

Application of Core Stability Training in Elementary School Football Training

Yang Bokai

Xi'an Shiyou University, shanxi, Xi'an, 710000;

Abstract: Core stability training has been gradually introduced into the field of sports training, aiding in the enhancement of athletes' dynamic balance and specialized strength qualities, with notable application effects. This study designs core stability training content based on the physical and mental development characteristics of elementary school students, which can be organically integrated with football-specific technical training. By strengthening students' control over the trunk and surrounding muscle groups, it improves body balance, movement coordination, and safety during football training, addressing common issues such as improper movement patterns and inefficient force application. This approach helps students enhance their football skills and lays the foundation for subsequent motor ability development.

Keywords: Core stability training; Elementary school; Football training; Application

DOI: 10.69979/3041-0843.25.04.083

Core stability is crucial for maintaining stability and enhancing performance in sports, as it involves key muscle groups such as the abdomen, waist, hips, and back, which are also vital for an athlete's balance and control. The elementary school stage is a critical period for students' physical development and the formation of exercise habits. Football training must simultaneously meet the needs of skill improvement, physical fitness development, and injury prevention. Core stability training focuses on the torso, strengthening the power and coordination of the waist, abdomen, back, and surrounding pelvic muscles through targeted activation and control exercises. This provides robust muscular support for children's physical growth and helps prevent skeletal development issues caused by improper movement postures.

1 Content Design of Core Stability Training in Elementary School Football Training

1.1 Core Training Content Based on Body Control

Considering the characteristics of elementary school students, such as weaker muscle strength and shorter attention spans, the basic core stability training focuses on simple, easy-to-perform, and highly engaging exercises while avoiding the use of complex equipment. Static support exercises are a key component of basic training. For example, in the kneeling plank exercise, teachers should guide students to maintain a kneeling position, with elbows bent and supporting the ground, shoulders and elbows perpendicular to the floor, feet on the ground, torso straight, and head, shoulders, hips, and ankles aligned in the same plane. Each hold should last 20-30 seconds, with a 1-minute break between sets, and 2-3 sets should be completed per training session. Such exercises effectively activate deep core muscles like the transverse abdominis and erector spinae, enhancing trunk stability.

The basic training category should also include dynamic core activation exercises, with the lying leg raise being one of them. The instructor has students lie flat on the mat, with their legs straight, slowly lifting them to a vertical position before slowly lowering them back down. During the movement, students are required to keep their lower back pressed firmly against the mat to avoid excessive core engagement. The height and speed of the leg raise can be adjusted based on the students' abilities. In the initial stages, students are instructed to perform knee-bent leg raises to reduce the difficulty of the exercise. Once core strength has improved significantly, they can transition to straight leg raises. Each training session consists of 3 sets, with 8-10 repetitions per set and a 40-second rest between sets. This approach not only strengthens the abdominal muscles but also enhances students' awareness of core muscle control.

1.2 Core Training Content Related to Football-Specific Movements

To fully leverage the supportive role of core stability training in enhancing soccer skills, it must be closely integrated with specialized soccer technique training. During dribbling drills, a combined training method of "dribbling around cones + core stability" can be designed. The specific procedure involves setting up cones on the training field with a distance of 1.5 meters between them. Students should dribble around the cones while holding the ball with one or both hands at shoulder height to maintain body balance and prevent swaying caused by directional changes. This training requires students to control the ball's direction while adjusting their body's center of gravity through core muscle engagement, improving body stability and coordination during dribbling. This addresses issues such as body swaying with the ball and rigid movements during dribbling.

Before starting shooting drills, incorporate a warm-up exercise called "Static Leg Swings with Core Control." The instructor should have students stand with feet shoulder-width apart, arms akimbo, and simulate shooting movements by performing static leg swings. During the swings, maintain upper body stability and avoid excessive torso twisting. The instructor must closely monitor student movements and promptly correct any forward or backward torso tilting caused by insufficient core control. This ensures the force from leg swings is transmitted through the core to the feet, improving shooting efficiency. Perform 10-12 leg swings per set, complete two sets, and then proceed to formal shooting drills. This approach strengthens core control abilities during specialized training.

1.3 Core Training Content Incorporating Game Elements

Given that elementary school students have a high acceptance of game-based training, integrating core stability exercises into football-related games can effectively enhance their engagement. A game called "Football Core Passing Game" can be designed, where students are divided into groups of 4-5, forming a circle with a diameter of 5 meters. Each student holds a soft football and passes it to their neighbor while maintaining a half-squat position. During the passing, students must keep their torso stable, avoiding bending or excessive lateral movement. If significant body sway occurs during passing, the activity should pause, requiring the student to hold a static abdominal bridge for 5 seconds before continuing. This game not only improves students' core control through interaction but also fosters teamwork, aligning with the psychological characteristics of elementary school students.

