

# **The Effect of Tai Chi Feedback Teaching on the Academic Performance of Students at Nantong Institute of Technology**

**Zou Zhihao, Kreeta Promthep,  
Wiradee Eakronnarongchai and Yodkhwan Khantiyu**  
UdonThani Rajabhat University, Thailand  
Corresponding Author, Email: kreeta.pr@udru.ac.th

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## **Abstract**

The purpose of this study is as follows: 1) Compare students' learning status before and after students learn. Students in the experimental group receive Tai Chi feedback teaching, while students in the control group receive normal Tai Chi teaching; This paper is a quantitative study. The samples were 40 students from Class 3 and Class 4 in the martial arts class of freshmen in Nantong Institute of Technology. They were selected by them before the experiment with the same athletic ability and Tai Chi learning ability. PASS software was used to calculate the sample size, and 22 students were selected from two classes respectively as the final experimental group and control group of this study. The experimental group lesson plan developed by the researcher was tested by 4 experts.

The results show that: 1) Comparing with traditional teaching method is significantly different from traditional teaching at 0.05 Tai Chi feedback teaching method can improve students' performance of Tai Chi through experiment.

Conclusion Through the experiment, feedback teaching curriculum design, make students become the main body of the class, improve students' participation in the class, and then can effectively break through the important and difficult movements, improve the performance of Tai Chi.

**Keywords:** Tai Chi; Feedback teaching; Academic Performance

## **Introduction**

Through the research of Xia Chunlei (2016). In inheritance, courses in various universities play an important role. Tai Chi is a relatively popular and very representative type of martial arts routine in the teaching content of martial arts in universities. It is a traditional Chinese martial arts that integrates multiple functions such as physical fitness and combat confrontation. It is relatively popular in various universities. Therefore, research and exploration of Tai Chi teaching in universities has important practical value. In recent years, Tai Chi education and teaching have achieved remarkable results, but there are still some problems such as "single teaching method" and "difficult to learn and easy to forget". Among them, the innovation of teaching methods is an important factor and key link that restricts and affects Tai Chi teaching in schools. Therefore, educators must pay attention to it, enrich Tai Chi teaching methods, optimize Tai Chi teaching evaluation and feedback, and flexibly use the achievements of modern information technology. The application of feedback teaching method in Tai Chi teaching has great theoretical and practical significance for helping Tai Chi teaching innovation. That is, it can combine modern teaching methods to explore new applicable teaching models and methods, and it can also provide

guarantees for students to obtain teaching information more happily, efficiently and timely in Tai Chi teaching, thereby promoting continuous improvement of teaching quality.

In Tai Chi teaching, movement is difficult to learn, easy to forget after learning is the main problem, leading to students' unsatisfactory performance. Based on the above problems, this study adopts the feedback teaching method and applies it to teaching, adding feedback in teaching design and student learning links to change these conditions, so as to break through the major and difficult points and improve students' academic performance.

## **Research Objectives**

Study and Compare the learning performance of students before and after learning. The experimental group adopts feedback teaching, and the control group adopts normal teaching.

## **Literature Review**

The feedback teaching method structure model as shown below is adapted from the teaching procedures proposed by Teacher Li Yingchun(2004) and combined with the teaching design of this study. This structure contains three parts: First, the control system (teacher). Teachers should play a leading role in teaching, select teaching content based on students' basic conditions, and evaluate and feedback students' feedback information, so as to adjust classroom teaching and optimize teaching effects. In this structure, teachers mainly play the role of teaching control, organize students' exercises and discussions, and fully provide students with an information exchange platform. At the same time, teachers must effectively control the amount, speed, form, timing, etc. of information transmission according to the teaching content, teaching process, and individual differences of students. Ensure students' ability to receive appropriate feedback in a timely manner.

The multi-feedback teaching method is a new teaching method based on information theory, control theory, and system theory. Its applicability value for physical education is very high. The research on multi-feedback teaching in my country started late. According to the results of literature retrieval, relevant scholars have gradually paid attention to feedback teaching methods. Refer to Xia Chunlei (2016) .

## **Research Methodology**

### **1. Key informant group**

The research subjects were selected from two Tai Chi classes of Nantong Institute of Technology. 2 cases per class, 22 cases per class, and a total of 44 experimental samples.

### **2. Research tools**

Questionnaire on College Students' Sports and Tai Chi Learning .Tai Chi Scoring Standards of the General Administration of Sport of China.

### **3. Data collection**

1. Design and distribute questionnaires through Questionnaire Star. Online recycling is done by Questionnaire Star.

2. The differences in physical fitness of students before the experiment were analyzed through the physical education testing system of Nantong Institute of Technology. Feedback is provided using the Xue Xitong and QQ APP.

