International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3): May-June 2023, page 185-190. ISSN: 2774-0366
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index
DOI: https://doi.org/10.14456/jsasr.2023.45

Appreciation of Core Strength Training Programs to Enhance Football Basic Skills of Students in Shaanxi

Li Zongtai[1], Chanchai Siriphan[2]
[1,2]Faculty of Sports Science and Technology, Bangkokthonburi University, Thailand
[1]E-mail: 812134905@qq.com, ORCID ID: https://orcid.org/0009-0008-6616-6034
[2]E-mail: Chanchai-2549@hotmail.com, ORCID ID: https://orcid.org/0009-0000-9981-655X
Received 12/05/2023 Revised 22/05/2023 Accepted 22/05/2023

Abstract

Background and aims: Football is a sport that combines strength, technology, and strategy. Strength is the core element of football's competitive ability. Football has high requirements for athletes' physical strength. It requires athletes to well control the balance and stability of the trunk, hips, limbs, and other muscle groups, and then carry out technical training on this basis**.** The objectives of this research were: (1) to develop training by applying core strength trying to improve the football skills of 16-18 years old in Shaanxi; (2) To study the effects of core strength training programs to enhance football basic skills of students 16-18 years old in Shaanxi; (3) To compare football basic skills between before and after core strength training programs.

Methodology: This research selected 30 football players with high attendance rates in daily training from Baoji City, Shaanxi Province Fang Tang senior high school (16-18) to participate in my research and divided them into the experimental group and the control group. The subjects participated in 8 weeks of training by using core strength training programs and football basic skills tests. Analyzed the results of the pre-test and post-test by using comparative statistics.

Results: The results were as follows: (1) improving core strength through training is feasible for football players to develop basic football skills; (2) new core strength training is more effective than traditional training methods; (3) for different basic football techniques, the impact of core strength is not the same, with some techniques relying more on core strength and others not; (4) to achieve satisfactory results, it is necessary to train for a long time and continue to develop training strategies and continuously improve the training plan during training.

Conclusion: It is basically feasible to improve the basic football skills of football players by adopting a new type of core strength training but to effectively improve the basic football skills of players, it is still necessary to rely on special technical training to achieve the desired effect. As basic physical quality training, core strength training can only play an auxiliary role in improving the basic skills of players. However, based on the current experimental results and experience summary, core strength is still of high importance for football technology.

Keywords: Strength Training; Football Basic Skills; Core Strength

Introduction

Football is a sport that combines strength, technology, and strategy. Strength is the core element of football's competitive ability. Football has high requirements for athletes' physical strength. It requires athletes to well control the balance and stability of the trunk, hips, limbs, and other muscle groups, and then carry out technical training on this basis. To improve the muscle group strength of football players, scientific core strength training is required, the core strength training is the basis for the strength improvement and technical action development of football players and is crucial to the comprehensive strength improvement of football players.

At the present stage, China is only at the beginning stage in terms of physical fitness training for football. Many athletes still use traditional core strength training methods, such as sit-ups, flat support, and other simple and repetitive training. Therefore, I hope to improve this situation through my research, so that football players can use a new and effective training plan to improve their core strength, and then improve their football level. Moreover, Core strength training plays a role in promoting body coordination, movement speed, and balance ability, and has a certain role in enhancing football technology, especially for the basic football technology with the possibility of physical confrontation, such as the technology of fighting for the high-altitude ball after takeoff, and the physical confrontation technology during the interception.

Based on the above facts, as core strength training and campus football education have an indispensable connection and far-reaching impact, this article will study the impact of core strength training on the basic technology of campus football, based on the research, summary, screening, and induction of traditional training methods, We will design a new set of core strength training program suitable for the development of campus football in China at the present stage, rely on the new core

Citation: Li, Z., & Siriphan, C., (2023). Appreciation of Core Strength Training Programs to Enhance Football Basic Skills of Students in Shaanxi. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 185-190; DOI: https://doi.org/10.14456/jsasr.2023.45

International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3): May-June 2023, page 185-190. ISSN: 2774-0366
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index
DOI: https://doi.org/10.14456/jsasr.2023.45

strength training method I designed to provide support for campus football training, and at the same time provide some feasible suggestions and worthwhile teaching or training ideas for the majority of football coaches and football players.

