Research on the Application of "Video Feedback Method" in the Teaching of General Table Tennis Course of Physical Education Major in Colleges and Universities

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Abstract. In this study, using the methods of literature, questionnaire, teaching experiment and mathematical statistics, the students of Jiangxi normal university majoring in physical education of 2018 were taken as the experimental objects to conduct an experimental study on 32-hour table tennis teaching. The results show that: (1) the "video feedback method" has an obvious effect on students majoring in physical education to master single technique of table tennis, especially in the normative adjustment of technical movements. (2) Compared with the traditional teaching methods, the application of "video feedback method" in table tennis teaching has no obvious advantages in improving the basic physical quality of standing long jump, sliding step in 30 seconds, and rope skipping in 1 minute, etc. There is no significant difference between the two classes. (3) "Video feedback” can improve students' interest in table tennis. (4) The application of "video feedback method" in the teaching of table tennis has enriched the teaching content of table tennis, which is conducive to forming movement skills and helping students’ correct wrong movements in time.

Research Object
In this study, class 1 (21 boys, 10 girls) and class 2 (21 boys, 12 girls) of the physical education major of Jiangxi normal university were selected as the research objects.

Research Methods
Literature Method
Search CNKI in the library of Jiangxi vocational and technical college of industry and trade through Internet, and search related journal papers and academic theses from 2000 to 2019 with the key word "video feedback method." Comprehensive understanding of the feedback teaching method related research status, the current situation of table tennis teaching and existing problems. It provides the basis for the topic selection and lays the theoretical foundation for the writing of the paper.

Questionnaire Survey
According to the research needs of questionnaire, experts, students follow the questionnaire design principle and method of using the enclosed answer way, designed by the method of using single and multiple choice two experts and questionnaire, three students will test index is reasonable initial technology research and students' learning, students' table tennis table tennis technology the effect of the questionnaire investigation.

Teaching Experiment Method
Students of two classes of table tennis in Jiangxi normal university's physical education college of 2018 were taken as the experimental objects. The physical education class 1 of grade 18 was taken as the experimental class, and the physical education class 2 of grade 18 was taken as the control class, both of which were 32 periods and 2 periods per time. The control class adopts the
traditional physical education teaching method, while the experimental class adopts the video method for the feedback teaching.

**Mathematical Statistics**

After the end of the teaching experiment, the data indicators of the experimental class and the control class were examined, and the obtained data were statistically analyzed by using SPSS17.0 software to obtain the experimental data.

**Results and Analysis**

**Analysis of Body Shape Changes in the Experimental Class and the Control Class after the Experiment**

In order to verify the effect of experimental teaching and avoid the emergence of interference factors, it is very important to conduct post-test. After the experiment, the body shape of the students in the experimental class and the control class was measured again. In terms of height, the measured values of the experimental class and the control class were 170.65 ± 7.24 and 169.41 ± 6.48 after the experiment, and P > 0.05, indicating that there was no difference between "video feedback method" and the traditional teaching method on the height of students. In the experimental class and the control class, the measured value of body weight was 61.50 ± 8.99 and 60.63 ± 9.25 after the experiment, and P > 0.05, indicating that there was no difference between the effect of "video feedback method" and the traditional teaching method on the height of students. Both the traditional teaching methods and the "video feedback method" have an impact on students' body shape, but there is no difference between the two teaching methods.

**Analysis of Physical Quality Changes in the Experimental Class and the Control Class after the Experiment**

According to the test data, use statistical software package for data processing. The test data showed that the physical quality indexes of both experimental class and control class changed to different degrees after the experiment. In the index of standing long jump (m), the values measured in the experimental class and the control class were 2.13 ± 0.28 and 2.11 ± 0.29, respectively, and P > 0.05. In the experimental class and the control class, the values measured after the experiment were 30.16 ± 2.56 and 29.40 ± 2.55, respectively, and P > 0.05. Therefore, there was no difference in the influence of "video feedback method" and traditional teaching method on students' achievement of 30 second table angle. In the experimental class and the control class, the values measured after the experiment were 110.13 ± 7.06 and 111.18 ± 7.56, respectively, and P > 0.05. Therefore, there was no difference in the effect of "video feedback method" and traditional teaching method on students' performance of 1-minute rope skipping. The experimental data show that both the traditional teaching methods and the "video feedback method" have an impact on students' physical quality, and there is no difference in the impact of the two teaching methods on students' physical quality.

