

CONTRIBUTIONS TO THE DEVELOPMENT OF MOVEMENT COORDINATION OF THE GYMNASTS BY USING STEPS FROM RHYTHMIC GYMNASTICS

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Abstract

The purpose of this paper is to develop movement coordination for gymnasts of 8-9 years by using variations of steps from rhythmic gymnastics in their training. For this study we used the following methods: literature review, observation, testing, statistical and mathematical methods of data processing and interpretation. After studying the coordination tests from the specialized literature, we chose the following to test the coordination: the balance test on an average height beam – artistic movements executed against time by respecting the range of the motion; the test of movement coordination - motor memory – the gymnasts had to perform certain movements. The experimental study was conducted from the 1st of September 2012 to the 31st of March 2013, on a group of seven gymnasts aged 8-9 years from CSS Gymnastics Focșani. During the study we used a certain training program, which included a series of steps from rhythmic gymnastics. The steps were executed with musical accompaniment, together with other simple movements of the upper body, on the beam, and on the form of combinations. Gymnasts have conducted this program three times a week, during their training lessons.

Key words: *artistic gymnastics, rhythmic gymnastics, balance, coordination, music*

INTRODUCTION

According to some authors, skill has the following components: the capacity to coordinate body segments; the ability to combine movements; the ability to differentiate movement; balance; accuracy; spatial and temporal orientation; amplitude, bilaterality (Niculescu, 2006: 88).

Coordination ensures rapid learning and improvement of certain skills as well as their usage and adaptation to different requirements and situations (Hirtz, quoted by Niculescu, 2006: 87).

According to Schnabel (quoted by Toader, 2002: 5), there are three basic coordination skills: orientation, adaptation and change, and three specific qualities for coordination: balance, motor combining and grace, to which we add the motor learning ability.

The development of a sense of balance is particularly important in gymnastics; balance is in direct dependence with a maximum efficiency of execution and a good quality of the gymnastic elements that include different rotations of the body and require achieving body stability in the execution of various elements, positions or movements (Jipa 1972: 24).

Rhythmic gymnastics exercises are successfully used by other sports as a means of educating the body's expressiveness, ease and grace of movement. Rhythmic gymnastics exercises are used for both physical development and improvement of the coordination capacity. They are

inextricably linked to music, and therefore they have a choreographic characteristic (Ukrania 1965: 12).

The importance of using dancing elements (classical dance, rhythmic gymnastics) to improve certain physical qualities and gain a greater degree of expressiveness, posture and self-control is well known (OD Ungureanu, 1968: 22).

Some authors (Sima, 1980 Băiașu 1985, Nanu, Gogoncea, 2001, Macovei, 2007) state that the steps from rhythmic gymnastics used during training, with the purpose of developing different motor skills and an expressive posture, are as follows:

- exercises using the supporting barre and exercises at the center;
- exercises that educate the rhythm and musicality of movements;
- wave exercises that, together with the balance and arch exercises, help develop motor skills;
- specific balance exercises, necessary to maintain body stability in different positions or movements;
- variations of steps (dance steps and steps from rhythmic gymnastics);
- spins (turns and pirouettes);
- jumps, characterized by high dynamism, amplitude and ingenuity, and having a general effect on the whole body.

Specialists in this field show that music brings an important contribution in gymnastic movements, which justifies its use in almost all

branches of the discipline. Music is indispensable and essential in both rhythmic and artistic gymnastics trainings, having an important contribution to the development of motor coordination, as a consequence of the fact that rhythm, tempo, nature and dynamics of music require rhythmic, temporal and other characteristics of movement. From a physiological point of view, the presence of music creates a positive emotional state, largely eliminating the subjective feeling of fatigue and thereby supporting the body's ability to work longer (Stoenescu 1978, Luca, 2000 Dobrescu, 2007).

MATERIAL AND METHODS

The purpose of this paper is to develop movement coordination for gymnasts of 8-9 years by using variations of steps from rhythmic gymnastics in their training. For this study we used the following methods: literature review, observation, testing, statistical and mathematical methods of data processing and interpretation.

