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# DEVELOPMENT OF FLEXIBILITY QUALITIES IN PRE-SCHOOL EDUCATIONAL INSTITUTION STUDENTS THROUGH A SET OF SPECIALIZED TAEKWONDO EXERCISES

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**Abstract**:

In this article, it is noted that flexibility is one of the physical qualities and its use in martial arts. Flexibility is a characteristic of the musculoskeletal system, which determines the limits of movement of body parts. Two types of flexibility are distinguished: active flexibility, which is characterized by the values of the amplitude of movements performed independently as a result of muscle tension, and slow flexibility, which is achieved under the influence of external forces, and is characterized by the maximum characteristics of the amplitude of the movements.

**Keywords**: Sport, martial arts, taekwondo, flexibility, physical attributes, physical exercise, young children.

## Introduction

It is noted that the modern system of training young athletes in sports has been formed as a separate scientific discipline as a result of the long-term development of sports theory and practice, and currently consists of a set of scientific knowledge obtained in the theoretical analysis of athlete training, as well as accumulated through experimental research .

To achieve high, stable results, comprehensive development is required. All physical qualities are harmoniously interconnected. The improvement of one of them leads to a better manifestation of the other. Under the same conditions, an athlete can perform a technique quickly during a fight with an opponent with a small body weight, and with an opponent with a relatively heavy body weight, it will require greater physical effort to perform this technique. In turn, the stronger the athlete, the better he can demonstrate the quality of speed.

Strength, speed, endurance, agility, and flexibility are developed directly in taekwondo training, and this goal is also achieved through the use of various general developmental exercises and exercises from other sports. However, not all general developmental exercises have the same effect on the development of the physical qualities required of an athlete.

Among their many varieties, it is required to use only those that are most suitable for specialization in Taekwondo. Exercises aimed at developing physical qualities are performed

by the athlete during morning physical education exercises, taekwondo classes and specially organized physical training sessions.

Each day in the weekly training cycle has its own focus, meaning that the main focus is on developing a particular physical quality or group of qualities.

The athlete's goal-oriented physical training is carried out throughout the entire sports year. Depending on the periods and stages of training aimed at developing physical qualities, the appropriate means are used differently. In this view, the relative share of general developmental exercises in the main period is lower than in the preparatory and transitional periods.

Flexibility is a property of the musculoskeletal system that determines the limits of movement of body parts. Two forms of flexibility are distinguished:

- active flexibility, characterized by the amplitude values of movements performed independently as a result of muscle tension;
- Weak flexibility, characterized by the maximum amplitude of movements, achieved under the influence of external forces.

In slow exercises, flexibility is achieved by achieving a greater amplitude of movements than in the active state. The manifestation of flexibility depends on the anatomical structure of the joints, the elasticity of the muscles and ligaments, muscle tone, the general functional state of the organism, and external conditions.

When planning and organizing training sessions, it is necessary to take into account the following factors: in the morning, the level of flexibility decreases, but at this time it is very effective to perform exercises to develop flexibility; in cold weather, when the body is cooled, the level of flexibility decreases, and after performing stretching exercises, the level of flexibility increases; fatigue decreases the level of flexibility, but this can lead to inactivity.

There are 2 main methods of training flexibility: Multi-repetition stretching method - this method is based on the fact that during the multi-repetition exercises, the amplitude of muscle movements is gradually increased, which significantly increases the elasticity of the muscles. At the beginning of the exercises, they are performed with a small amplitude, and then they are increased to the maximum size from 8-12 repetitions. The optimal limit of repetition of the exercises is determined by the beginning of a decrease in the amplitude of the movements. Static stretching method - this method is based on the existence of a relationship between the magnitude of the stretch and its duration. Initially, relaxation is required, and then the exercises are performed by holding the final position for 10-15 seconds to several minutes. The complex of static stretching exercises can also be performed with a partner.

Flexibility is the ability of an athlete to perform movements with a large amplitude. Flexibility is determined by the mobility of the joints, which in turn depends on a number of factors: including the structure of the joint capsule, the elasticity of the ligaments and tendons, their elongation properties, etc.

Flexibility is developed to a significant extent through the performance of technical movements, especially those that require the athlete to demonstrate this quality. Exercises aimed at increasing the elasticity of muscles and ligaments should be performed daily,

systematically, since a break of not too long duration in this form can negatively affect the manifestation of flexibility.

Stretching exercises can be best done by performing one or two additional movements in the direction of increasing the amplitude. Exercises aimed at developing flexibility can also be included in the morning warm-up exercises after the body has warmed up sufficiently. These exercises are also prescribed for the preparatory and final parts of the lesson.

