

# Main Points of Teaching and Training of Multi-Media Technology in Takraw

Yaru Chen

Tianjin Foreign Studies University, Tianjin, 300011, China

**Abstract.** Multimedia information technology is an indispensable thing in modern school teaching. The introduction of PPT in the course and the use of multimedia equipment let us know the importance of multimedia. Multimedia-assisted teaching is one of the modern teaching methods. It can not only effectively stimulate students' interest in learning, but also improve classroom learning efficiency. Nowadays, multimedia teaching has become the main means of teaching cultural courses, but its application rate in physical education is still very low. How to combine physical education courses with modern technology has become a gap that must be overcome in physical education teaching innovation. It is precisely because of this that more and more scholars and educators have devoted themselves to the research of physical education informatization.

**Keywords:** Multi-media Technology; Rattan Ball Teaching; Main Points.

## 1. Introduction

The takraw game originated in Southeast Asia. Introduced into my country in 1987, it has been popularized and developed in our country so far. Takraw uses its own ankles, knee joints, etc. to clamp and head the ball at the same time, preventing the ball from falling, similar to Chinese folk kicking shuttlecock. Takraw is similar to volleyball. Today, we analyze and record the main points of the teaching and training of takraw sports multimedia technology through the use of multimedia.

## 2. Main Points of Teaching and Training of Takraw Multimedia Technology

The teacher first demonstrates technical movements, such as a pass with the instep, a pass with the outside of the foot, a pass with the thigh, and a pass with the head, etc. (Only 1-2 technical movements are explained in each class). Highlight key points in the demonstration.

### 2.1 Multimedia Decomposition Technology Action, Emphasizing the Key Points of Each Detail

Using the slow playback, playback, handwriting and other functions of the multimedia courseware, the technical actions of the first pass are decomposed and narrated. Analyze the seemingly single technical action of a single pass. The first is to determine the position of the ball, the second is to select the support feet and the ball to catch the ball, and the third is to catch the ball. In the process of catching the ball, you should pay attention to the point of contact and the strength of the ball. The grasp of the ball, and finally the swing action after catching the ball. Every detail action will pass the effect to the left and right, and the action correction can only be done by decomposing and telling.

### 2.2 Demonstration Again, Overall Perception

Although there are 4 detailed movements in a pass, the time used in the actual catching process is only an instant, so the coherence and overall grasp of the detailed movements are the key. Therefore, teachers and multimedia should demonstrate again in this link to help students perceive the movement as a whole.

### 2.3 Self-experience and Digestion of What the Teacher Taught

After the teacher's explanation, the students can experience and digest the content by themselves. Repeatedly recall the main points and feel the details of the action. In the process of self-experience, self-practice can be carried out, and one by one, the judgment of the catching position,

the determination of the catching foot, the size of the contact point and strength at the moment of catching the ball, and the swing action after catching the ball can be learned one by one. This link takes less time, only 2-4 minutes.

## 2.4 Group Exercises

During group practice, the camera shoots the player to record the practice.

The 3 people in each experimental group play different roles in the team, they are setter, defender and main attacker. Because of their different positions and roles in the game, they are different in the first pass training. The training requirements are also slightly different, but both include fixed-location and random-location catching exercises. The so-called fixed location catching practice refers to throwing the takraw ball into the designated area in front of the player who is practicing the first pass, and the player kicks the ball to a certain designated area; random location catching practice refers to throwing the takraw ball at random to a certain area. The player adjusts the position of receiving the ball by moving quickly and kicks the ball into a designated area.

