

The methodology of flexibility development in the teenagers who practice break dance by fitness program

Annotation

Each sport has its own specific requirements for the physical fitness of athletes – the level of development of individual physical qualities, functional capabilities and body built. the technique of performing competitive combinations in fitness aerobics, the discipline of hip-hop, largely determines the level of physical fitness of athletes and, in particular, the level of development of such physical quality as flexibility.

In this article is presented the methodology of developing flexibility in the teenagers who practice Break Dance using fitness programs.

Keywords: break dance, teenagers, flexibility, stretching, fitness-yoga

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Introduction

Physical training is one of the fundamental sections of training an athlete at all stages of a long-term training process. It is necessary for an athlete of any age, qualification and sport. However, each sport has its own specific requirements for the physical fitness of athletes – the level of development of individual physical qualities, functional capabilities and body built. Therefore, there are certain differences in the content and methodology of physical fitness in a particular sport for athletes of different ages and qualifications.¹ According to most experts, the technique of performing competitive combinations in fitness aerobics, the discipline of hip-hop, largely determines the level of physical fitness of athletes and, in particular, the level of development of such physical quality as flexibility.

With the development of flexibility, the trainer must solve the following problems:²

1. To ensure the comprehensive development of flexibility, that would allow performing various movements with the necessary amplitude in all directions allowed by the structure of the musculoskeletal system.
2. To increase the level of flexibility development in accordance with the requirements of a specific sports activity.
3. To help maintain the optimal level of flexibility for students at different age periods.
4. Ensure the optimal recovery of flexibility lost as a result of diseases, injuries and other causes.

In dance sports, with the development of flexibility, special attention is paid to increasing the mobility of the spine, especially its thoracic region, joints of the upper and lower extremities. In order to do this, there are used stretching exercises, which, depending on the mode of muscle work, are divided into three groups:³ *dynamic*, *static* and *combined* exercises.

In turn, the dynamic exercises are divided into active and passive.

Dynamic active exercises include a variety of torso tilts, springy,

swing, jerky, jumping movements that can be performed with weights, bands or other resistances and as well, without them.

To the *dynamic passive exercises* are referred the exercises with “squatting”, using the help of the partner’s actions, with overcoming external resistance, using additional support or the weight of one’s own body (for example, twine).

Static active exercises involve holding a certain position of the body with stretching the muscles close to maximum due to the contraction of the muscles surrounding the joints and performing movements. In this situation, the muscles are in the stretched position up to 5-10 s. When performing the static passive exercises, the retention of the body or its individual parts occurs with the help of external forces – shells, own body weight. Static passive exercises are less effective than dynamic ones. Flexibility indicators after static active exercises last longer than after passive ones.

When performing *the combined exercises*, there are possible various alternatives of alternating active and passive movements. For example, swinging the legs back and forth while standing at the support, followed by keeping the legs in the front-up position at a near-limit altitude.

The main methods for developing flexibility include *the repetition method*, which involves performing stretching exercises in series, several repetitions in each, and intervals of active rest between series that are sufficient to restore working ability. This given method has some options: the method of repeated dynamic exercises and the method of repeated static exercises. In both cases, there can be both active and passive muscle tension. The technique of developing flexibility with the help of static exercises is called “stretching”.

A combined method of developing flexibility is *the method of preliminary passive stretching* of the muscles with their subsequent active static tension, a decrease in tension (relaxation) and subsequent stretching. This method is called the “method of contraction, relaxation and stretching.” It is based on the position that after stretching the muscles not only contract more strongly, but also become more elastic.⁴

Materials and methods

The purpose of this study is to improve the process of physical training of young people who practice break dance. The present study was carried out on the basis of the sports complex "LiveStyle", city Tiraspol.

It was carried out the analysis of scientific and methodological literature on the anatomical and physiological development of schoolchildren aged 16-18, the problems of raising physical qualities, as well as the specifics of Hip-Hop culture, and the break dance direction, in particular.⁵ In addition, it have been studied the content and methodology of fitness programs aimed at developing flexibility. A generalization of literature data allowed us to state that means of fitness programs can contribute to the development of various motor abilities of students of any age.