Objectives

1. To develop training by applying core strength trying to improve the football skills of 16-18 years old in Shaanxi;
2. To study the effects of core strength training programs to enhance football basic skills of students 16-18 years old in Shaanxi;
3. To compare football basic skills between before and after core strength training programs.

Literature Review

At this stage, China's sports cause is under the great prospect of rapid development. However, for football projects, if they want to enter the high-speed development stage, the reform of the system and training methods is essential. The traditional training methods will certainly be replaced. We need to pursue more scientific and efficient training models and methods.

In football training, traditional methods always rely on a flat support, sit-ups, one-arm side support, and other methods to train core strength, but most of these traditional methods use static strength training, which is obviously not appropriate for football projects with high dynamic requirements, This traditional way of core strength training not only has a low effect conversion rate for football projects but more seriously, a large number of static training also has damage to human joints. It is precise because of the extremely low conversion rate for football projects that even if many traditional trainings have been done, it is difficult to play an effective role in the field and cause injuries. Therefore, the new training methods we need to study at this stage must be scientific and efficient. The core strength training method summarized in this paper attempts to increase the dynamic strength training as much as possible, to strengthen the core strength area. With more comprehensive core strength training skills, football players can conduct core strength training more efficiently and safely than traditional training methods. Only with good core strength, football players can make smooth and coordinated body movements as much as possible in the game, which not only ensures the fluency of the force but also ensures the balance of the body. While performing the technical movements efficiently, can protect the players to the greatest extent of safety and keep away from the risk of injury as much as possible.

2. Core Strength

The importance of core strength is self-evident for any sport, and it even directly affects your normal walking ability. The area responsible for core strength is the key area connecting the upper body and lower body. If you want to have excellent sports performance, core strength training is essential. Core stability is the beginning of core strength research, and the concept of core strength is based on core stability research. Lu, G., Li Yongming, and others from Tsinghua University believe that the muscle groups, ligaments, and connective tissue in the core area directly cooperate with each other to form core strength. Zhao Jia believes that core area strength is the ability of core area muscles to stabilize the body's core area and center of gravity while generating the most effective displacement and rotation of the human body. Through the above analysis, we can define core strength as the force generated by the contraction of all muscle groups and ligaments attached to the core area under innervation conditions. (Lu, G., and Li Yongming, 2018).

The core specialized strength training is different from the traditional strength training. It is different from the single joint strength training in traditional strength training. It emphasizes the coordinated force of muscles and focuses on the role of core strength in special sports. In training, it is important to have obvious acceleration and deceleration in the movements, so that the movements can obtain sudden explosive force at the end of the limbs, to stimulate the enhancement of muscle strength, and during this process, cooperate with breathing to complete the corresponding training. The equipment can be solid balls, dumbbells, barbells, elastic bands, or specialized training equipment. In football, specific core specialized strength training actions include throwing the solid ball in a kneeling position, three-point support in the kneeling position, three-point touch with one leg support, flat support, head touch with both hands, barbell squatting in vigorous steps, etc. During specific training, various combinations can be used to form the core strength training systemic circulation for practice. The duration or repetition of each action can be determined by participating in the athletes' sports ability. The interval between groups and the interval of systemic circulation should be designed according to

Citation: Li, Z., & Siriphan, C., (2023). Appreciation of Core Strength Training Programs to Enhance Football Basic Skills of Students in Shaanxi. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 185-190; DOI: https://doi.org/10.14456/jsasr.2023.45

International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3): May-June 2023, page 185-190. ISSN: 2774-0366
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index
DOI: https://doi.org/10.14456/jsasr.2023.45

different athletes, Athletes need to practice the next group without complete recovery during the training process to achieve better training accumulation. (Chen, H., & Liu, Y., , 2020)

2. Core Strength Training Methods

Core strength training is the training of strength, stability, and balance of muscles in the core strength area of the human body. The purpose of core strength training is to improve body stability and limb coordination. Compared with traditional strength training, the training methods used by the two are different. The reason for the difference lies in the training purpose. For example, core strength training has a preventive effect on sports injuries, but traditional strength training does not have this function. At the same time, core strength training is aimed at different muscle groups from traditional strength training. Core strength training has targeted stimulation on both the large and small muscle groups of the human body, but traditional strength training has a more obvious stimulation effect on the large muscle groups and is not enough for the small muscle groups. (Ran, J., 2021). In addition, the selection of equipment for core strength training is also quite different from that for traditional strength training. For example, core strength training is more inclined to use Swiss balls, elastic belts, and solid balls, which are relatively light equipment, but traditional strength training is more inclined to use dumbbells, barbells, kettlebells, and other equipment with larger weights.