After studying the coordination tests from the specialized literature, we chose the following to test the coordination: the balance test on an average height beam – artistic movements executed against time by respecting the range of the motion; the test of movement coordination - motor memory – the gymnasts had to perform certain movements.

The balance test: the execution of a series of exercises on medium height beam, including artistic movements, with the recording of the execution time in seconds. The smaller the time obtained, the better the balance (Liuşnea, 2012).

The artistic series:

P.I.: standing on tiptoe:

- step forward with the left foot in demi-plié; lifting the right leg backwards; the right arm is extended forward and the left one is extended to the side;
- stretching of the left leg; passing of the right leg beside the bank and crossing the left leg forwardly; raising the arms above the head in a circular pose;
- step forward with the right foot in demi-plié; lifting the left leg backwards and extending the left arm forward; extending the right arm to the side;
- stretching of the right leg; passing of the left leg beside the bench and crossing the right leg forwardly; raising the arms above the head, in a circular pose;
- chasse with the left leg; the right leg is balanced forwardly; the arms are extended sideways;
- chasse with the right leg; the left leg is balanced forwardly; the arms are extended sideways;
- step forward with the left foot; raise the right leg to passé and lower the arms;

- step forward with the right foot; raise the left leg to passé and lower the arms;
- turn on the tiptoe of both feet with the arms above and to the side.

The coordination test: it evaluates the precision of movements based on visual and motor memory. During this test, the gymnast has to perform a complex exercise in eight strokes (time). The exercise is shown twice successively (with loud countdown of the strokes). Gymnasts participate individually in this test. (Toader 2002, Liuşnea, 2012).

The content of the movement exercise:

P.I.: standing:

- T.1 - side step to the right and simultaneous lift the arms sideways;
- T.2 - return to the standing position and simultaneously lift up the arms;
- T.3 - bend the knees and, at the same time, lower the arms sideways;
- T.4 - return to the standing position and simultaneously extend the arms forwardly;
- T.5 – bend the arms with the hands on the shoulders;
- T.6 - stretch and lift the arms above the head;
- T.7 - lower and bend the arms with the hands on the shoulders;
- T.8 - return to the standing position.

The assessment of the test is based on a score calculated as follows: T1 - 0.50 pt; T2 - 1 pt; T3 - 2 pt; T4 - 2 pt; T5 - 1 pt, T6 - 1 pt; T7 - 1 pt; T8 - 0, 50 pt. To this score we add 1 granted point, so for a complete and correct execution of the movement exercise, a gymnast will receive a maximum of 10.00 points.

The experimental study was conducted from the 1st of September 2012 to the 31st of March 2013, on a group of seven gymnasts aged 8-9 years from CSS Gymnastics Focşani. The initial testing, evaluating the motor coordination, were conducted in the first week of September, while the final testing was conducted between 25th and 31st of March.

A number of steps from rhythmic gymnastics has been used during the study – dance steps (polka, jumping step) and steps specific to rhythmic gymnastics (waltz, sharp step, spring). In the first stage, 1st of September - 15th of October 2012, the steps were executed without the movement of the upper. During the second stage, 15th of October to 20th of December 2012, we introduced various movements of the trunk and arms together with the execution of the steps. Between January 7th and March 25th 2013, the variations of steps learned on the floor were executed on the beam, while four artistic combinations were created with the already learned steps (musical combinations with variations of steps) - combinations executed on the floor.

The walking and running steps – dance and specific steps – were executed 16x8 times within each lesson, during the appropriate periods. During the last training, the variations of steps on the beam were executed 4x8 times each, and the combinations of rhythmic steps executed on the floor were executed four times each. The gymnasts performed this program three times a week, during the training lessons.

In each of these periods, the variations and combinations of these steps were performed with musical accompaniment.

RESULTS AND DISCUSSION

After the initial testing and after the implementation of the training program with variations of steps from rhythmic gymnastics, the following results were obtained (arithmetic mean).

Table 1. The results obtained for the development of motor coordination

No.	Test	Experimental group	
		Initial (average)	Final (average)
1	Balance (seconds)	24,22	20,34
2	Motor coordination (grade)	6,19	8,20

The balance test. At this trial, the experimental group averaged 24.22 seconds during the initial testing and 20.37 seconds during the final testing.