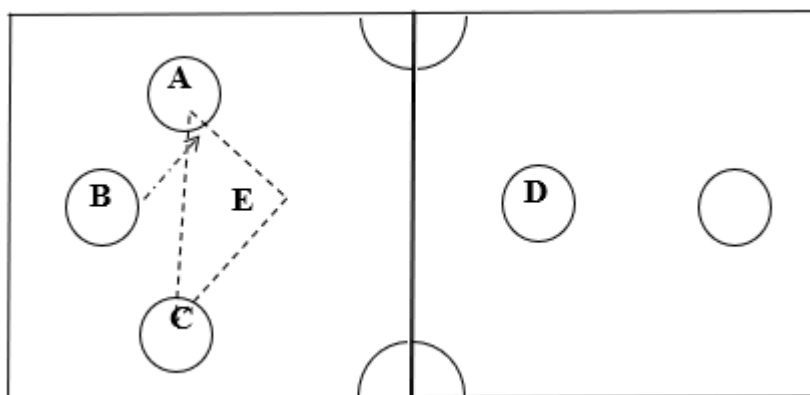
During the training process, three people take turns as practitioners, throwers, and recorders. Recording the accusations of the players during practice is responsible for recording the problems of the practitioners during the practice, such as misjudgment of the receiving position, high or low touch of the ball, etc. The thrower is responsible for throwing the ball across the net and is divided into two groups of 20-40 balls each.

This practice process is divided into two major parts. the first is

### (1) Fixed spot catch practice

1. Purpose of practice: To improve the accuracy of a player's first pass and the height of the ball.

2 Venue equipment: takraw pad, marking pen.



**Figure 1.** Schematic diagram of the practice of catching the ball at a fixed location

① Practice method: The thrower stands in the D area, and the first pass practitioner stands in the area A (the position of the setter) or B (the position occupied by the defender) or C (the position occupied by the main attacker) to prepare for the reception. ball.

If the practitioner is a defender, that is, the standing position is B area (as shown in Figure 1), after the practice starts, the thrower will throw the ball from the opposite side, and the practitioner will stand in the B area to catch the ball and pass it to the setter. Within a certain area of the position, that is, the area A in the figure; if the practitioner is the main attacking player, the position is the area C. After the practice starts, the thrower will throw the ball from the opposite side, and the practitioner will stand in the area C to catch the ball and the main attack. The player also has to pass the ball to the setter for adjustment after receiving a pass, but because the position is far away, it is enough to pass the ball to the E area, but the closer to the position of the setter, the better; The position of the setter player is Zone A. After the practice starts, the thrower will throw the ball from the opposite side. The practitioner will stand in Zone A to catch the ball. Base the ball.

② Training notes: The takraw ball thrown by the thrower can only be effectively practiced if the trainer catches the ball in a specific area and passes it to the designated area. Therefore, the thrower should grasp the strength and grasp the throwing point during the throwing process. It is also necessary to master the frequency of tossing, and wait until the experimenter is ready to make the next toss.

(2) Catch practice at random locations

① Purpose of practice: To improve the height of the player's first pass and the sensitivity of the reaction

② Venue equipment: takraw pad, marking pen.

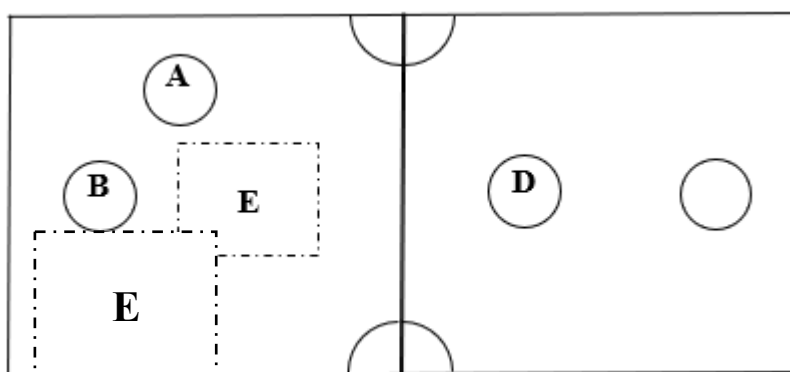


Figure 2. Schematic diagram of random spot catch practice

① Practice method:

Before practice, place a lot of laser pointers 3m above the practice field to see the height of the ball when catching the ball. It is effective if the ball exceeds the laser line.