This position made it possible to develop an experimental program taking into account the tasks set for the given study. In order to get the possibility to determine its effectiveness, the testing was performed on young people who practice breakdance. To carry out the testing process, it has been used exercises to identify the level of flexibility development of various parts of the body.

I. Torso muscle flexibility testing (cm)

1. Tilting bent from a sitting position on the floor, legs apart. The distance from the fingertips to the line connecting the heels of the feet is measured.
2. Tilt to the right from a standing position, legs shoulder-width apart, left arm straightened to the right. It is measured the distance on the left side of the body from the belt to the armpit.
3. Tilt to the left from a standing position, legs shoulder-width apart, right hand straightened to the right. It is measured the distance on the right side of the body from the belt to the armpit.

II. Testing the flexibility of the muscles and joints of the legs (cm)

1. Transverse twine.
2. Longitudinal twine on the right leg.
3. Longitudinal twine to the left leg.

In all cases, is measured the distance from the pelvic area to the floor.

III. Testing flexibility of the shoulder joint (cm)

1. Bending the arms behind the back, right hand from above over the shoulder, left below.
2. Bending the arms behind the back, left hand from above over the shoulder, right below.

The distance from the wrist of one hand to the wrist of the other hand is measured.

Results

An experimental technique for developing flexibility

The structure of the break dance classes presupposes a traditionally classical three-part form: preparatory, main and final parts.

The preparatory part of the lesson was carried out for 20-25 minutes. During this part were solved the tasks of organizing those involved, mobilizing them for the upcoming work, preparing for

the exercises of the main part of the lesson. The exercises in the preparatory part contributed to the mobilization of attention, prepared the musculoskeletal apparatus, the cardiovascular and respiratory systems for subsequent work.

Along with the means that solve these problems – varieties of walking and running, various dance compounds based on modern dances, general developmental exercises – dynamic stretching exercises were used to increase joint plasticity and stretch large muscle groups. Stretching exercises were performed from a standing position.

The main part of the lesson that was lasting for 45-50 minutes was aimed at solving the main tasks assigned to the lesson. Their solution was achieved as a result of a large arsenal of various motor tasks: elements of gymnastics, free plastic, acrobatic exercises.

Depending on the tools that have been used, the main part of the lesson can be presented in several different ways.

The main part of the lesson involves three types of varieties:

- a. The first is based on basic acrobatic elements;
- b. The second is based on elements of modern dances;
- c. The third is mainly built on the movements of the upper and lower Break Dance.

However, in most cases, mixed options were used, where various means of preparation alternated in various combinations.

To train the ability to perform acrobatic and dance movements' together (necessary when performing dance compositions), during the main part of the lesson it were used acrobatic elements: flip-flops, slow coups, handstand, gymnastic bridge, and headstand.

As well as elements of the upper Break Dance or Top Rock – Cross Step, Indian Step, Crossover Step, Salsa Rock, Front Step, March Step; and elements of the lower Break Dance or Power move – Windmill, Flares, Head Spin, Air Twist (Air Tracks), Elbow Twist (Elbow Tracks), Flare (Fly), Elbow Flare (Elbow Fly), Spin, Revers, Elbow Spin, Elbow Revers Spin, Halo (Tracks), Windmills, MuchMill's (Baby mills), Swipes, Airplane mills, Turtle, Cricket, Jackhammer, Ufo, Alligator, Wolf,^{6,7} etc.

The simplest form of organization of the main part was one-part, when exercises are carried out only at the support or only in the middle. A two-part form is also possible – at the support, then in the middle.

Exercises performed at the support, mainly composed elements of acrobatics: handstand, headstand, practicing gymnastic bridge, various moves.

The exercises performed in the middle include: exercises aimed at developing strength (static positions with an emphasis on the arms, stands on the head, forearm, elbows, shoulders), practicing tricks, gymnastic jumps in place, from running and jumping with elements of acrobatics.

During *thefinal part* of the classes (15-20 minutes), it has been used elements of stretching and fitness yoga, since this part was aimed at developing flexibility, restoring breathing functions.

Through stretching, it was increased the elasticity of muscles and joints, flexibility. In addition, it had a stimulating effect on blood circulation and lymph circulation in the human body. Thus, the load received by the body decreases, the body comes in tone and, as a result, adapts faster to constant physical training.

