Research on the Construction and Application of the Small Group Program Teaching Mode of Badminton--A Case Study of Gannan Medical University

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Abstract: With the continuous deepening of physical education reform in colleges and universities, traditional badminton teaching methods have been difficult to adapt to the current teaching requirements. This paper takes the students of Gannan Medical University as the research object and uses the literature data method, the teaching experiment method，small group program Teachingand method and the mathematical statistics method. This paper attempts to construct the teaching mode of badminton small group program, and obtain the required data through teaching experiments and measurement of main evaluation indicators. The results show that: the small group program teaching model in the experimental class had higher performance and growth rate than the control class in badminton special technical tests, special footwork test, and special quality test. It shows that the new teaching mode has certain advantages in teaching effect compared with the traditional teaching mode, and it is feasible and applicable in the teaching of college badminton class.

1. Introduction

With the continuous deepening of college physical education reform. The innovative reform of college badminton teaching mode is also urgent. This paper intends to combine the small group teaching mode and the procedural teaching mode, try to construct a badminton small group program-based teaching mode, and verify the operability and applicability of the badminton small group program-based teaching mode through teaching experiments. In order to optimize the teaching process and enhance the teaching effect. Provide new teaching modes and teaching forms for college badminton classes, and provide reference and drive for other courses.

2. Research Objects and Research Methods

2.1 Research object. This paper takes the 2016 Sports Human Science Students and 2017 Sports Rehabilitation Students from Gannan Medical University as the research object.

2.2 Research methods

2.2.1 Literature review method. With the "small group teaching mode", "programmed teaching mode" and "badminton teaching" as keywords, and consult the relevant literature.

2.2.2 Teaching experiment method

2.2.2.1 Construction of program teaching mode. Design programmed teaching model: Forehand deep high service teaching program: (1) Basic position and carrying (2) Backswing (3) Release the ball (4) The rear foot hit the ground, turn the waist and moves the arm to do the swing action (5) To do the complete coherent action in the original position and send the forehand deep high service. Forehand lift teaching program: (1) Base stations and ready stance (2) Stride and backswing; (3) Turning the waist and shoulder to swing (4) Lifting the ball from your partner; Forehand high clear teaching procedures: (1) Basic standing position and ready stance (2) Stepping and side-lifting action; (3) The rear foot hit the ground, turn the waist, lift the elbow, put down the clapper; (4)

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Lifting the upper arm, forearm rapid internal rotation, flexion wrist, flexion and force to do the swing shot action (5) Combined with the above action to hit the ball from partner; Forehand net drop teaching procedure: (1) Basic station and ready stance (2) Stepping and side-lifting action (3) The rear foot hit the ground, turn the waist, lift the elbow, put down the clapper; (4) Lifting upper arm slightly, forearm deceleration internal rotation, micro-flexion wrist, grab the racket slightly and make a swing shot (5) Combined with the above action to hit the ball from partner.

2.2.2.2 Integration of small groups and programmed teaching model badminton courses. According to the physical quality, technical basis, personality, and learning style, the experimental class students were divided into 5 groups, and each group of 5 people formed a small group studying group. The teacher's overall adjustment controls the teaching process. Programmatic teaching is used in teaching. In the organization of teaching methods, the study is based on the small group model, thus achieving the integration of the two teaching modes.

2.2.2.3 implementation of the teaching experiment. The experimental class uses a small group program teaching mode, while the control class uses the traditional teaching mode to teach, and the other relevant conditions are consistent except for the teaching mode. The experiment lasted for one semester, with a total of 32 class hours. The students' after-school self-training is strictly controlled during the experiment to ensure the consistency of the experimental process. It was finally determined that the effective datum of the experimental class and the control class were 25 persons.

2.2.2.4 Teaching experiment test content and method.

Table 1 Evaluation indicators and methods

Test content	Technical name	Test Methods
Special technology	Forehand high clear	Return the teacher's service by high clear to the corresponding assignment area, and assign points from 1-5 points according to the area. Each person hits the ball five times in the left and right half of the area
	Forehand lift	After receiving the teacher's serve, use the forehand picking action to return to the corresponding assignment area, and assign points from 1-5 points according to the area. Each person hits the ball five times in the left and right half of the area
	Forehand drop	The tester receives the teacher's serve, and uses the forehand drop shot to the corresponding assignment area, and assigns points from 1-5 points according to the area. Each person hits the ball five times in the left and right half of the area
	Forehand long high service	The tester uses the forehand long high service and sends the ball to the corresponding assigned area. The score is divided by 1-5 points according to the area. Each person hits the ball five times in the left and right half of the area
Special footwork	“Meter” type footwork	According to the “meter” type footwork, the ball is placed at the point, and each point is five goals. The tester starts from the center of the field and steps down the badminton after the step is required. The end of the ball is reversed and returned
Special quality	1-minute skipping	The number of qualified ones within 1 minute