The thrower stands in the D area and randomly throws the ball to the opposite court, and the trainer needs to move quickly to the appropriate position to catch the ball. The difficulty of this training is higher than that of receiving and passing the ball at a fixed location, so the area of passing the ball has also been appropriately expanded and adjusted. As shown in Figure 2, the practitioner, whether it is a defender, a main attacker or a setter, can pass the ball to the E area after moving, but the closer to the position of the setter, the better.

The number of practice groups in this training is the same as that of the previous training. There are 3 groups of 20 for each group of defenders and main attackers, and 5 groups of 20 for each group of defenders.

② Training Notes:

In this training, only passing the ball to the designated area and having a certain height (usually 3-4 meters) is an effective practice, so the scorer should be more focused in the process of catching the ball. Moreover, the thrower also has to master the frequency of throwing, and wait until the experimenter is ready to throw the ball next time.

## 2.5 Group Cooperation Exploration

After the three team members in the group have completed the first two groups of exercises, the group will conduct cooperation and research based on the recording in the hands of the recorder and the playback of the video content during the training. Analyze the advantages and disadvantages of each player's first pass movement in practice, how to improve it, and how to grasp the details of the movement.

## 2.6 Consolidation Exercises

After group exploration, practice the remaining groups of exercises in combination with your own easy-to-occur problems. The method is the same as the first time, but no camera is required. The players only need to experience their own improvement and progress in practice.

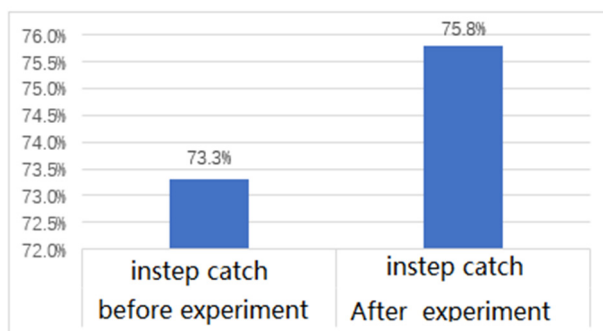
## 2.7 Summary and Communication between Teachers and Students

After the training of the first pass, the teachers and students will communicate with each other in groups to share the experience and technical improvement in the practice.

## 3. Test Results and Analysis Before and After the Experiment

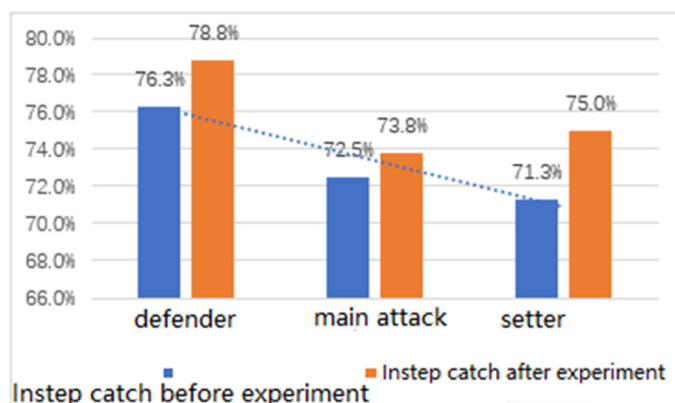
### 3.1 Comparison and Analysis of the Accuracy of the Instep Pass Before and After the Experiment

The instep catch-and-pass is mainly used to receive the ball in front of the net from the opponent. When completing this action, the player needs to first determine where the ball will land, and then quickly move to the receiving position. The knee is slightly bent, the instep is straight, and the ball is hit smoothly. The purpose is to pass the ball to the ideal area to better organize the attack or setter. Receiving a pass with the instep is also a commonly used action in a pass, but it is difficult to grasp the point of contact with the ball in this action, and the ball often deviates from the expected track.



**Figure 3.** Comparison of the accuracy of the instep pass of the players at different positions before and after the experiment

As shown in Figure 3, the chance of success in receiving a pass on the instep of the foot before and after the experiment has increased, from the original 73.3% to the current 75.8%. This result shows that multimedia assisted teaching methods have a certain role in improving the accuracy of the instep of the ball.