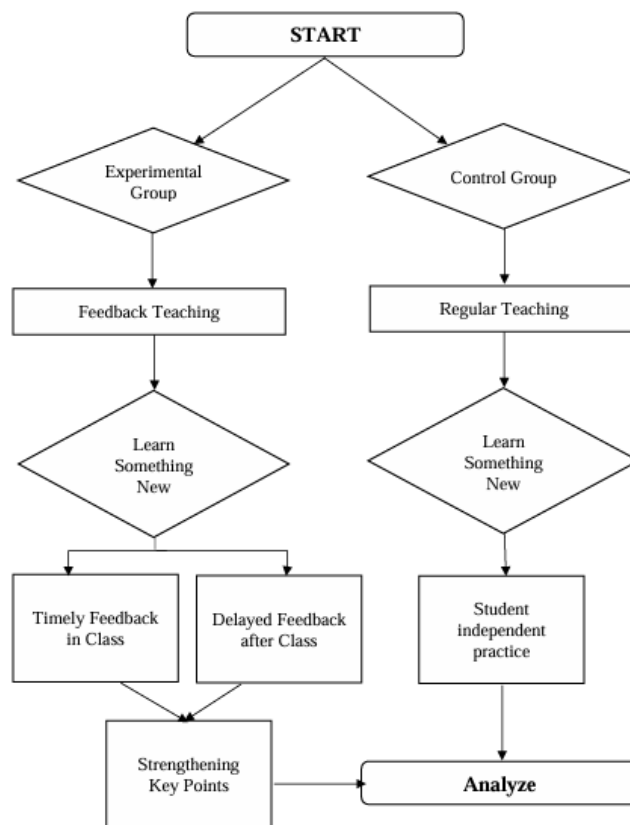
3. For the analysis of experimental data, data analysis is mainly carried out through SPSS software and T test.

#### 4. Data analysis

Use SPSS to organize and analyze the data obtained from the experiment to quantify the experimental data and ensure the objectivity and scientificity of the research. The independent samples T test was used for data analysis and comparison.

### Research Conceptual Framework

According to the school curriculum outline and the reference feedback teaching principle, the framework of this experiment is determined. From the beginning of the experiment to the experiment in groups, to the direction of the experiment, it is carried out according to the course learning situation. The specific content is as follows.



**Figures 1:** Research Conceptual Framework

## Research Results

1. The research found that feedback teaching of Taijiquan can improve students' performance.

2. The research found that the instructional design of feedback teaching can promote the improvement of student achievement.

A questionnaire survey confirmed that there was no difference between the two groups of students in physical exercise and Tai Chi learning, and then an 8-week teaching experiment was conducted to obtain the experimental results.

**Table 1** Student participation in sports

Sports participation			
	Regular participation	Occasionally participate	Rarely involved
Control group	3 (14%)	17 (77%)	2 (9%)
Experimental group	4 (18%)	16 (73%)	3 (9%)

Table 1 shows that the number of students participating in sports in the experimental class is 18%, the number of students participating in sports occasionally is 73%, and the number of students rarely participating in sports is 9%. The number of students participating in sports regularly in the control class is 14%, the number of students participating in sports occasionally is 77%, and the number of students rarely participating in sports is 9%.

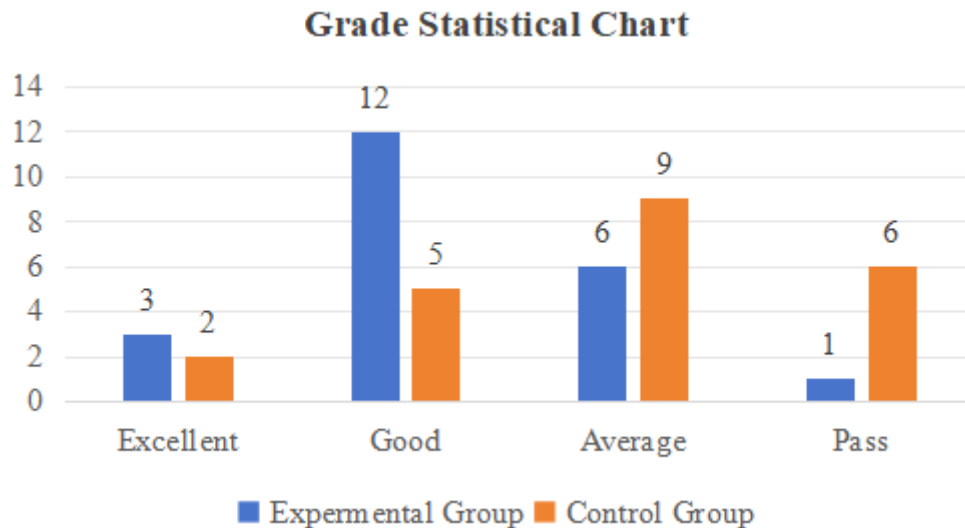
It can be found that most students occasionally participate in sports, and only a small number of students rarely participate, indicating that the situation of students participating in physical exercise in the experimental class and the control class is similar.

