

Research on the Application of College Tennis Teaching Based on Inquiry Teaching Mode

Nvying Hu, Zhou Wang*

School of Physical Education, Hunan University of Arts and Science, Changde, Hunan, 415000, China

279498226@qq.com

**Corresponding author*

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Abstract: Inquiry teaching is one of the highlights of the new curriculum reform of basic education in China, and it is a common concern of curriculum teaching theory and national curriculum reform practice. It stipulates that students must follow the logic of inquiry process when carrying out learning activities. This paper mainly studies the application of inquiry teaching mode in tennis teaching. On the basis of inquiry teaching method, the experimental teaching method of tennis in colleges and universities is adopted, and the teaching experiments are carried out on the experimental group and the control group by means of literature review, questionnaire survey, expert interview, teaching experience, mathematical statistics and comparative analysis. The two groups have the same teaching content. The experimental group adopts inquiry teaching mode, while the control group adopts traditional teaching mode. 2 hours per week. The results show that the exploratory teaching method can obviously arouse students' learning enthusiasm, deepen students' perceptual knowledge and understanding of forehand, backhand and serving skills, make students master forehand, backhand and serving skills faster and better, and improve the teaching effect. The experiment proves that students' motivation of choosing tennis elective course is consistent before the experiment, but after teaching, the tennis skill scores of students in inquiry teaching are significantly higher than those in traditional teaching.

1. Introduction

Inquiry teaching mode is often used in classroom teaching of other cultural disciplines. Through the development in recent years, this teaching mode and related teaching methods have been adopted in physical education. It has been used in table tennis, badminton and traditional martial arts teaching, and has achieved certain teaching results, but its application in tennis teaching in middle schools is almost zero. In recent years, the inquiry-based teaching mode has been gradually applied to the physical education teaching and sports team training in physical education class, and has been affirmed by the majority of teachers and coaches. However, this teaching mode still has certain limitations. Paying attention to students' independent inquiry of a single technique and technical action essentials in teaching and training is beneficial to the understanding of action

essentials, but its lack of pertinence may lead to the general practice effect and affect the development of the convergence ability among various techniques. At present, there is little research on inquiry teaching mode in tennis teaching [1-2].

In the applied research of tennis teaching in colleges and universities based on inquiry teaching mode, many scholars have studied it and achieved good results. For example, Huang Y believes that inquiry teaching refers to "a simulated scientific research activity, more specifically, it includes two interrelated aspects. Inquiry learning is in a learning-centered environment, and the second is that teachers provide students with necessary help and guidance to help them find a clear direction [3]. Eze E believes that inquiry learning means: "In learning activities: children learn the necessary ability to explore nature by themselves through the process of acquiring knowledge independently; At the same time, the formation of the understanding of the essence of scientific concepts; Then cultivate a positive attitude to explore the world "[4].

Firstly, this paper analyzes the present situation of tennis teaching in colleges and universities. Conduct in-depth research on inquiry teaching. This paper analyzes the value and significance of inquiry teaching, and through relevant literature research, questionnaire survey and experiment. The significance and value of the application of inquiry teaching mode in tennis teaching in colleges and universities. Through the analysis of the experimental data, it is found that inquiry teaching can better reflect the role of tennis teaching than traditional teaching in skills, knowledge and thinking ability.

2. Research on the Application of Tennis Teaching in Colleges and Universities Based on Inquiry Teaching Mode

2.1 Characteristics of Inquiry Teaching Mode

Such as finding information about sports techniques, understanding the basic principles of sports techniques, and choosing which exercises to do. Students actively build knowledge and grow through inquiry learning. This construction process is independently and dynamically created and constructed by students, rather than caused by external forces. Teachers should cultivate students' initiative and independence, so that they can actively choose learning objects and methods, complete in-class tasks and exercises, seek information, communicate and discuss, and practice by themselves [5-6].

Usually, in the traditional tennis teaching process, students' understanding of tennis movements is based on teachers' explanations and demonstrations. Students practice through imitation, and teachers give guidance on error correction. Then, through different practice means, they practice repeatedly to improve tennis skills. In the inquiry-based teaching mode, the teaching target is senior high school students. Students of this age are getting better physically and mentally, don't want to be bound, have their own opinions, are active in thinking, like outdoor sports and have the ability of independent self-study. Therefore, in the inquiry-based teaching mode, students' subjectivity and initiative are fully exerted. The whole teaching process runs through the links of inquiry, practice, re-inquiry and re-practice, and students are guided to practice through inquiry and enlightening thinking. The traditional teaching and training methods and means are relatively single, which can't attract students' more attention [7-8].

2.2 Probe Into the Feasibility of Inquiry Teaching Method in College Tennis Teaching

(1) Conform to the trend of quality education

With the reform of the current education system, physical education teaching should also be innovated, and the reform of tennis teaching is also in an inevitable stage. Teachers play a guiding

role and fully respect and affirm students' dominant position. The two sides are in a cooperative relationship. In this relationship, the two sides can respect and understand each other more, create a relatively good atmosphere in the classroom, and it is also conducive to emotional communication under free education, increase students' interest in tennis lessons, improve students' tennis skills, improve teaching quality and ensure the smooth development of tennis lessons in colleges and universities.

