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SOLUTIONS FOR DEVELOPING SPEED AND STRENGTH FOR THE BASKETBALL TEAM OF THE UNIVERSITY OF MINING AND GEOLOGY

Summary

Using conventional scientific research methods, the author has employed effective solutions to develop speed and strength for the basketball team of the University of Mining and Geology.

Keywords:

solutions for developing speed and strength in students .

I. INTRODUCTION

II. Report Content:

II.1. The role and characteristics of strength training in basketball.

II.1.1. The Role of Strength in Basketball:

Strength and speed are particularly important qualities in basketball. Basketball is a team sport with a high degree of indirect competition, characterized by quick starts, sudden stops, and jumps that create surprise and opportunities for scoring, passing, shooting, etc. Even defensive movements require greater strength. Therefore, it can be said that strength and speed play a crucial role in enabling athletes to perform technical movements effectively in basketball.

As a crucial quality for basketball players, speed and strength enable them to execute tactical plans during training and competition, surprise opponents, and improve their performance.

In summary, speed and strength are among the most important factors in training, competing, and improving basketball performance. Therefore, many renowned basketball experts and coaches prioritize strength training for their athletes.

II.1.2. Characteristics of training strength and speed qualities in basketball:

In basketball training and coaching, when arranging strength and speed exercises for each practice session, attention must be paid to their placement. Strength and speed exercises should only be performed after a thorough and complete warm-up, and in all cases, they should be scheduled after agility and flexibility exercises. The same applies to technique and tactics.

Strength and speed training should be introduced to young players early on, as it is an integral part of comprehensive training. When conducting strength training for young players, the following points should be considered:

- The choice of equipment and training resistance.
- Change your workout equipment regularly.

- Always pay attention to individual treatment.

- The exercises and techniques should be performed appropriately for the individual. Adequate rest and adjustments to the training pace are necessary when the training volume is high.

Never train with maximum weight.

After strength and speed training exercises, it's always necessary to relax and recover.

Explosive power is the highest manifestation of strength. Developing explosive power, in addition to relying on achieving maximum strength, also requires attention to the following characteristics:

- + Based on enhancing the maximum speed and strength of the muscles, thereby improving the ability to complete movements quickly.

To develop explosive power in basketball, training is conducted with varying weight levels. If training with low weight, the critical speed limit develops speed but does not meet the strength requirements. If using heavy weight, speed decreases, and this temporary decrease can only be recovered after stopping heavy training or drastically reducing the weight, which takes 2 to 6 weeks. Therefore, during periods of temporary speed reduction, weightless exercises should be used, or if weights are used, they should be reduced, allowing for the combined training of strength and speed.

- + When developing explosive lower limb strength, it is necessary to combine leg strength training with various jumping exercises. This will create opportunities to convert maximum strength into explosive power.

II.2. Research on selecting some exercises to develop speed and strength for basketball students at the University of Mining and Geology.

To select exercises that develop speed and strength for basketball students at the University of Mining and Geology, we first considered the exercises commonly used in physical training sessions for students, the available facilities at the university, and analyzed relevant documents and observed basketball training sessions in various units to find suitable exercises for developing strength in male basketball students at the University of Mining and Geology.

Based on the research results, we selected 38 exercises, divided into two groups: general strength training exercises and specialized strength training exercises. Specifically:

General strength training exercises: 6 exercises.

Specialized strength training exercises: 6 exercises.

These exercises were developed through interviews with teachers and coaches at universities in Hanoi to find the most suitable exercises for developing strength in basketball students at the Hanoi University of Mining and Geology. The specific interview method is as described in the previous section of this study. We will select exercises that achieve 70% or more of the maximum total score in both interviews.

Exercise 1: Jump high without a run-up.

- Purpose: To develop ankle strength in jumping movements for basketball students.

- Execution: The performer stands in place and jumps continuously at maximum height from the start signal until the stop signal. Perform 3-5 sets, each set lasting 10-15 seconds, with a 15-second rest between sets and active rest periods.

- Requirement: Perform a jump as high as possible and reach with your arms when your body comes to a stop at the highest point.

Exercise 2: Repeated knee raises.

- Purpose: To develop ankle strength in jumping movements.

- Execution: The performer stands in place. Upon receiving the signal, they perform a standing high jump with knee flexion so that at the highest point, the leg is bent at the knee joint and the knee is higher than the waist. Continue until the stop signal is given. Perform 3-5 sets, each set lasting 10-15 seconds, with a 15-second rest between sets.