**Tables 2** Students' understanding of Tai Chi

	Very well understood	Understand	not well understood	not understood
Experimental group	0%	4%	56%	40%
Control group	0%	6%	60%	34%

The results of the survey on students' understanding of Tai Chi showed that only 4% of the students in the experimental class knew about Tai Chi, 56% knew little about it, and 40% knew nothing about it; 6% of the students in the control class knew about Tai Chi, 60% knew little about it, and 34% knew nothing about it. This shows that students know little about Tai Chi and have poor basic knowledge of Tai Chi, which means that students in the experimental class and the control class have similar understanding of Tai Chi.

After 8 weeks of teaching experiment, the students' Tai Chi scores were counted and the following results were obtained.



**Figures 2:** Distribution of Tai Chi scores after the experiment

According to the statistical analysis of the test subjects' grades, there were 3 excellent students, 12 good students, 6 medium students, and 1 qualified student in the experimental group. There were 2 excellent students, 5 good students, 9 medium students, and 6 qualified students in the control group.

**Tables 3** Tai Chi Technical Scoring Standards and Scores

variable name	variable	Sample size	average value	Standard Deviation	T-test	Welch's T-test	Cohen's d value
Tai Chi Results	Experimental group	22	81.455	7.726	T=2.078 P=0.044**	T=2.078 P=0.044**	0.626
	control group	22	77	6.437			
	<b>Total</b>	44	79.227	7.38			

Note: \*\*\*, \*\*, and \* represent 1%, 5%, and 10% significance levels, respectively.

The mean values of the Tai Chi scores of the experimental group and the control group were respectively: 81.455/77.0; because the homogeneity of variances was met, the independent sample T test was used, and the significant result P value was 0.044\*\*, so the statistical result was significant, indicating that the experiment There is a significant difference in Tai Chi performance between the two groups; the Cohen's d value of the difference is: 0.626, and the difference is medium (0.20, 0.50 and 0.80 correspond to small, medium and large critical points respectively)

It can be seen from this that the experimental group using feedback teaching method has better Tai Chi performance than the class using traditional teaching method. Feedback teaching method is more conducive to improving students' movement quality and practice level.

The experimental results were obtained based on the experimental data analysis: .

1. The teaching design of feedback teaching is more conducive to improving students' grades
2. Feedback teaching improves student's learning efficiency and improves their academic performance.

## Discussion

### **The teaching design of feedback teaching is more conducive to improving students' grades.**

According to the expert review results, the teaching plan and course design of Tai Chi feedback teaching are very reasonable, indicating that the experts believe that the validity of the initial design of the course is high, meets the needs of experimental research, and can be applied to experiments. Among them, the two methods of timely feedback during class and delayed feedback after class were well received by experts.

By designing the content of the teaching plan and designing the feedback method and plan for the overall course, the course-related content can be planned in advance to improve teaching efficiency. By designing the content of the course lesson plan and providing feedback on the content of each class, the teacher's work efficiency can be improved while improving student performance.

After discussion and suggestions from experts, the Tai Chi feedback teaching course design and teaching plan were designed. After the experiment, it was found that the students' grades were improved. Combined with the results of Xia Chunlei's (2016) study, the improvement of classroom teaching in the course design mainly comes from the in-class and after-class links, including timely feedback from students in class and delayed feedback after class. The use of information technology such as videos and teaching apps can improve this part more efficiently. Therefore, in Tai Chi teaching, it is necessary to ensure the quality of classroom teaching and make good use of information technology such as teaching apps.

Compared with traditional teaching, feedback teaching increases feedback methods in the teaching design stage from the in-class practice link and after-class homework link of students. Through students submitting homework on difficult points and wrong points, students' grades can be improved in teaching. In the in-class practice link, feedback teaching has a promoting effect on this part, which can promote students' independent practice, thereby improving grades. In the after-class link, through APP homework and teacher feedback, teacher correction videos and students submitting homework, students' learning and practice frequency can be promoted, thereby improving academic performance.