So the gymnasts progressed about 3.88 seconds between the two tests. (Table 1).

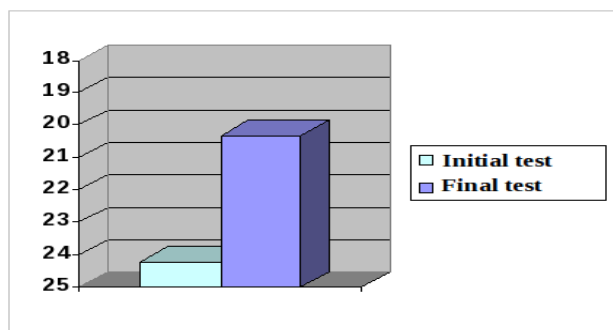


Figure 1. The dynamic evolution of the arithmetic mean between the initial and final balance test

The motor coordination test - motor memory. At this trial, the experimental group progressed by 2.01 points between the two tests, at the initial

testing achieving an arithmetic average of 6.19 points and at the final testing an average of 8.20 pt (Table no. 1).

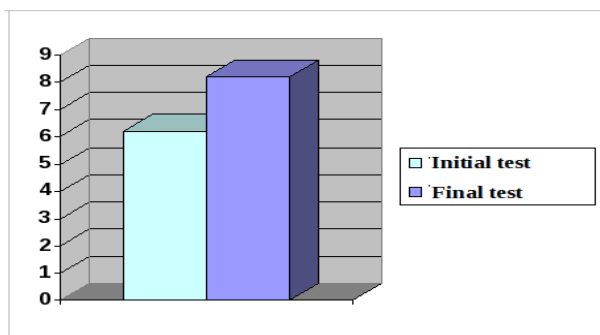


Figure 2. The dynamic evolution of the arithmetic mean between the initial and final motor coordination test

The results obtained by the experimental group at these trials – the initial testing and final testing –

show considerable progress on the development of motor coordination qualities (Figure 1-2).

Therefore, the level of motor coordination (balance, ability to coordinate the movements) improved significantly by using variations of steps from rhythmic gymnastics. The gymnasts performed the combination of artistic movements on the beam more accurately and safely, while the time for the completion of the exercise improved significantly. At the coordination test - motor memory, the score received by the gymnasts who participated in the experiment increased because they performed correctly most of the movements from the series.

CONCLUSIONS

Variations of steps from rhythmic gymnastics can be used successfully in the training lessons for young gymnasts, in order to develop their coordinative capacity. The posture of the gymnasts, an essential aspect in this sport, also improves as a consequence of this implementation. The dance steps and the steps specific to rhythmic gymnastics will be executed as simple as possible at first, with no action of the trunk and upper limbs, in order to ensure their proper assimilation. Gradually, as the steps are assimilated, there will be introduced various movements of the torso and the arms, aspect that requires coordination skills (coordination between the movement of the legs and that of the upper limbs and the trunk) - implicitly leading to the development of this quality. After consolidating the variations of steps, they can be executed on the beam, under balance conditions, or on the floor as exercise combinations.

The rhythmic steps were accompanied by music throughout the training. Music plays an important role in the development of this quality, as it can impress motor rhythm, motor tempo, amplitude, posture and other main characteristics of the movement through its specific particularities. It is imperative that music accompanies the executions of the exercises, as its particularities - melody, rhythm, tempo and character - are being adapted to rhythmic steps. At first, simultaneously with the musical accompaniment, the coach will mark the times (strokes) through countdown. Music also has an important role in maintaining the interest of the gymnasts in a certain activity.

The development of the coordination skills of the gymnasts (rhythm, time-space orientation, motor memory, precision, response time etc.) is the foundation of a successful coordination of movements. The ability to combine movement, grace and elegance is what characterizes the

gymnastics in terms of coordination. A high degree of coordinative capacity determines a precise control and a good execution of movements and elements on the gymnastic equipments, during competitions.

Therefore, we consider necessary the use of rhythmic gymnastics – i.e. variations of steps – during the training lessons, for a good development of motor coordination of the gymnasts.

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