**Figure 4.** Comparison of the accuracy of the instep pass of the players at different positions before and after the experiment

In Figure 4, we compared the accuracy of the instep pass of the players in each position before and after the experiment, and we found that the success rate of the instep of the foot before the experiment showed a decreasing trend from the defender, the main attacker to the second set player. However, through 12 weeks of experimental teaching, the performance of the second setters improved most significantly, from the original 71.3% to 75.0%; The number of attackers increased from 72.5% to 73.8%.

Through multimedia teaching, students have a deeper understanding of the instep of the ball, and they realize that the instep of the foot needs to be kept in a stable state from the preparation of the catch to the moment of receiving the ball, so that the ball can have a better starting effect. However, maintaining the stability of the touch ball is the effect of the ball interacting with the front foot surface when the instep of the foot is straightened.

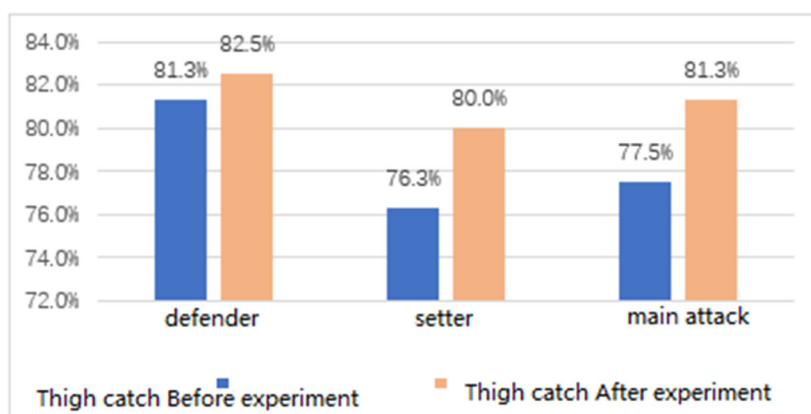
Comparison and analysis of the accuracy of the thigh pass before and after the experiment

In rattan ball sports, catching the ball with the thigh is also one of the technical movements that often occur. The team members use the thigh to block, pad, pass and other techniques to block, pad and pass the ball to the effective area, and the best position for the leg to receive the ball is the front 1/3 of the thigh

**Table 1.** Comparison statistics of the accuracy of thigh pass before and after the experiment

Before experiment		After experiment		change value	
Frequency	percentage	Frequency	percentage	Frequency	percentage
15.7	81.3%	16.3	82.5%	0.6	1.2%

In Table 1, we can see that the accuracy of the thigh passes before and after the experiment has improved, and the overall performance has increased from 15.7 successful catches before the experiment to 16.3, and the success rate has increased to 1.2%. The 12-week multimedia auxiliary teaching performance has increased by 1.2%, which seems to be a low degree of improvement, but it cannot be ignored that the technical level of the students who participated in the experiment themselves is already very high, and it is very difficult to improve it again. They can only improve by training and re-learning to standardize their technical movements and accumulate competition experience.



**Figure 5.** Comparison of the accuracy of the first pass to the thigh of the players at each position before and after the experiment

Therefore, the teacher uses multimedia to decompose the head-to-head passing action one by one in the teaching, while emphasizing that the best hitting position is 1/3 of the front of the thigh. As a result, the students paid more attention to the grasp of details and movements, so their athletic performance increased after the experiment. The fastest improvement in the accuracy of the thigh pass of the team members before and after the experiment was the second set player and the first pass

player (as shown in Figure 5), who increased from the original 76.3% and 77.5% to more than 80.0%. However, the receiving results after the two experiments of the main attack and the second pass are still at an average, indicating that in the future practice, we should also increase the training of the leg pass.

### 3.2 Comparison and Analysis of the Accuracy of the Front Head Pass Before and After the Experiment

There are two ways to catch a pass from the head, one is to receive the ball on the front of the forehead, and the other is to receive the ball on the side of the forehead. However, whether it is a frontal or side catch, the neck joint needs to be tightened during the process of receiving the ball, and the head is slightly forced towards the passing area at the moment of receiving the ball. In the actual investigation, it was found that the demonstration action of the head ball passed in the process of teaching was the most difficult, and many times the demonstration action was not very standardized, and students could only explore themselves in practice. However, in teaching, teachers use multimedia presentation, and the teaching effect will be multiplied with half the effort. Students can not only study the head ball skills by decomposing multiple movements, but also self-correct through group work and replay videos.

