

# Research on the Present Situation and Countermeasures on Higher Vocational Colleges of Core strength training: An Example of Guangdong Polytechnic of Water Resources and Engineering

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**Abstract:** In order to this articles uses the literature method;questionnaire survey method;expert interview;mathematical statistics;logical analysis research methods.The results show that:provde people foundation,Research on the present situation and countermeasures on Higher Vocational Colleges of Core strength training: Hope that this article how the higher vocational colleges district better to provide reference for the theory and practice.

**Keyword:** HigherVocationalColleges; Corestrengthtraining; Presentsituation; Countermeasures

Core strength is a collective force generated by the coordinated contraction of core muscles. The muscle groups involved in core strength mainly include the trunk muscle group, posterior muscle group, and lateral muscle group of the human body. Good core strength can maintain the basic posture of the body in a stationary or moving state, maintain balance and stable movements, which is also an indispensable factor for high-level sports teams to achieve excellent results. This article attempts to use the investigation and research on the current situation of core strength training for high-level sports teams in schools as a breakthrough point, providing theoretical and practical basis for the physical fitness training of high-level sports teams in vocational colleges.

## 1 Research Methods

### 1.1 Literature review method

By consulting databases such as China National Knowledge Infrastructure, Guangzhou Sport University Library, and Sun Yat sen University Library over the past decade, a large number of relevant books and literature materials have been collected. By analyzing and organizing the literature, provide theoretical basis for the research in this article.

### 1.2 Questionnaire survey method

A questionnaire survey was conducted among domestic experts using the Delphi method to determine research indicators. According to the research needs of this article, two sets of questionnaires will be developed for athletes and coaches. A total of 127 questionnaires were distributed to various high-level sports teams in our school, and 116 valid questionnaires were collected, with an effective response rate of 91.34%. The reliability and validity of the survey questionnaire were tested, and the results confirmed that the survey results were credible and reliable.

### 1.3 Field investigation method

We conducted on-site visits to experts from vocational colleges regarding the training of core strength for high-level sports teams, and obtained practical research materials.

### 1.4 Mathematical and Statistical Methods

Use EXCEL software and traditional percentage statistics to process and analyze data.

### 1.5 Logical Analysis Method

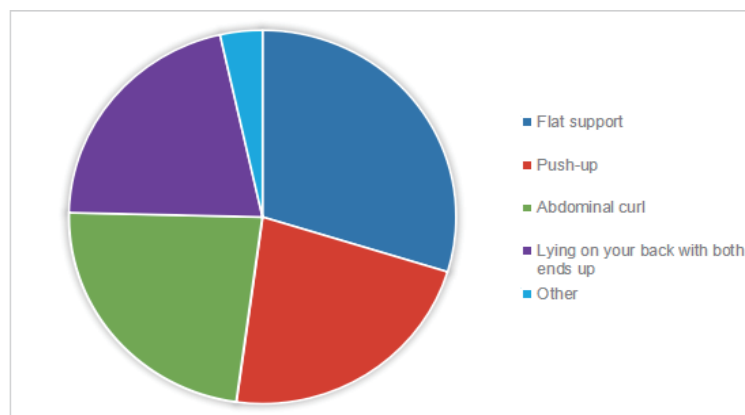
Use inductive and analytical methods to organize and analyze the collected data.

## 2 Analysis of the current situation of core strength training for high-level sports teams in our school

### 2.1 Awareness of Core Strength Training

In a survey of athletes, it was found that 97.91% of male athletes and 91.67% of female athletes are accustomed to the concept of “core strength training”, and a small number of athletes are not familiar with it. This indicates that core strength training has long been deeply rooted in people’s hearts and athletes have a high level of attention. In the survey on “What areas do you know about the core strength include”, it was found that only 17.93% of athletes know this concept, and the proportion of coaches who know this area is much higher than that of athletes, reaching 89.97%.

Figure 1 shows that the three core strength training methods currently used by high-level athletes in our school, namely plank support, push ups, and sit ups, account for the largest proportion, reaching 81.37%. The author learned from asking some athletes that there are two reasons why they choose these three core strength training methods: firstly, they know that there are few core strength training methods themselves, and secondly, these three training methods do not require strength training equipment and can be easily operated in dormitories or open spaces. In a survey questionnaire on “Core Strength Training Methods” among coaches, it was found that 61.28% of coaches knew more than six core strength training methods, and 30.89% of coaches knew more than nine core strength training methods. In the survey on “Training Methods for Specialized Core Strength of Our Sports Team”, it was found that 56.72% of coaches have limited understanding.



**Figure 1. Selection method for athlete core strength training**

### 2.2 Current Status of Core Strength Training Applications

According to a questionnaire survey and on-site visits, the current application of core strength training in our school's high-level sports teams shows that the three core strength training methods account for the largest proportion, which is relatively optimistic compared to other vocational colleges. This year, the author led the school's men's and women's volleyball teams to participate in the 2022 Guangdong Provincial College Volleyball League and won the runner up in the men's Group 3A. The women's team also achieved excellent results by winning the eighth place in the women's Group 3B for the first time since the establishment of the school. My post match reflection is not only related to technical and tactical training, but also to the core strength training of the men's and women's volleyball teams. In order to improve sports performance, the author focuses on the physical training of sports teams. Adopting fixed weekly specialized physical training, combining two tactical training sessions with one core physical training session, and flexibly arranging core strength training in special circumstances such as rainy days. I have also organized two regular core strength training sessions for some high-level sports teams in the school under the arrangement of department leaders. Through on-site visits, it was found that other vocational colleges, especially private vocational colleges, provide less training in this area for high-level athletes, only 10.2%.