It is known that even relatively simple movements of the body are carried out by the coordinated participation of many muscles, one of which contracts, while the other relaxes or stretches. However, the development of each of these qualities requires that they be perceived separately and that the aspects of their influence be taken into account, which have priority.

To make it easier to target based on the infinite variety of physical exercises, it is proposed to classify them in the form that they exist in practice.

The classification framework allows for the implementation of the following separation indicators in the allocation of exercises for specific muscle groups and even individual muscles:

- by anatomical sign.
- by the sign of the use of objects.
- by the sign of the organization of the group.
- by initial state.
- by the sign of influence.

Flexibility is a key aspect of martial arts, contributing significantly to a practitioner's performance, injury prevention, and overall physical fitness. In martial arts, flexibility refers to the ability to move joints and muscles through a full range of motion with ease and efficiency. This attribute is essential in a variety of martial arts disciplines, including taekwondo, karate, judo, Brazilian jiu-jitsu, and others, as it enhances technique execution and the ability to adapt to dynamic situations during practice or combat.

Flexibility plays several important roles in martial arts training and performance: Enhanced technique execution - Many techniques in martial arts require a high level of flexibility to be executed correctly and effectively. For example, taekwondo is known for its high kicks, which require significant flexibility in the hips, thighs, and waist. Similarly, judo and Brazilian jiu-jitsu techniques often require flexibility in the shoulders, back, and head area for throws, submissions, and evasions. Improved range of motion - Flexibility increases the range of motion in joints, allowing martial artists to execute techniques more smoothly and accurately.

A wider range of motion allows practitioners to strike from different angles, transition smoothly between movements, and maintain balance during complex maneuvers.

Flexibility in martial arts can be divided into several types, each of which performs different functions:

- Static flexibility : This refers to the ability to stretch or hold a position without moving.

Static flexibility is often taught through exercises such as splits or holding a high kick stance. This type of flexibility is essential for techniques that require holding positions, such as certain kicks or stances in taekwondo or karate.

• Dynamic flexibility involves the ability to move muscles and joints through their full range of motion with speed and control.

This is essential for martial arts techniques that require fluid, fast movements, such as kicking, punching, and throwing. Dynamic flexibility is often developed through exercises that mimic movements performed in martial arts, such as leg swings and dynamic stretching.

Passive flexibility is the ability to move a joint or muscle to its ultimate range of motion using external forces such as gravity, a partner, or equipment. This is often taught in stretches where a partner or equipment helps push the limb beyond its active range. This is useful in grappling arts such as Brazilian jiu-jitsu, where the opponent can force the joint into a stretched position.

Active flexibility refers to the ability to move a joint or muscle through its range of motion using only the strength of the agonist muscles. For example, raising your leg into a high kick position without using your arms or momentum involves active flexibility. This is especially important for maintaining control during techniques that require balance and precision.

Flexibility training in martial arts. Flexibility training in martial arts involves a combination of various stretching techniques and exercises tailored to the specific demands of the martial art being practiced.

Static stretching involves holding a stretch for a long period of time, usually 20-60 seconds. This type of stretching is usually done at the end of a workout to improve flexibility by lengthening the muscles. Examples include hip flexion stretches, hip flexion stretches, and splits.

Dynamic stretching involves moving parts of your body through their full range of motion in a controlled manner. These stretches are often done before a workout or competition to warm up your muscles and prepare them for action. For example, leg curls, arm circles, and body twists.

Proprioceptive Neuromuscular Facilitation (PNF). PNF stretching is an advanced form of flexibility exercise that involves stretching and contracting a targeted muscle group. It usually requires a partner and is one of the most effective ways to increase passive and active flexibility. The "hold-release" method, in which a muscle is stretched, contracted, and then stretched again, is a common PNF technique.

Isometric stretching involves holding a stretch while the muscle contracts. This technique is often used to improve flexibility and strength simultaneously. It is effective for developing the static-active flexibility needed for high impact or holding difficult positions.

Ballistic stretching involves jumping movements to push a muscle beyond its normal range of motion. While it can be effective for certain types of flexibility, it increases the risk of injury and is generally less recommended for beginners or those without proper guidance.

Different martial arts place varying degrees of emphasis on flexibility, and specific needs may vary:

Taekwondo focuses on high, fast strikes, which build flexibility in the legs, hips, and lower back. Practitioners often engage in extensive drills to maintain their ability to deliver strikes at various heights and angles.

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