



Effectiveness of Developing the Technique of Attacking Movements of Young Volleyball Players

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Abstract: In this article, the process of development of attacking techniques of 13-14-year-old volleyball players is studied. During the research, a set of exercises aimed at increasing the efficiency of the participants' attack techniques was developed and these exercises were used by the participants of the experimental group. The developed set of exercises had a positive effect on the effectiveness of the offensive movements of the participants in the experimental group. In particular, the quality of attack movements, and the accuracy and efficiency of shots achieved positive growth in the experimental group. The results of the research serve to improve the technical and tactical training of young volleyball players and to organize training effectively.

Keywords: training, attack technique, combination, correlational analysis, volleyball

Introduction

Currently, the republic is experiencing a growth in children's sports development. This includes the implementation of modern, science-intensive systems, as well as new forms and methods of physical education (Logan, 2019; Sarmiento, 2019). The goal is to instill a love for sports in children and to emphasize the importance of sports in the minds of the younger generation, while also promoting spiritual and physical development (Gorham, 2019; Wilmoth, 2019). Measures to promote patriotism and national pride are being implemented based on decrees and resolutions from our Head of State (Carbone, 2021; Flensner, 2021; Waltzman, 2020). These documents emphasize the importance of organizing children's sports scientifically, with a focus on the initial stage of training (Bogl, 2020; Buszard, 2020; Moeijes, 2019; Sprengeler, 2019).

When discussing sports, particularly volleyball, it is important to recognize that athlete training requires a comprehensive approach. In modern volleyball, the technique of attacking is constantly evolving (Campo, 2022; Geng, 2022; Rotta, 2021). Therefore, using exercises that develop the technical offensive movements of young volleyball players during training sessions can increase the speed of transition from defense to attack and the speed of tactical combinations (Link, 2019; Lutkova, 2023; Nikolaeva, 2023). This, in turn, reduces the time required to execute technical moves.

This study aimed to investigate the effectiveness of teaching attacking techniques to 13-14 year old volleyball players, and to evaluate their attacking efficiency during games.

Practical recommendations were then provided based on the analysis. To achieve this goal, the following task was set: to examine the training process of young volleyball players during the pre-competition period. The objective of this study is to evaluate the effectiveness of attacking techniques used by young volleyball players during competition and analyze the results. Additionally, the study aims to provide a scientific basis for the effectiveness of attacking techniques in 13-14 year old volleyball players based on an analysis of their training and competitive activity. The purpose of this study was to develop the ability to perform the attack technique through exercises provided during training and to provide methodological instructions for its improvement.

Methodology

The study was conducted at the Samarkand City Sports Athletics Center and involved 10 young athletes between the ages of 13 and 14 who were in the initial phase of specialization.

The study consisted of two stages. The text analyzes the theoretical aspects of the problem and presents the current state of scientific-theoretical research.

Pedagogical experiments were conducted to study the methods of developing attacking technique of young volleyball players during training. The study yielded final results. At this stage, we summarized and analyzed the study results and provided practical recommendations.

Results and Discussion

Table 1. Assessment of Volleyball Players' Attack Technique Level Based on Special Tests Prior to the Experiment (n=10)

No.	Player	High jump from a standing position (sm)	4 - The object is located within the zone and can be moved towards the device by jumping and touching it (see diagram).	Execute a precise attacking throw from zone 4 to zones 1, 6, and 5 with the help of the midfielder. Repeat this action 9 times, 3 times per zone.	Execute an accurate attacking throw from zone 4 to zones 1 and 5 against a blocking player (10 times).	Analysis of successful offensive shots in one period of control games (per game)
1	M.III	31	240	6	5	6
2	H.A.	30	239	6	6	5
3	M.A.	29	236	6	4	5
4	P.A.	26	235	5	3	6
5	A.Д.	25	237	6	4	5
6	M.C.	24	238	4	4	4
7	A.3.	26	239	4	5	5
8	C.H.	27	238	5	5	6
9	Э.Г.	28	240	4	6	6
10	T.Y.	22	237	4	4	4

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ΣX_i		268:10=26,8%	2379:10=237,9%	50:10=5,0%	46:10=4,6%	52:10=5,2%
Min-max		22/31	236/240	4/6	3/6	4/6
$x \pm \sigma$		31 \pm 0,9	240 \pm 0,4	6,0 \pm 0,2	6,0 \pm 0,3	6,0 \pm 0,2

According to Table 1, the results of 10 participants who underwent 5 different tests did not yield the expected outcomes. Therefore, we recommended this group to use the exercises we provided.