(2) Improve students' tennis skills.

The effective teaching of inquiry tennis is guided and organized by teachers. In class, choose a logical and scientific teaching method, gradually complete the learning task by asking questions, and then preach. Whether the time and teaching method can be flexibly used is also one of the tests for teachers' qualifications. Simplify and re-simplify the teaching of basic movements to improve the effectiveness. The classroom is the part where teachers and students have the most contact time. It can not only actively arouse students' enthusiasm and interest in tennis lessons, so that students can accurately master all kinds of tennis skills in the shortest time, but also practice freely on this basis to improve the quality of tennis teaching.

(3) Stimulate learning interest and improve learning and exploration ability.

The main form of question-based teaching is to ask questions, and then let students sum them up freely and easily. Therefore, using question-based teaching in tennis class means giving students more time to explore and innovate freely after teachers ask questions, and guiding students to explore answers through subjective initiative. It is also in this process. After teachers ask questions, they guide students to actively explore the answers to them. In this process, students can exert their abilities and discover new things, and the class is constantly improving its teaching [9-10].

2.3 Satisfaction Function

User satisfaction score is the cumulative result of each user's score. Suppose the user wants to calculate, then the center of the satisfaction score is $[n, 3n]$. If the satisfaction scores are equal, calculate the scores and determine the fitness function together [11-12].

Satisfaction formula:

$$\bar{S}(Fi) = \sum_{i=1}^n \frac{S(Fi)}{n} \quad (1)$$

Among them: $\bar{S}(Fi)$ is the average satisfaction; Fi evaluates the score value for each user; $S(Fi)$ is the satisfaction of each user; I, n are all positive integers, and $1 \leq i \leq n, I \leq n$.

Assuming that U and V are consensus T and satisfaction $\bar{S}(Fi)$, respectively, and account for the proportion of fitness value ($u+v=1$), the consensus satisfaction as a function of fitness is:

$$F_{itess} = u\bar{S}(Fi) \quad (2)$$

3. Based on the Inquiry Teaching Mode, the Applied Research and Design Experiment of Tennis Teaching in Colleges and Universities.

3.1 Work Arrangement in the Experiment

(1) The implementation of teaching experiments[13]. According to the purpose of this research experiment, the teaching contents and teaching plans are effectively sorted out, so that the whole teaching plan can be implemented smoothly and normally, and the teaching is mainly completed by teachers.

(2) Control and feedback of teaching information[14]. In the process of using tennis multi-ball combination teaching, we should first make a comprehensive survey of students' overall technical level and psychological aspects, so as to give targeted guidance to students, which is conducive to rapidly improving the technical level, strengthening communication and exchange among students, thinking and summarizing students' opinions, and improving teachers' professional ability.

(3) The programmed control of the teaching classroom[15]. The teaching content of each section should be carried out according to the pre-booked teaching procedure, so as to minimize some uncontrollable factors, reduce the errors of teaching experiments and improve the stability of the experiments.

(4) Control of load measurement in teaching classroom[16]. Teachers should try their best to control the load measurement of the two groups of students in each class to be close.

3.2 Experimental Design

This paper makes an experimental analysis on the role of inquiry teaching mode in tennis teaching in colleges and universities. Mainly adopt the comparative experiment method. Two groups were selected as the control group and the experimental group. Their motivation was investigated before the experiment, and their teaching results were graded after the experiment.

4. Experimental Analysis of Applied Research on Tennis Teaching in Colleges and Universities Based on Inquiry Teaching Mode.

4.1 Motivation Choice of Elective Courses before the Experiment

This paper chooses experimental method to study the specific function of inquiry teaching. Firstly, two classes are selected, one class as an experiment and the other class as a control group. The control group chooses the traditional teaching method, the experimental group and the inquiry teaching method. The investigation data of tennis elective motivation of two groups of students are shown in Table 1.

Table 1: Motivation Selection of Tennis Elective Course for the Two Groups of Students before the Experiment

	popular	like	Social Communication	other
experience group	33.3	40	20	6.7
control group	40	26.7	20	13.3

As can be seen from Figure 1, before the experiment, the motivation of the students in the experimental group and the control group to choose their own elective courses. From the results, it can be seen that the motivation of the two groups of students to choose tennis lessons is very close.. From the above results, most students choose tennis lessons because tennis is a fashionable and popular sport and they like it. There is no significant difference between the experimental group and the control group in the motivation of choosing tennis lessons.