At present, the proportion of strength training rooms in vocational colleges is 9.83%, which is relatively small, and this is related to the investment of funds in relevant vocational colleges. At the same time, from another perspective, it can also be seen that the school's relevant leaders attach great importance to sports construction. The proportion of vocational colleges without strength training rooms is relatively large, reaching 53.47%. 37.86% of schools, although lacking strength training rooms, have taken timely remedial measures by using simple strength equipment for training, such as barbells, dumbbells, yoga mats, and other practical training equipment. But compared to the scientific training of high-tech equipment today, its training effect is far from enough. It should be noted that during the visit, it was found that some vocational colleges did not arrange core strength training for high-level sports teams.

### 2.3 The importance attached by school leaders to physical training

As a national "Double High Plan" construction unit and a national backbone vocational college, Guangdong Water Conservancy and Electric Power Vocational and Technical College, a high-quality water conservancy vocational college in China, follows the path of connotation development and characteristic development in education. The school insists on talent cultivation as the center and attaches great importance to the construction of sports venues. Currently, one comprehensive hall has been built, which includes two comprehensive strength training rooms that will soon be put into use, providing better physical training conditions for teachers and students in the college. According to the understanding of the importance attached by relevant leaders of other vocational colleges to the construction of sports venues, 60.15% of them attach great importance to the construction of sports venues, indicating that the construction of sports venues has received sufficient attention from relevant leaders of the school. However, in terms of investment in sports venue construction funds, 46.29% of vocational colleges will prioritize investment in professional construction.

## 3 Development strategies for core strength training of high-level sports teams in our school

### 3.1 Adopting the "Please come in and go out" training method

In response to the current understanding and application status of core strength training for our school's high-level sports teams, we adopt the "come in, go out" training method. Please come in "and invite relevant physical training experts to give lectures at our school. Coaches and athletes from various projects will listen on site and ask questions to clarify any issues that arise during training. Going out "means going out to participate in various coach training courses organized by the Provincial Department of Education. Our school leaders attach great importance to the training and further education of physical education teachers. Therefore, over the years, various coaches have participated in training and further education in basketball, volleyball, football, aerobics, athletics, badminton and many other projects. Through training and further education, coaches have flexibly applied advanced training methods and concepts from external training to project training, and have achieved significant results.

### 3.2 Increase the proportion of core strength training

Our school achieved excellent results in many events such as basketball (men's and women's teams), volleyball (men's and women's teams), track and field football, aerobics, cheerleading, street dance, badminton, swimming, etc. in the 2022 Guangdong Provincial College Student Sports Competition. The achievement of results cannot be separated from the diligent training of various high-level sports teams. At the same time, through external competitions and exchanges, it has been learned that the champion sports teams in each group have not only undergone technical and tactical training, but also increased scientific and systematic physical training, with a large proportion of specialized core strength training. It should be noted that when conducting core strength training for athletes, the following three principles should be adhered to: first, the training should be combined with the characteristics of the sport; Secondly, targeted training should be conducted based on the athlete's position on the field; The third is to choose an appropriate exercise load, gradually increasing the prevention of sports injuries step by step. Through field investigations of championship teams from other universities, the author found that 83.7% of universities have gradually increased the proportion of core training in their regular training, from 10.3% at the beginning to 36.2% today. Therefore, if our school's high-level sports team wants to achieve excellent results and create brilliance, it must attach importance to and increase the proportion of core strength training.

### 3.3 Reasonably arrange strength training time and improve the utilization rate of strength training rooms

The school fully implements the Opinions of the Central Committee of the Communist Party of China and the State Council on Strengthening and Improving School Sports Work in the New Era. Currently, our school has built a comprehensive sports hall, and the strength training room inside the hall is about to be put into use. This strength training room is open to all teachers and students, and also has teaching tasks for physical training elective courses. There is a scheduling issue between teacher and student training, physical fitness training classes, and high-level sports team training. Therefore, it is necessary to have a dedicated person to effectively manage, coordinate training time in all aspects, arrange strength training time reasonably, and improve the utilization rate of strength training rooms.

### 3.4 Increase funding for strength training equipment

With the increasing demand for strength training and high-level sports team training among teachers and students, it is recommended that schools gradually increase their investment in strength training rooms, purchase necessary equipment for physical fitness training, and provide sufficient material support for the development of various sports work in schools.

## 4. Conclusion

Core strength training exists in all sports, and all sports movements are centered around the central muscle group in the movement chain. A strong core muscle group plays a stabilizing and supportive role in body posture, motor skills, and specialized technical movements during exercise. Therefore, if we want to improve the overall performance of high-level sports teams, we need to put in a lot of effort in core strength training and develop a core strength training system that is suitable for each high-level sports team. This is also the direction of my future efforts.

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