The methods have been improved with a description of a specific gaming ampoule. Previously studied gaming techniques enhance group gaming, physical fitness, and individual material assimilation methodology.

Attackers require athletic training, well-developed strength, speed, agility, and flexibility. Basic exercises include those aimed at strengthening the musculoskeletal system, primarily the ankles, knees, shoulders, feet and wrists, finger joints, and increasing muscle contraction speed. General developmental exercises are performed without objects or with objects such as balls, dumbbells, stretchy elastic objects, etc.

It is advisable to teach the following phases in parts when training attacking movement: running, jumping, striking the ball, and landing on the ground. These phases are further divided into several micro-phases. In the running phase, the attacker solves two main tasks: achieving a higher jump and correctly determining the speed and direction of the ball's flight. Initially, attackers are taught to perform movements in three stages.

In this case, the player determining the distance should first step forward with their left foot (left foot when hitting the ball with the right hand, right foot when hitting the ball with the left hand), take a second step slightly wider than the first.

The third step should be a small step, with the toes slightly turned out. Figure shows a player's step-by-step movement while hitting their right hand (see Figure 1-2).

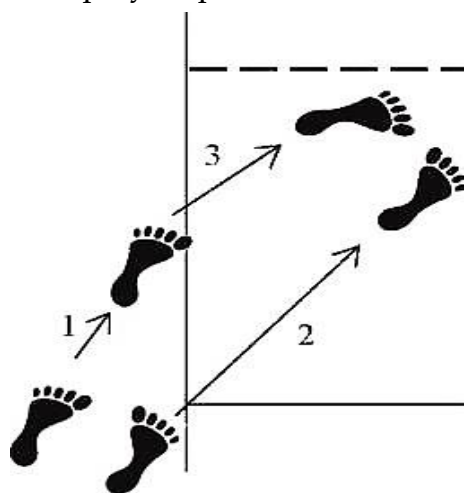


Figure 1. Step Movement of a Player Hitting the Ball with His Right Hand

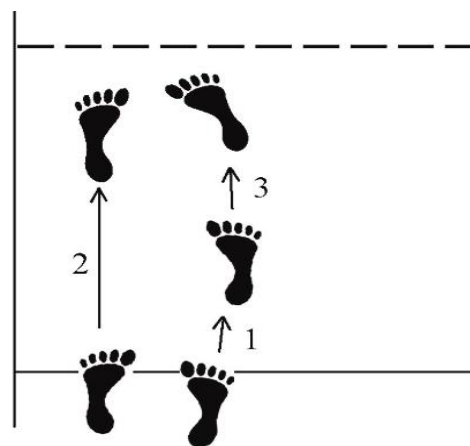


Figure 2. Step Movement of a Player Hitting the Ball with His Left Hand

In the jumping phase, the attacker takes a large step from the heel to the tip of the foot, on the last step the distance between the legs is slightly shorter than in front and the arms are drawn back. The legs are bent at the knees and the body is bent at the hip joint. Then the arms are thrown forward and up, the legs are separated from the support, and the body is

slightly bent backward and brought into an upright position. The palm of the striking hand should not be behind the head and the elbow should be just above the shoulder.

In the striking phase, the right (or left) arm is straightened at the elbow and extended upward and forward. The punch is performed by successive and sharp contractions of the muscles of the abdomen, chest, shoulders and arms. The palm of the kicker's hand strikes the ball from behind and upwards. The strength of the kick is determined by the solution of the tactical problem. At the initial stage of training it is necessary to pay attention not to the strength of the attack, but to its timing and direction (Clemens, 2012).

When landing, the attacker should land on his toes and bend his knees slightly, because this prevents damage to the locomotor system and creates comfortable conditions for the next movement.

It is not enough to complete a team attack with correct attacking strokes. That is why in modern volleyball attacking shots, which are performed by changing the direction of the ball, are more important.

