
5	Grand battement jete	0,68
6	Relevé	0,47

According to the results of the evaluation of the basic element of the turn "passé", the most effective is a special exercise "holding the position of one leg in the "passé" on the relevé" ( $r = 0,70$ ) (Table 5). The usage of this exercise affects the muscles of the legs and arms, combines body movements into one whole. The groups of muscles that fix the torso and back in the lumbar region allow you to stay in a strictly vertical position and still.

*Table 5*

**Matrix of correlation dependence of special exercises of classical exercise and performance of the basic element of rhythmic gymnastics turn "passé"**

N <sup>o</sup> i/o	Special exercises of classical exercise	Correlation coefficient
1	Hand positions (I, III, II)	0,47
2	Leg positions (I, IV, VI)	0,33
3	I, II, III port de bras	0,29
4	Aplomb	0,51
5	Keeping the position of one leg in the "passé"	0,59
6	Keeping the position of one leg in the "passé" on the relevé	0,70

Thus, a special exercise "holding the position of one leg in the "passé" on the relevé", produces stability of the body, which does not deviate from the intended direction and gives aesthetics to the element.

During the implementation of the basic element "wheel" it was found that the implementation of "motor action near the machine" - significantly influenced ( $r=0,57$ ) the learning of this motor action (Table 6). A lower value ( $r=0,48$ ) was found in the exercise "grand battement jete", which indicates that a certain exercise should be performed consistently with increasing level of coordination of the whole body.

*Table 6*

**Matrix of correlation dependence of special exercises of classical exercise and performance of the basic element of rhythmic gymnastics "wheel"**

Nº i/o	Special exercises of classical exercise	Correlation coefficient
1	Motor actions near the machine	0,57
2	Adajio	0,41
3	Grand battement jete	0,48
4	Hand holding (II, III positions)	0,37

**Conclusions / Discussion**

The obtained results of the study lead to the conclusion that the usage of the special exercises of classical exercise allowed to increase the level of performance of such basic elements of rhythmic gymnastics as balance "forward" ( $t = 3,57$ ;  $p < 0,001$ ), the score increased by 21%; balance "attitude" ( $t = 2,68$ ;  $p < 0,01$ ), the results improved by 15%; turn "pass" ( $t = 2,21$ ;  $p < 0,05$ ), score improved by 11% and jump "Cossack"

( $t = 2,12$ ;  $p < 0,05$ ), score improved by 11%.

The usage of the special exercises of classical exercise, as expected, contributed to the formation of motor qualities of 5-6 years old girls, aimed at the effectiveness of the basic elements of rhythmic gymnastics.

The results of the evaluation have shown the correlation dependence of the performance of the basic elements of rhythmic gymnastics and the special exercises of classical dance, providing the performance of the elements: jump "Cossack" has a

medium level of correlation with special exercises: "grand battement" ( $r = 0,60$ ), "sauté" ( $r = 0,53$ ) and "assemble" ( $r = 0,51$ ); balance "forward" with "adajio" ( $r = 0,63$ ) and "grand battement jete" ( $r = 0,57$ ); balance "attitude" with a special exercise "grand battement jete", which has a high level of correlation ( $r = 0,68$ ) and "battement fondu" ( $r = 0,58$ ); turn "pass" with a special exercise "holding the position of one leg in the "passé" on the relevé", which has a high level of correlation ( $r = 0,70$ ) and "holding the position of one leg in the "passé"" ( $r = 0,59$ ), "aplomb" ( $r = 0,51$ ); "wheel" with "motor actions near the machine" ( $r = 0,57$ ).

The conducted research confirms the data of correlation between the basic elements of rhythmic gymnastics and the special exercises of classical exercise, which give the opportunity to use them in the training process of young gymnasts.

**The prospect of further research** is to adjust and further apply additional exercises of classical exercise for improving the assimilation of basic elements of rhythmic gymnastics by young athletes.

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