Some yoga asanas (without meditation) were used to twist the trunk (ArdhaMatsiendrasana, Triconasana, JatharaParivartanasana) in combination with breathing exercises: holding the breath in and out, and also aimed at improving the flexibility and mobility of the joints (Bhujangasana, Ushtrasana, Ushtrasana, Pashchimottanasana), muscle strengthening (Parvatasana, ViparitaKarani, Navasana) and the removal of psycho-emotional stress (Yoga Mudra, Padmasana).^{8,9}

The final part ended with some exercises to relax the muscle groups and the whole organism.

Analysis of the dynamics of the flexibility development of break dance practitioners

The analysis of the results of the tested flexibility parameters for dancers allowed us to conclude that the developed methodology for

Table 1 The dynamics of the flexibility development of break dance practitioners

Parameters		$\bar{X} \pm S_x$		t	p
		initial	final		
Shoulder joint (cm)	right	5,6±0,73	2,7±0,62	4,254	< 0,001
	left	6,1±0,84	3,1±0,84	3,139	< 0,01
The hip joint (split: cm)	on the right leg	14,7±1,95	7,9±1,33	3,941	< 0,01
	on the left leg	14,6±1,95	7,9±1,34	3,878	< 0,01
	transversal	16,8±1,95	11,9±1,05	2,899	< 0,05
Torso Flexibility (tilt: cm)	right side	32,2±1,27	36,1±1,06	4,057	< 0,001
	left side	32,1±1,06	36,3±1,165	4,296	< 0,001
	forward	5,8±1,27	8,4±1,38	3,895	< 0,01

$n=16$ ($f=15$) for $p<0,05$, $t=2,119$; $p<0,01$, $t=2,920$; $p<0,001$, $t=4,015$

Discussion

The data obtained in this study show that fitness programs such as stretch fitness and fitness yoga are quite effective for the development of flexibility. At the same time, as practice has shown, when planning and conducting classes, that take into account the development of flexibility, a number of recommendations should be followed.

It is advisable to perform flexibility exercises at the end of the preparatory part of the lesson, as well as the final part. This allows, in the first case, to avoid injury in the subsequent work in the main part of the training, and in the second – to implement the tasks of improvement flexibility as a physical quality.

If the stretching exercises in the preparatory part are carried out in a standing position, then the final part involves working in a sitting and lying position, which involves deep stretching for large muscle groups not only of the legs, but also of the body and shoulder girdle.

To maintain mobility in the joints at the achieved level, as well as improving flexibility, in each workout it must be included exercises.

For teenage dancers it is recommended to give flexibility exercises as independent homework. At the same time, the proportion of static exercises should be less, and dynamic – more.

the teaching-training process for break dance using stretching and fitness yoga showed a positive effect from classes (Table 1).

Of the 8 indicators representing the flexibility parameters of various parts of the dancer's body, all revealed the statistical reliability of the source and final data at different levels of reliability. Of these, the triple-indicator: the flexibility of the right shoulder joint, the flexibility of the spine in an inclination to the right and left, revealed the reliability of the initial and final data at the level of $p<0.001$. At the same time, four parameters demonstrated the reliability of the initial and final indicators at the level $p<0.01$: the flexibility of the left shoulder joint, the flexibility of the spine in the forward bend, and two parameters of the flexibility of the hip joint (on the right and left leg). And only an indicator of the flexibility of the hip joint revealed the reliability of the initial and final data at the level of $p<0.05$.

Stretching exercises must be performed at the largest amplitude and at the same time avoid sharp movements that can only be included in the final series of repetitions. In this case, as a rule, the muscles have already adapted to stretching.

Conclusion

The tasks of training dancers are largely determined by the effective methodology of physical training, which requires taking into account the rational planning of training loads, taking into account the principle of gradualness, as well as the dynamics of the volume of general and special physical training, the predominant development of individual physical qualities and special skills.

The work carried out investigated the process of developing flexibility in the teenagers who practice Break Dance, using fitness programs according the developed methodology, and demonstrated its effectiveness.

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None.

Conflicts of interest

The author declares that there is no conflicts of interest.

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