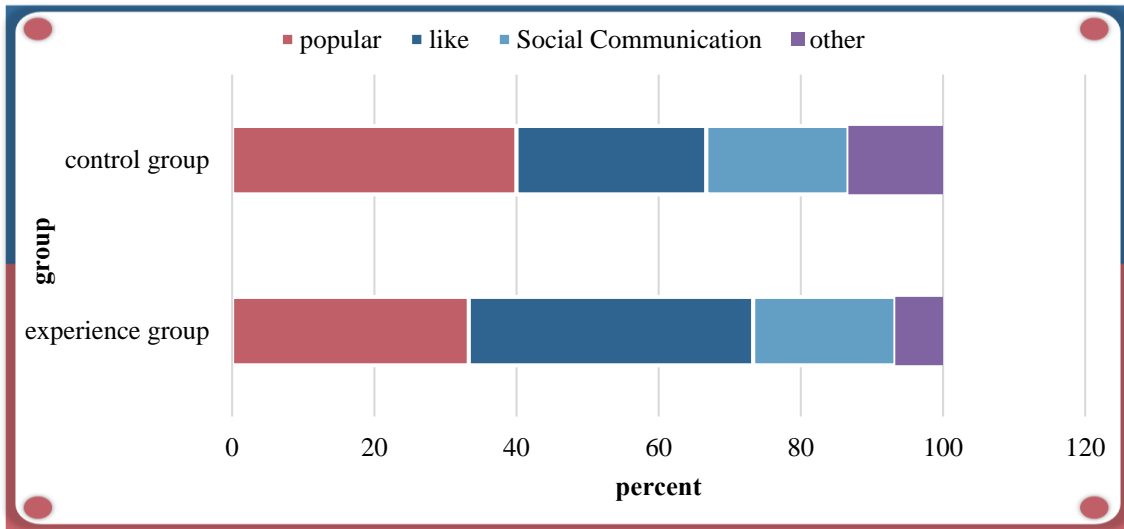


Figure 1: Study on the elective motivation of the experimental group and the control group

4.2 After the Experiment, Two Groups Of Students Scored Tennis Skills.

After the end of a group of teaching classes, this paper evaluates the tennis skills of two groups of students, and scores the forehand skills, backhand skills and serving skills respectively. The scores are shown in Table 2.

Table 2: Tennis skill scores of the two groups of students after the experiment

	Forehand technique	Backhand technique	Service techniques
experience group	3.37	3.17	3.01
control group	2.90	2.81	2.63

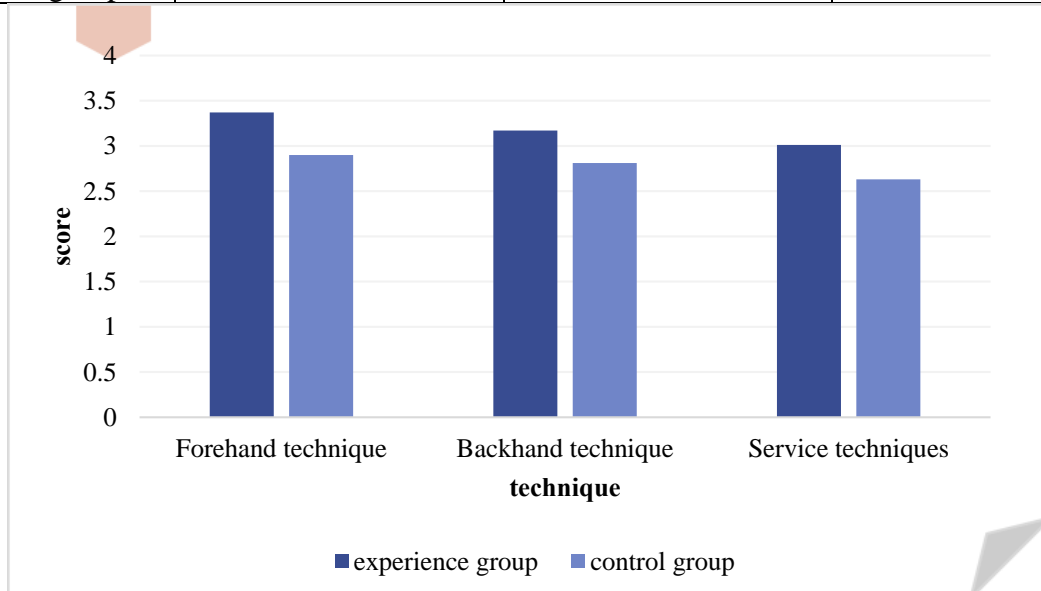


Figure 2: Scores of the two groups of students under different teaching methods

As can be seen from Figure 2, there is a certain significant difference between the two groups of students, P value is less than 0.05, but the technical scoring levels of the two groups are very close. According to the data calculation shown in Figure 2, the P values of forehand technique, backhand

technique and serving technique in the experimental group are 0.042, 0.049 and 0.041, respectively. The P values of the three basic techniques are all less than 0.05, that is, the teaching effects of the two teaching modes are all effective, and the inquiry teaching mode is superior to the traditional teaching mode in action learning of the three basic techniques.

5. Conclusions

After the experimental inquiry, the conclusion of this paper is that whether the inquiry-based teaching mode can be successfully carried out in the teaching experiment requires teachers and students to have enough knowledge of the teaching links of this teaching mode and relevant theoretical knowledge reserves. This requires students to preview the content of the class before class sort out and digest the knowledge learned in class after class, and teachers have generous theoretical knowledge and technical level to ensure the smooth implementation of the inquiry-based teaching mode in the teaching experiment.

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