- Requirement: Perform a jump as high as possible and reach with your arms when your body comes to a stop at the highest point.

Lesson 3: High jump with a run-up.

- Purpose: To increase ankle strength during the running jump.

- Execution: The participant takes a running start (about 3 steps) and jumps as high as possible onto the board. Perform continuously 5-7 times per group, for 3 groups, with a 15-second rest between groups, followed by active rest. Alternatively, the exercise can be performed in a continuous circle with a group of 7-10 people, with natural and active rest periods.

- Requirement: Take a suitable run-up so that you can jump as high as possible, with the board at its highest position. Jump with all your might.

Lesson 4: Standing long jump.

- Purpose: To increase ankle strength during jumping movements.

- Execution: Participants stand at the starting line and perform 5-7 consecutive standing long jumps per group, completing 3 groups. There is a 15-second rest period between groups, followed by active rest. Alternatively, the exercise can be performed in a continuous circle with a group of 7-10 people, with natural and active rest periods.

- Requirements: The performer must squat down to gain momentum in place, aiming for the highest possible jump, without bracing themselves with their hands or falling backward. Jump with all their might.

Exercise 5: Back muscles – Abdominal muscles.

- Purpose: To develop back and abdominal muscle strength for students.

- Execution: One set of exercises is counted as one set of back muscles and one set of abdominal muscles.

+ Abdominal exercises: Two people work together, one performing the exercise and the other assisting. The performer lies on their back with their hips, back, and legs touching the ground, shoulders about 5-10 cm from the ground, head raised above the ground towards the shoulders, and hands behind the neck. The assistant ensures the performer's feet remain in contact with the ground. When the signal to start is given, the performer uses their abdominal strength to lift their entire upper body perpendicular to the ground, then regains control to return to the starting position. Repeat continuously 20-25 times.

+ Back Muscle Exercise: Two people work together, one performing the exercise and the other assisting. The performer lies face down with their legs, thighs, and abdomen touching the ground, chest about 5-10 cm from the ground, head elevated above the ground towards the shoulders, and hands behind the neck. The assistant ensures the performer's legs remain in contact with the ground. When the signal to start is given, the performer uses their back muscle strength to lift their entire upper body as high as possible off the ground, then returns to the starting position. Repeat continuously 20-25 times.

Perform 2-3 sets, resting 15 seconds between sets, and taking active breaks.

Exercise 6: Push-ups (lying face down).

- Purpose: To increase wrist, arm, and overall body strength.

- Execution: The person performs the exercise in a prone position, supporting themselves on their hands so that both arms are straight (without bending the elbows), the distance between the hands equal to the distance between the shoulders, with legs, hips, back, and shoulders on a relatively flat surface. Upon the start signal, immediately lower the body's center of gravity to the lowest point by bending the elbows (so that the body almost touches the ground), then straighten the elbows to return the body to the starting position. Repeat continuously until the prescribed number of repetitions is completed. Perform 3 sets, each set with 15-20 repetitions, resting 30 seconds between sets, and taking active rest.

- Requirements: Throughout the exercise, the legs, hips, back, and shoulders must remain relatively flat. Lower the body's center of gravity to the lowest possible level.

III. Conclusion and Recommendations:

III.1. Conclusion:

Through research, the author has selected 6 strength-building exercises for basketball students at the University of Mining and Geology, including 6 general strength-building exercises and 6 specialized strength-building exercises.

** Specialized strength training exercises:*

- Continuously and quickly toss and catch the ball in various positions (in place, turning around, moving, one-handed tossing and catching, two-handed tossing and catching).
- Hold a ball or a heavy object and perform movements such as raising your arms to chest level, shoulder level, upward and backward, and rotating them.
- Jumping and throwing the ball from different positions .
- Hold the elastic band or pull on an elastic object, swing your arm to hit the ball with the strength of your shoulder.
- Jump and throw the ball over the net into a designated area .
- Pass the ball into the wall while moving.

III.2. Recommendations:

During teaching, learning, and training, selected exercises aimed at developing strength for the basketball team of the University of Mining and Geology should be applied in practice, and their effectiveness should be initially evaluated. Through evaluation, the selected exercises have proven more effective than those commonly used at the University of Mining and Geology.

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INSTRUCTIONS ON THE RULES OF VOLLEYBALL FOR FEMALE STAFF MINING AND GEOLOGY UNIVERSITY

Summary

Based on the recreational volleyball documents from the General Department of Physical Education and Sports, the author introduces the rules of recreational volleyball for female staff members of the University of Mining and Geology.