A "Core Stability Obstacle Challenge" game can also be designed, where low hurdles, small mats, and other obstacles are set up in the training area. Students must quickly navigate the obstacles while holding a small sandbag in each hand to maintain upper body stability and prevent the sandbags from falling. Teachers can record the time each group takes to complete the obstacle course, offering verbal praise to the groups with shorter completion times and no sandbag drops. This approach fosters students' competitive spirit and training enthusiasm, allowing core stability training to take place in a relaxed and engaging game atmosphere.

2 The Implementation Path of Core Stability Training in Primary School Football Training

2.1 Training schedule that matches the football training cycle

One of the important principles to ensure training effectiveness is to integrate core stability training into the complete cycle of primary school football training, avoiding fragmented development. In the basic training stage at the beginning of the semester, the proportion of core stability training in the total training time needs to be appropriately increased, with basic core activation movements as the main focus, to help students establish core control awareness and prepare for subsequent specialized training. For example, in the warm-up phase of each training session, 5-8 minutes of dynamic core training, such as lunges and high leg lifts, should be added to replace traditional jogging warm-up exercises, allowing students to activate their core muscle groups during the warm-up phase.

In the specialized improvement stage of the semester, the proportion of core stability training in the total training time can be appropriately reduced. The focus should be on combining with specialized technical training such as passing, dribbling, and shooting to improve students' core control ability in specialized movements through combination training. For example, after the specialized training of dribbling, a 10 minute "dribbling emergency stop core support" training should be arranged, allowing students to quickly run 5 meters with the ball and then stop, immediately enter a 3-second single leg support core stability posture, and continue dribbling, repeating 10-12 times to strengthen their core support ability in

emergency stop movements.

In the consolidation stage at the end of the semester, the proportion of core stability training in the total training time can be further reduced, with dynamic core training and game training as the main focus. Through diversified training forms, students' interest in training can be maintained, and the effectiveness of core stability training can be tested to provide a basis for adjusting the training plan for the next semester. For example, in the final training, a "Core Training Achievement Exhibition Competition" can be held, allowing students to complete basic core movements such as plank support and supine leg lifting in groups, combined with special movements such as dribbling around piles, to comprehensively evaluate students' core control ability and football skill level.

2.2 Layered training strategy based on individual differences among students

Due to significant differences in physical fitness among primary school students, a layered design is required for core stability training to avoid a one size fits all training model. The specific stratification method is to divide students into three levels based on their core strength level: basic group, improvement group, and advanced group. The basic group students mainly focus on static support training, such as kneeling flat support, supine bending and leg lifting, with lower difficulty. The emphasis is on cultivating the activation and control awareness of the nuclear heart muscle group. The advanced group students can engage in dynamic core training, such as side flat support rotation, standing posture leg lifting, etc., to increase the difficulty and coherence of the movements. The advanced group students can try to combine core training of football equipment, such as ball holding lunge rotation, dribbling direction change core control, etc., to improve the combination of core abilities and special skills.

2.3 Training management that emphasizes action norms and safety guarantees

Considering the limited understanding and imitation ability of elementary school students towards movements, it is necessary to strengthen guidance on movement norms in core stability training to avoid sports injuries caused by movement errors. Before the training starts, the teacher needs to explain the key points of the movements in detail, combined with their own demonstration and slow motion videos, so that students can clearly understand the correct posture of the movements. For example, when performing plank support, it is important to emphasize that "the waist should not collapse and the hips should not be lifted" to avoid students from suffering from fatigue due to excessive force on the waist. During the training process, the teacher needs to observe each student's movement one by one, provide individual guidance to students who do not follow the standard movements, and adjust their body posture with hand assistance to help them find the correct muscle strength.

The prerequisite for implementing core stability training in primary school football training is to ensure safety. When selecting the training venue, it is necessary to choose a flat and soft ground, such as a plastic field or an indoor field with mats, and avoid conducting support training on a hard cement ground to reduce joint impact. When selecting training equipment, it is necessary to meet the physical characteristics of primary school students and avoid heavy or hard equipment from causing harm to their bodies.

4 Closing remarks

In summary, the primary school stage is a crucial stage for cultivating the basic abilities of football players, and core stability training has a positive impact on the skill level and physical fitness of primary school football players, which can improve students' physical fitness, sports ability, and football competition level. By using various training methods to exercise core muscle groups and applying specialized strength to key muscle groups to improve physical endurance, we can guide the practice of primary school football training and comprehensively enhance students' balance and control abilities.

References

- [1] Lu Guangbao, Xing Junmin Experimental Study on the Effect of Core Stability Training on the Balance Ability of Primary School Football Players [J]. Journal of Hanshan Normal University, 2022, 43 (3): 61-68
- [2] Hao Gang Application of Core Stability Training in Youth Football Training [J]. Youth Sports, 2019,0 (6): 51-52