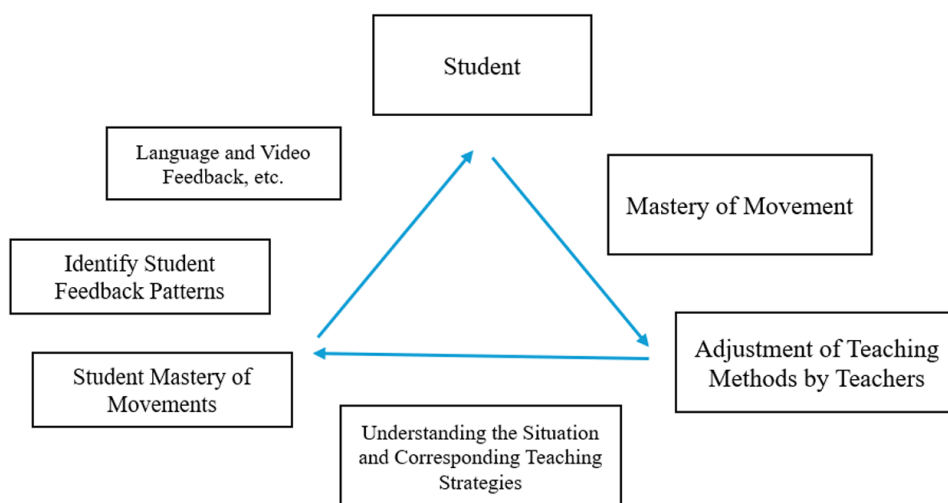
In summary, compared with ordinary teaching, the teaching design plan of feedback teaching can better improve learning performance in the in-class practice and after-class homework sessions.

### **Feedback teaching improves students' learning efficiency and improves their academic performance.**

According to the statistical analysis of the test subjects' grades, there were 3 excellent students, 12 good students, 6 medium students, and 1 qualified student in the experimental group. There were 2 excellent students, 5 good students, 9 medium students, and 6 qualified students in the control group. The percentages of the experimental group were: 13.64% excellent, 54.54% good, 27.27% medium, and 4.55% passing. According to the statistical results, the percentage of good and excellent grades in the experimental group exceeded 50%. The proportion of the control group's grades was: excellent 9.09%, good 22.73%, medium 40.91%, and pass 27.27%. According to the statistical results, the proportion of good and excellent grades in the control group did not exceed 50%. The statistical data of the grade structure of students' grades show that the experimental group using feedback teaching method performed better than the control group.

The mean values of the Tai Chi scores of the experimental group and the control group were respectively: 81.455/77.0; because the homogeneity of variances was met, the independent sample T test was used, and the significant result P value was 0.044\*\*, so the statistical result was significant, indicating that the experiment There is a significant difference in Tai Chi performance between the two groups; the Cohen's d value of the difference is: 0.626, and the difference is medium (0.20, 0.50 and 0.80 correspond to small, medium and large critical points respectively) It can be seen from this that the experimental group using feedback teaching method has better Tai Chi performance than the class using traditional teaching method. Feedback teaching method is more conducive to improving students' movement quality and practice level.

In teaching, the feedback teaching method controls the orderly progress of the entire teaching system through the leading role of the teacher, and uses multiple feedback to communicate and exchange with students in a timely manner, so that students can perform teaching tasks and complete teaching goals, and give full play to the main role of students. This result is consistent with the research results of Wei Anyu (2018). Feedback teaching increases students' opportunities for independent learning and practice during and after class, making students themselves the main participants in the class, actively learning and practicing technical movements, and breaking through the key points and improving learning efficiency under the guidance of teachers. For Tai Chi teaching, the feedback teaching method gives full play to the functions of multiple senses when learning skills, allowing students to perceive different forms of stimulation and receive multiple feedback information. In this way, the learning of movements is more standardized, and the correction of wrong movements is more accurate, which improves students' learning efficiency and enhances the teaching effect of the classroom. However, in the ordinary teaching method, there is no video correction and practice video during student review and practice, and the students' learning efficiency is low, so the grades are lower than the feedback teaching method. In summary, the feedback teaching method is effective in improving academic performance, making students the main body of learning, completing more efficiently and actively, and enabling students to break through key and difficult movements, so that teaching is improved.



**Figures 3** Classroom teaching feedback system based on Tai Chi courses

## Recommendation

1. In future research, further use of feedback teaching can be used to study the impact of student achievement and learning interest. The application of feedback teaching method in Tai Chi classes in colleges and universities is more conducive to the improvement of technical movements and the implementation of curriculum reform, and enriches the dissemination channels of conventional martial arts teaching. Therefore, it is recommended to vigorously promote the "feedback teaching method" in college martial arts routines, and try to apply it to other uncommon movement projects to continuously enrich the physical education teaching system.

2. In the future work, we can further study the student-oriented curriculum design and enrich the research content of feedback teaching. In the actual application of the "feedback teaching method", in addition to focusing on the teaching of technical movements, it is also necessary to pay attention to the combination of course planning and student feedback time, so as to achieve timely feedback during and after the course. The "feedback teaching method" can create a good teaching atmosphere. It is also necessary to pay attention to the main position of teachers and students. Teachers use the feedback mechanism to control the entire teaching system, so that students can actively cooperate, actively complete teaching tasks, and develop comprehensive abilities and qualities.



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