3. Results and Analysis

3.1 basic techniques and special quality test results and analysis of pre-test

Table 2 Data test of each indicator of experimental and control classes before the experiment

	Experimental class (n=25) x±s	Control class (n=25) x±s	t	P
Forehand high clear (points)	21.2±5.93	22.1±4.02	0.643	0.523
Forehand drop (points)	28.5±4. 81	29.3±4.77	0.590	0.558
Forehand lift (points)	26.6±3.55	25.3±3.78	1.253	0.216
Forehand long high service (points)	28.8±4.08	26.9±3.93	1.677	0.100
Meter type footwork (seconds)	76.2±3.97	77.0±4.05	0.705	0.484
1-minute skipping(numbers)	113.3±10.13	115.2±10.56	0.752	0.579

Before the experiment, the badminton special skills (forehand high-ball technique, forward-hand high-ball technique, forehand high-ball technique and forehand hanging net forward ball technique) and special footwork (meter type) were applied to the experimental class and the control class. Step by step), special quality test (1-minute double shake) for testing. However, since the selected subjects had not learned badminton before, the basic technical teaching of 8 class hours was carried out first, and the traditional teaching method was still adopted to make the subjects know the basic content and action requirements of the test. It can be seen from Table 2 that there is no significant difference in the indicators of the two classes of students, and the experimental conditions are available.

3.2 Analysis of test results after the test

Table 3 T-test of the data of each experimental class and control class after the experiment

	Experimental class (n=25) x±s	Control class (n=25) x±s	t	P
Forehand high clear (points)	38.7±3 .93	29.6±5.56	6.683	<0.001
Forehand drop (points)	41.7±2.88	31.3±4.02	10.515	<0.001
Forehand lift (points)	36.6±3.11	30.4±4.92	5.326	<0.001
Forehand long high service (points)	39.5±3.46	31.1±5.67	6.323	<0.001
Meter type footwork (seconds)	60.1±3.72	68.8±3.53	8.482	<0.001
1-minute skipping(numbers)	138 .2±4.45	130 .1±5.62	5.650	<0.001

After one semester of teaching experiments, and strictly control the experimental process. After the experiment, the basic badminton skills of the experimental class and the control class were tested again, and the test content was the same as the pre-test. As can be seen from Table 2, the average score of each index of experimental classes and control classes are significant differences. It shows that the small group program teaching mode has a good effect on the basic technical teaching of badminton.

3.3 Comparative analysis of badminton special techniques, footwork and quality test results before and after the experiment

Table 4 Badminton special techniques, footwork, quality test results before and after the experiment

	Experimental class			Control class		
	Before the experiment	After the experiment	Increment	Before the experiment	After the experiment	Increment
Forehand high clear (points)	21.2	38.7	17.5	22.1	29.6	7.5
Forehand drop (points)	28.5	41.7	13.2	29.3	31.3	2
Forehand lift (points)	26.6	36.6	10	25.3	30.4	5.1
Forehand long high service (points)	28.8	39.5	10.7	26.9	31.1	4.2
Meter type footwork (seconds)	76.2	60.1	16.1	77.0	68.8	8.2
1-minute skipping(numbers)	113.3	138.2	14.9	115.2	126.1	10.9

As shown in the above table, the scores of the forehand high-ball in the control class before and after the experiment increased by 7.5 points, and the score of the experimental class increased by 17.5 points. The forehand lobster control class score increased by 2 points, and the experimental class score increased by 13.2 points. The forehand picking ball score increased by 5.1 points, and the experimental class score increased by 10 points. The score of the forehand high-ball training class increased by 4.2 points, and the experimental class score increased by 10. 7 points. The score of the meter type gait control class increased by 8.2 seconds, and the score of the experimental class increased by 16.1 seconds. In the 1-minute double-shake control class, the score increased by 10.9, and the experimental class score increased by 14.9. It can be seen that the small group program teaching mode has a significant effect on the improvement of the badminton teaching effect.

4. Conclusion

Through the test before and after the teaching experiment, the experimental class using the small group program teaching mode scores higher than the control class in the badminton special technical test, the special step test, and the special quality test. It shows that the new teaching mode has certain advantages in teaching effect compared with the traditional teaching mode, which is conducive to students to learn easily and efficiently, and firmly grasp the content of learning. It is proved that the small group program teaching mode is feasible and applicable to the teaching of college badminton public physical education.

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