**Comparative Analysis of Various Technologies of the Experimental Class and the Control Class after the Experiment**

After the experiment, six basic technical indexes of table tennis in the experimental class and the control class were tested. Experimental class and control class achieved 76.77 ± 7.25 and 74.48 ± 5.86 respectively in the index of forehand running ball, and P > 0.05, indicating that experimental class and control class had no difference in the index of running ball, and the two teaching methods had the same effect on the teaching effect. Experimental class and control class achieved 73.06 ± 6.91 and 72.58 ± 6.63 respectively in the index of forehand backspin, and P > 0.05, indicating that experimental class and control class had no difference in the index of backspin, and both teaching methods had the same effect on the teaching effect.
Experimental class and control class achieved $78.19 \pm 4.48$ and $75.24 \pm 5.73$ respectively in the index of forehand attack, and $P < 0.05$, indicating that experimental class and control class had significant differences in the index of forehand attack, and the teaching effect of video feedback method was better than that of traditional teaching method. The experimental class and the control class achieved $78.32 \pm 4.92$ and $74.21 \pm 5.35$ respectively in the index of backhand push, and $P < 0.05$, indicating that the experimental class and the control class had significant differences in the index of backhand push. The average score of the experimental class was 4.12 points higher than that of the control class. The results of the experimental class and the control class were $76.74 \pm 7.12$ and $71.58 \pm 5.84$, respectively, and $P < 0.05$, indicating that the experimental class and the control class had significant differences in the rubbing index. Experimental class and control class achieved $74.65 \pm 7.20$ and $71.06 \pm 6.00$, respectively, and $P < 0.05$, indicating that experimental class and control class had significant differences in left-push and right-attack indexes. Experimental data show that in the forehand send rush and forehand backspin serves on the two evaluation indexes that in comparative classes and experimental classes did not differ between the grades, the reason may be that serve as table tennis is the most basic technology, in the final examination only require students to score the ball will be sent to a designated area, so no two class differences in grades.

From the technical evaluation results, the experimental class and the control class were $77.39 \pm 6.25$ and $74.24 \pm 5.25$, respectively, and $P < 0.05$. There was a significant difference between the two classes in this index. In the index of forehand backspin, the measured values of the experimental class and the control class were $78.48 \pm 6.28$ and $69.70 \pm 5.18$, respectively, and $P < 0.05$, indicating a significant difference between the two classes in this index. In the index of forehand attack, the values of the experimental class and the control class were $76.74 \pm 5.83$ and $73.76 \pm 4.78$, respectively, and $P < 0.05$. In the index of backhand push, the values of the experimental class and the control class were $77.10 \pm 6.31$ and $72.79 \pm 6.28$, respectively, and $P < 0.05$. The values of the experimental class and the control class were $78.19 \pm 6.28$ and $73.48 \pm 4.82$, respectively, and $P < 0.05$. The values of the experimental class and the control class were $75.74 \pm 6.00$ and $72.30 \pm 6.86$, respectively, and $P < 0.05$. There was a significant difference between the two classes in this index.

The performance of the experimental class was higher than that of the control class in six assessment indicators. The students of the experimental class were taught by "video feedback method." In the teaching process, feedback information was used to help students better understand the technical actions. By repeatedly watching the video of their own practice, to find out the reasons for their mistakes, so the class is relatively stable and standardized technical movements, teaching effect is better than the traditional mode. Since the objects selected in the experiment have no basis, at the beginning of learning the technique of soldier and ball, feedback is added to the class to intervene, students' practice and other information are fed back to themselves, and the computer is used to watch the practice video, so as to intuitively reflect their own problems and correct wrong technical actions in time. Watching the video repeatedly strengthened the students' memory of the technical movements. For students, it is very effective to use the "video feedback method" in the teaching of basic techniques. At this time, the teacher will feedback the information to the students through language evaluation or hints to the students, and quickly establish the correct action representation through synchronous information transmission. Therefore, the "video feedback method" is easier than the traditional teaching method to establish the correct concept of technical action and form a consolidated dynamic stereotype.