The conditions for the effective solution of the motor tasks of the attackers are determined by the criterion of the speed of flight after the interaction of the ball impact. The choice of such an optimal criterion is justified by the fact that the speed of the ball after impact is often decisive for scoring points. This is true not only for the use of force, but also for other types of throws: stopping the arm and performing deceptive movements are now used by experienced volleyball players. Therefore, when solving the problem of ensuring the expediency of actions, the realization of the conditions of action efficiency is of great importance.

A. Preparatory exercises:

When learning to execute an attacking kick, two main objectives are addressed:

1. Strengthening the musculoskeletal system, developing dynamic strength in the arms and legs;
2. To be able to perform coordination actions at the level necessary to react to a moving object (ball) without support.

B. Movement development exercises:

1. Jumping from the ground with a wave-like movement of the arms;
2. Bouncing on some equipment (bench, bench), jumping down in the same position;
3. Jumping from different heights over skipping ropes;
4. Different jumps: jumping on one and two legs over gymnastics benches;
5. Jumping left, right, forward, backward;
6. High jumps;
7. Jumping while sitting;
8. Jumping on the spot, pulling knees to chest;
9. Jumping from objects of different heights;

10. Long jump sitting down;
11. Skipping rope;
12. Rubbing hands and feet with special rubber bands;
13. Performing various bending exercises;
14. Stretching exercises performed against the resistance of a partner;
15. Vibrations and circular movements on gymnastic rings;
16. Standing jumps followed by a fast run;
17. Correct execution of the attack phases when dangling the ball;
18. Imitation of attacking actions with a tennis ball in running and jumping;
19. Jumping from a height of 40-50 cm;
20. Simulating hitting in one place (moving the hitting arm forward and up);

C. Technique development exercises:

1. Throwing the ball high and hitting it without jumping;
2. Throw the ball forward and make a jump;
3. Hit the ball against a wall;
4. Do the same with a jump.
5. The exercise is done in pairs. The first player holds the ball with both hands from above. The second player jumps and hits the ball, correctly completing the phases of the attack. During the exercise, the player who hits the ball imitates the kick.
6. One player sits with the ball in his hand at a distance of 2-3 meters from the wall. He throws the ball up from his hand and kicks it to the ground. He kicks the ball again, it rises from the ground and hits the wall. Repeat the exercise several times.
7. Jumping and hitting the thrown ball in front of the net;
8. To hit a ball thrown by a partner in front of the net;
9. Executing an offensive shot from the 4th zone after a pass from the 3rd zone;
10. Make an offensive shot from the 2nd zone on a pass from the 3rd zone;
11. The players line up in the 5th zone of the field. The coach passes the ball with two hands over the net from the 3rd zone to the 4th zone. The attackers on the stretched ball, having correctly executed the phases of attack, jump and catch the ball with two hands from above. The exercise is done in the following order
12. As in exercise 11, only the attackers make a jump shot.
13. In zones 1-6 and 5, the players line up in a row. In zones 2-3 and 4, the connecting players are at the net. Players in zones 1-6 and 5 pass the ball with two hands over the top and attack. Connecting players pass the ball overhead with two hands. Connecting players are attacking.
14. Players in zones 2-3-4 are on the offensive line. The connecting player is in zone 3, the coach passes the ball from the center of the court to the connecting player in

zone 3. The connecting player passes the ball with two hands from the top of the court to one of the players moving into the 2-3 or 4 zone. The player in the passing area takes an offensive shot. The drill is done in conjunction with the players setting obstacles.

15. Executing an offensive shot at a single barrier;
16. Players spread out on both sides of the field in zone 2. Throwing the ball in the hand and making an attack.
17. Taking action on balls passed far from the net;
18. Players are positioned on the same side of the court. The coach passes the ball over the net from the other side of the court. Players in zones 1-6 and 5 receive the missed ball from underneath with both hands and pass it to the connecting player in zone 3. The connecting player passes the ball to one of the players in zones 2, 3 or 4. The attacker in the passing area takes a shot. The drill is played with players setting up obstacles.
19. According to the coach's instructions, correctly execute the attack into the specified zones;
20. Depending on the level of proficiency in attacking throws, perform exercises with obstacles in different variants.