Conceptual Framework

The research title "Appreciation of Core Strength Training Programs to Enhance Football Basic Skills of Students in Shaanxi", was designed as a conceptual framework as followed; [Chu, N., 2019; Wu, Y., Xu, J., & Zeng, X., 2019; YuBo. 2013; Zhang, Q., 2021]

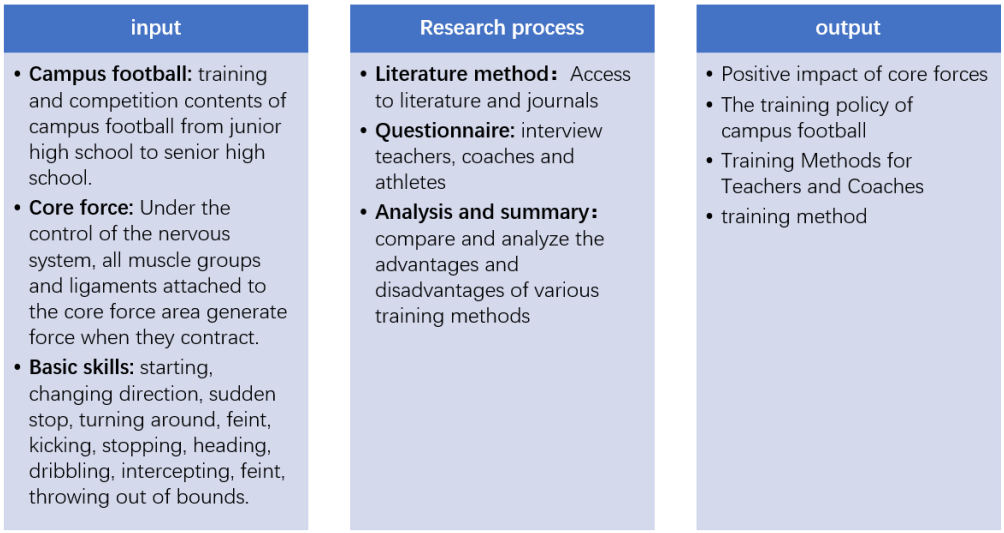

Figure 1: Research Conceptual Framework

Methodology

This research is the type of research survey, teaching and training contents, and curriculum development.

1. Population and sample: The population of the research is Baoji City, Shaanxi Province Fang Tang senior high school (16-18 years old student). The above school has 1,500 students in total. After the communicating with the coach of the school football team of the school's sports teaching and research group, he recommended 30 football players with a high attendance rate in daily training to participate in my research.

2. Research instruments:

2.1. Interviewing form
2.2. Core strength training programs
2.3. Football basic skills test

3. Data collection:

3.1. Interviewing of experts.
3.2. Data results of pre-test and post-test.
3.3. Training with core strength training programs.

Citation: Li, Z., & Siriphan, C., (2023). Appreciation of Core Strength Training Programs to Enhance Football Basic Skills of Students in Shaanxi. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 185-190; DOI: https://doi.org/10.14456/jsasr.2023.45

International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3): May-June 2023, page 185-190. ISSN: 2774-0366
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index
DOI: https://doi.org/10.14456/jsasr.2023.45

4. Data analysis

4.1. Analysis of Validity program: Indexes of items of objective congruence: IOC.

4.2. Pre-test And post-test: comparative statistics.

5. Research process: The research process is as follows:

Step 1: Review literature: (1) Relevant content of football technology. And (2) Relevant content on core strength.

Step 2: Draft the concept framework: (1) Discuss with relevant practitioners. And (2) Consult relevant data.

Step 3: Create core training programs: Summarize ideas from experts to daft Create core training programs.

Step 4: Validating the program: (1) Create a questionnaire for face validity with IOC. And (2) Summit research ethical permission Step.

Step 5: Experiment operation with 1 group experimental design: Set Experiment operation with 1 group experimental design by Pre-test and Post-test. 8 weeks, twice a week.

Step 6: Collect data and analysis: Summary and interpret the data.