The study showed that the scores of the experimental class were basically better than that of the control class, with significant differences ($P < 0.05$), except for the scores of the running ball and the backspin ball, regardless of the achievement of reaching the standard or the technical assessment, which reflected that the teaching effect of "video feedback" was better than that of the traditional teaching. Through the intervention of "video feedback method" teaching, it promotes the students to master the skills and movements of soldiers and soldiers.
Satisfaction Degree of Students in Experimental Class and Control Class after Table Tennis Teaching

According to the questionnaire survey, 21 students (67.7% of the total number) and 12 students (36.4% of the total number) in the experimental class and the control class were satisfied with the course, with 9 more students in the experimental class than in the control class. Two students (6.6% of the total number) and six students (18.2% of the total number) were dissatisfied with the course in the experimental class and the control class, with four more students in the control class than in the experimental class. The statistical results show that students in the experimental class are more satisfied with the "video feedback method" than students in the control class are with the traditional teaching method, and the new classroom organization form arouses students' interest in learning.

Analysis on the Change of Students' Interest in Table Tennis

Through the questionnaire survey, it was found that students in the experimental class showed a significant increase in their interest in learning. Before the experiment, the number of students in the experimental class who were very interested increased from 6 to 10, while the number of students who were not interested decreased from 3 to 1. Before the experiment, 18 students in the experimental class were interested in table tennis (including very interested), accounting for 58.1% of the total number; after the experiment, the figure was 25, accounting for 80.6% of the total number of the class, indicating that after the teaching experiment, students who were not interested in table tennis were also interested in table tennis. In the control class, the number of students who were very interested in table tennis increased from 5 to 6, while the number of students who were not interested increased from 5 to 6. Before the experiment, 19 students were interested in table tennis, accounting for 57.5% of the class. After the experiment, the figure was 15, accounting for 45.5% of the class.

The results of this survey show that the implementation of "video feedback" teaching in the general course of table tennis can improve students' interest in the study of table tennis more than the traditional teaching mode. The main reason is that the traditional teaching classroom organization form is relatively simple, the intensity of exercise is low and the amount of exercise is small. Due to the lack of stability in students' technical movements, most of the class time is spent on picking up balls, and the body cannot be fully exercised, which leads to the adverse psychology of learning and reduces students' interest in table tennis. Method "and" video feedback in classroom teaching organizational use of photographic equipment so that the students can see their practice of video, but also through the computer to watch the standard table tennis teaching video, enrich the teaching contents, changing classroom organization form, enhances the classroom atmosphere, stimulate students learning enthusiasm and improve students' learning desire and interest in learning. With the improvement of students' table tennis skills, they have gained a better understanding of table tennis events, thus stimulating their interest in table tennis lessons.

Conclusions and Recommendations

Conclusions

(1) The "video feedback method" has an obvious effect on students majoring in physical education to master individual table tennis techniques, especially in the normative adjustment of technical movements.

(2) Compared with the traditional teaching methods, the application of "video feedback method" in table tennis teaching has no obvious advantages in improving the basic physical quality of standing long jump, sliding step in 30 seconds, and rope skipping in 1 minute, etc. There is no significant difference between the two classes.

(3) "Video feedback" can improve students' interest in table tennis.

(4) The application of "video feedback method" in the teaching of table tennis has enriched the teaching content of table tennis, which is conducive to forming movement skills and helping students’ correct wrong movements in time.
Recommendations

(1) While improving the quality and efficiency of classroom teaching, the "video feedback method" should provide sufficient time for communication and self-feedback between students and students and between students and teachers. Therefore, it is suggested to adjust the schedule of PE class time appropriately.

(2) The "video feedback method" is not only applicable to table tennis teaching, but also can be tried and applied in other sports teaching. Schools with conditions can apply the "video feedback method" as soon as possible and adopt modern teaching methods to continuously improve teaching quality and better accomplish the purpose of fitness and education.

References

[1] Yang Shuixia. Experimental research on video-feedback in basic technology teaching of volleyball courses [D]. Beijing: Beijing Sport University, 2011.

[2] Huang Shiguang. Experimental research on the application of video feedback teaching method in volleyball technique teaching [J]. Fujian Sports Science and Technology, 2012, 1 (33): 52-53.

[3] Liu Danhui. Application of video feedback teaching method in aerobics class [J]. Sports expo, 2013, 13:61.

[4] Xu Shiwei. Experimental study on the influence of video feedback teaching on students’ cognitive ability of basketball passing skills [J]. Sichuan sports science & technology, 2010, 12 (4): 67-72