It is recommended to effectively use the above mentioned exercises and tools in training. It is necessary to select the most effective exercises and effectively use the exercises developed by the trainer when teaching the effective execution of the attacking technique (Clemens, 2012; Pittera, 2010).

Additional tests were conducted for 6 months to determine the effectiveness of the exercises included in the training program. The results are summarized in Table 2.

Table 2. Assessment of the Level of Volleyball Players' Attacking Technique Performance Based on Special Tests (after the study) (n=10)

No.	Player	High jump from the spot (cm)	4 - stand in the zone, move to the apparatus and jump on contact (cm)	Accurately execute an offensive shot from zone 4 to zones 1, 6, 5 with the help of the passing player (3 times per zone, 9 times)	Accurately execute an offensive shot from zone 4 to zones 1, 5 with the help of a blocker (10 times).	Analysis of effective offensive shots for one period in control games (for one game)
1	M.SH	39	252	8	7	10
2	N.A.	38	250	8	8	9
3	M.A.	34	247	7	6	9
4	R.A.	33	246	7	5	10
5	A.D.	34	249	8	6	9
6	M.S.	32	248	6	6	8
7	A.Z	35	250	6	7	9
8	S.H	30	248	7	7	10
9	E.G.	37	251	7	8	10
10	T.U.	30	247	6	6	8
	ΣXi	342:10=34,2%	2488:10=248,8%	70:10=7.0%	66:10=6,6%	92:10=9,2%
	Min-max	30/39	246/252	6/8	5/8	8/10

No.	Player	High jump from the spot (cm)	4 - stand in the zone, move to the apparatus and jump on contact (cm)	Accurately execute an offensive shot from zone 4 to zones 1, 6, 5 with the help of the passing player (3 times per zone, 9 times)	Accurately execute an offensive shot from zone 4 to zones 1, 5 with the help of a blocker (10 times).	Analysis of effective offensive shots for one period in control games (for one game)
$\bar{x} \pm \sigma$		39 \pm 0,9	252 \pm 0,6	8,0 \pm 0,2	8,0 \pm 0,3	10,0 \pm 0,2

Discussion

According to the comparative analysis of the results of the study, it was found that the performance indicators of attacking technical movements of young volleyball players significantly increased after the study compared to the indicators before the study. It would not be an exaggeration to say that our recommended training micro-cycles and a set of exercises for the development of attacking movements of attackers are effective in their training process.

Thus, the attack in the game consists of analyzing the basis of successful execution of the movement, coordination of active movements of the hands and body. There is no doubt that the results obtained during pedagogical control of competitive activity serve as the main tool of the training process, especially at the stage of practicing individual technical movements of athletes (Pittera, 2010).

Discussion. When studying the results obtained based on correlation analysis, the performance indicators of attacking movements, and high jump from a place (cm) improved from 31 ± 0.9 to 39 ± 0.9 after the study. 4 - Placed in the zone, move to the device, and jump to touch (cm) improved from 240 ± 0.4 before the study to 252 ± 0.6 after the study. Accurately execute an offensive throw from zone 4 to zones 1, 6, 5 with the help of a link player (3 times per zone 9 times) improved from 6.0 ± 0.2 before the study to 8.0 ± 0.2 after the study. Accurate execution of an offensive throw from zone 4 to zones 1, 5 by a blocking player (10 times) improved from 6.0 ± 0.3 before the study to 8.0 ± 0.3 after the study. Analysis of offensive effective throws in one period in control games (per game) improved from 6.0 ± 0.2 before the study to 10.0 ± 0.2 after the study. It became clear that the offensive ability of the attackers improved. It is necessary to pay more attention in training to improve the accuracy of attackers in the accurate and effective execution of offensive actions.

Conclusion

Today, the attackers of the best modern teams are required to be agile, physically strong and tall. Nowadays it is important to select and train such attackers.

The most important stage in the training of attackers is the first training group. At this stage, along with the rational formation of the technique of rational movements of young attackers, the effective development of their performance skills was considered the key to the preparation of highly qualified athletes.

Therefore, according to the results of the above mentioned study, changes in the system of training process of this stage will contribute to the elimination of typical errors in the technical training of attackers. Such mistakes indicate the need to increase training and exercises on the basis of individual approach, in particular, on the basis of science.

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