Results

Through interviews and research, I have preliminarily grasped the views and suggestions of experts and coaches on whether core strength training can effectively improve the basic football skills of players. After summarizing the previous training methods, after eight weeks of data collection and comparative analysis before and after the test, I have also preliminarily mastered the impact of the new core strength training methods on the basic football skills of the tested players. The results and analysis were as follows: (1) core strength training can have a positive impact on players' basic football skills; (2) new core strength training is more effective than traditional training methods; (3) for different basic football techniques, the impact of core strength is not the same; (4) the new core strength training mode is more in line with the needs of the real field for football technology.

1. Comparison Table of Some Traditional/New Core strength training methods.

Traditional core strength training (Static training)		**New core strength training mode (Dynamic training)**	
Training content	**Practice method**	**Training content**	**Practice method**
Prone plank (and its variants)	Lie prone with arms on the ground, toes on the ground, back straight, and maintain a posture (can be supported with palms or arms, one or both hands, one or both feet)	Oblique Leg Lift	In a supine position, lift your legs together and perpendicular to the ground, alternating left and right to swing your legs as much as possible.
side Prone plank	Lie on your side with your arms perpendicular to the ground, keeping your body and legs straight and forming a triangular support with the ground.	The Supine Gluteal bridge uses a Swiss ball	Lie on your back, place your legs on the Swiss ball, keep your waist and abdomen straight, and bend your legs to pull the Swiss ball, keeping your thighs and back straight.
traditional Crunch	Lie on your back, bend your legs and step on the ground, hold your arms in front of your chest, and bend your abdomen so that your chest touches your thighs or knees as much as possible. Or lie flat on the waist and bend the knees, so that the	Prone Planks use a Swiss ball	Lie on your stomach, support your hands on the ground, press your legs straight onto the Swiss ball, use your hip joints to pull the ball towards your abdomen, and keep your back straight.

Citation: Li, Z., & Siriphan, C., (2023). Appreciation of Core Strength Training Programs to Enhance Football Basic Skills of Students in Shaanxi. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 185-190; DOI: https://doi.org/10.14456/jsasr.2023.45

International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3): May-June 2023, page 185-190. ISSN: 2774-0366
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index
DOI: https://doi.org/10.14456/jsasr.2023.45

Traditional core strength training (Static training)		New core strength training mode (Dynamic training)	
Training content	**Practice method**	**Training content**	**Practice method**
	abdomen curls up to the highest point and recovers.		
Supine Gluteal bridge	Lie on your back, place your hands on your side, bend your knees together, straighten your abdomen, and form a triangular support between your body and the ground.	Kneeling Throw	Kneeling position, extend your hands to hold the medicine ball, spread your abdomen, and then throw the ball forward.
		Horizontal Twist Throw	Stand in a standing posture, with legs slightly bent and separated, holding the medicine ball with both hands and turning to one side, then throw the ball out with the flow.

2. The following are the testing and evaluation methods for two basic football technical abilities influenced by the core strengths discussed in this article.

2.1. Head Heading (header): Two people gather for 5m to 10m, one person throws the ball, the other person heads the ball, and then exchanges. The requirements are: head heading the ball in place and jumping head heading the ball while running, pushing the ball in the designated direction, coordinating the movements, and the head heading force is large, and the distance from the distance is accurate. The technical actions are correct, the effect is good for 5 points, good for 4 points, and average for 3 points.

2.2 Chest Stop (chesting): Two people gather for 5m to 10m, one person throws the ball, and the other person makes a chest stop, and then exchanges. Require chest up to receive the ball, coordinated movements, and good stopping effect. Correct technical movements, chest touch for more than 1 second for 5 points, steady stop for 4 points, and stop for less than 1 meter for 3 points.

2.3 Comparative analysis of basic football skills between the pre and post-test experimental group and the control group

Group	Project	Number of people	Pre-test average score	Post-test average score	Mean Difference
Control group	Chesting	30	3.466	3.666	0.200
Experimental group	Chesting	30	3.433	3.666	0.233
Control group	Header	30	3.666	3.866	0.200
Experimental group	Header	30	3.566	3.900	0.334

The control group using the traditional core strength training method has basically the same progress efficiency in the chest stop and head ball techniques, both slightly improved, while the experimental group using the new training method has higher progress speed in the head ball techniques than the chest stop.