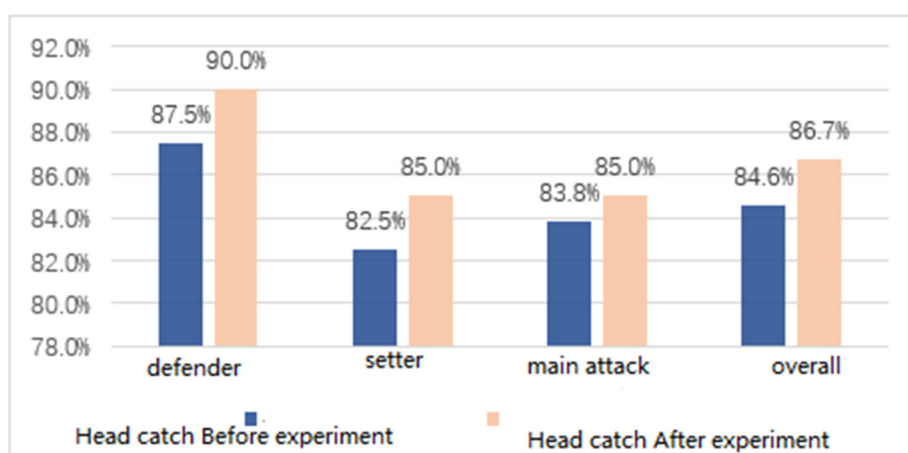


Figure 6. Comparison of the average head pass accuracy before and after the experiment

As shown in Figure 6, the overall accuracy of the head pass before and after the teaching experiment has increased from 84.6% to the current 86.7%. Looking at the accuracy of the first pass before and after the experiment, the accuracy of the setter players before training is relatively low. However, through 12 weeks of multimedia-assisted teaching, the results of the setter players and the main attackers were on a par, both reaching 85.0%.

## 4. Conclusion

Through the 12-week multimedia-assisted takraw teaching experiment, the students of the taklan team of Prince Bay School have improved their first-pass skills.

The performance of the students of the Ivy League team of Prince Bay School has also improved, but the success rate of receiving the ball is still around 75%. The reason is that it is difficult to grasp the contact point of the instep, and the ball often deviates from the expected track. . At the same time, it is also found that the success rate of the instep receiving a pass shows a decreasing trend from the defender, the main attacker to the setter. But through 12 weeks of experimental teaching, the performance of the setter players improved most significantly.

Through the longitudinal comparison and analysis of the data before and after the teaching experiment, we found that catching the ball on the outside of the foot is a difficult technical action in

a pass, and the successful catching rate is only about 70.0%. However, after 12 weeks of multimedia-assisted teaching, we found that the students of the Prince Bay School rattan team still showed an upward trend in receiving a pass from the outside of their feet. The overall success rate of receiving the ball increased by 2%. The success rate was in the leading position before and after the experiment. The score of the main attacker was slightly lower than that of the setter, but the scores of both improved by 2.5% after the study.

The students of the rattan team of Prince Bay School have improved the accuracy of catching a pass before and after the experiment. The overall score has increased from 15.7 successful catches before the experiment to 16.3, and the success rate has increased by 1.2%.

The demonstration and demonstration of a header pass is the most difficult in the process of teaching. Many times the demonstration movements are not very standardized, and students can only explore themselves in practice. However, when teachers use multimedia presentations in teaching, the teaching effect will be multiplied with half the effort. Students can not only observe and study header skills by breaking down the movements, but also self-correct through group work and replay of videos. Through the experiment, the overall accuracy of the first pass of the students of the Prince Bay School's rattan team increased by 2.1%. The accuracy of the setter players before training was relatively low, but after 12 weeks of multimedia-assisted teaching, the results of the setter players were comparable to The score of the main attackers was flat.

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