Discussion

The traditional core strength training method is usually a static training method. The specific training implementation process is achieved through the remote support of human limbs, without the use of any training equipment, to enable athletes to experience how the core parts exert force to maintain body balance during training. A closed-loop motion chain is used to deeply stimulate the core muscles, mainly to strengthen the stability of the core local and deep muscle groups. The new type of core strength training is different from the traditional one. It emphasizes the coordinated force of muscles

Citation: Li, Z., & Siriphan, C., (2023). Appreciation of Core Strength Training Programs to Enhance Football Basic Skills of Students in Shaanxi. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 185-190; DOI: https://doi.org/10.14456/jsasr.2023.45

International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3): May-June 2023, page 185-190. ISSN: 2774-0366
Website: https://so07.tci-thaijo.org/index.php/IJSASR/index
DOI: https://doi.org/10.14456/jsasr.2023.45

and the role of core strength in special sports. In training, it is important to have obvious acceleration and deceleration in the movements, so that the movements can obtain sudden explosive force at the end of the limbs, to stimulate the enhancement of muscle strength, and during this process, cooperate with breathing to complete the corresponding training.

It is basically feasible to improve the basic football skills of football players by adopting a new type of core strength training but to effectively improve the basic football skills of players, it is still necessary to rely on special technical training to achieve the desired effect. As basic physical quality training, core strength training can only play an auxiliary role in improving the basic skills of players. However, based on the current experimental results and experience summary, core strength is still of high importance for football technology. From the perspective of the balance ability of football special students, core strength training is better than traditional strength training, and in normal football strength training, coaches should focus on core strength and intersperse traditional strength training. (Lu GengZhi, 2018). If you want to continue to develop core strength training strategies, you still need a lot of time to improve the training content and improve the pertinence of training.

Recommendations

1. Call for the vigorous development of various basic physical fitness training programs with core strength as the main focus, innovate training modes and methods, enrich campus football training content, and explore training ideas and innovative plans for physical education teachers.

2. Some coaches may report that the actual effectiveness of the new training method may be lower than the expected level, due to the difficulty in accurately monitoring all players. Players with weaker core strength may have behaviors of not doing their best or even slacking off during training. Traditional training methods usually only consider increasing or reducing training time to control the load level, The new training method requires athletes to dynamically adjust or adjust their movement speed, so in actual operation, it is not only necessary to control the training duration but also to observe the frequency of movements at the same time. According to the requirements of different levels of athletes' movement frequency, the required load can be effectively achieved, thereby improving the training effect, and achieving the expected training benefits.

3. Developing core strength to improve the basic football skills of football players is a feasible direction, which can reduce the impact of other basic physical qualities on players. Of course, the sports characteristics of these technologies themselves cannot be ignored, and these sports characteristics can also have a positive transfer to certain specific other sports, Therefore, we can consider strengthening core strength training for other sports and exploring its positive impact or continue to research football projects and explore new educational methods to enhance the impact of campus football.

References

Chen, H., & Liu, Y., (2020). Theory and Method of Core Strength Training in the Steady State of Football. *Sports Vision*, 08(2022), 045-046.

Chu, N., (2019). Experimental Research on Core Strength Training in Football Teaching. *SPORT SCIENCE AND TECHNOLOGY*, 2(40), 142-143.

Lu, G., (2018). *Research on the influence of core strength training on the balance ability of football students.* Master's degree thesis of Nanjing Normal University.

Ran, J., (2021). *A Study on the Influence of Core Strength Training on Junior High School Students' Basic Soccer Techniques.* Master's degree thesis of Liaoning Normal University.

Wu, Y., Xu, J., & Zeng, X., (2019). Discussion on the function and method of core strength training for football players. *Sports World,* 4(790),80-81.

Yu, B., (2013). *An experimental study on strength training on young football player overhead stroke skill development.* Master's degree thesis of Shenyang Sport University.

Zhang, Q., (2021). Research on the Evaluation Standard of Football Skills in Senior High School-Take the Secondary School Affiliated to Shanghai Normal University as an Example. *Contemporary Sports Technology.* 11(10), 198-200.

Citation: Li, Z., & Siriphan, C., (2023). Appreciation of Core Strength Training Programs to Enhance Football Basic Skills of Students in Shaanxi. International Journal of Sociologies and Anthropologies Science Reviews (IJSASR), 3 (3), 185-190; DOI: https://doi.org/10.14456/jsasr.2023.45