



Effective of Flipped Classroom Teaching to Improve Wushu Skills for Students in Guangzhou Sport University

Wang Xi¹, Chanchai Siriphan² and Wisute Tongdecharoen³

^{1,2}Faculty of Sports Science and Technology, Bangkokthon University, Thailand

¹E-mail: 1522460348@qq.com, ORCID ID: <https://orcid.org/0000-0003-0456-4594>

²E-mail: siriphan.cs@gmail.com, ORCID ID: <https://orcid.org/0009-0000-9981-655X>

³E-mail: wisute.ton@bkkthon.ac.th, ORCID ID: <https://orcid.org/0009-0008-5233-7533>

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Abstract

Background and Aims : Flipped classroom teaching moves direct instruction outside the classroom, allowing students to work on lecture materials at home while using class time for active learning, discussions, and problem-solving. This method encourages deeper comprehension, collaboration, and personalized support during in-class activities. The objective of this research was to study the effect of flipped classroom teaching to improve Wushu's skills for students at Guangzhou Sport University.

Materials and Methods: This research is quasi-experimental. Taking the second-grade students of Wushu in Guangzhou Sport University in 2023 as the research object, 60 students who met the Wushu test standards and volunteered were randomly selected as the experimental sample group, 30 in the experimental group and 30 in the control group. First, the questionnaire survey method and expert interview method were used to discuss 60 students and 5 experts, and the current situation and existing problems of school martial arts teaching were collected. Secondly, the focus group was discussed with 10 experts to formulate a specific teaching plan, and 5 students were randomly selected to try out the plan. Finally, the 8-week flipped classroom teaching experiment was carried out before, 4 weeks after teaching, and 8 weeks after teaching. Analysis of variance and T-test were used for data processing, and the effect of martial arts flipped classroom teaching was evaluated according to the processing results.

Results: After 8 weeks of teaching experiment, the data results were significant before and 4 weeks after teaching and were significantly different after 8 weeks of teaching. It shows that the teaching program can effectively improve the basic skills of wushu students majoring in the Guangzhou Institute of Physical Education.

Conclusion: The flipped classroom of martial arts is conducive to the improvement of martial arts-specific qualities and technical abilities.

Keywords: Flipped Classroom Teaching; Wushu; University Students

Introduction

"Flipped classroom" was established to improve learning results, rearrange students' learning time, and transform the roles of teachers and students in the teaching process, always focusing on students. The core of the flipped classroom is to allow students to learn independently through teaching videos before class, and to discuss and communicate with teachers during class, thereby helping them better master the learning content. First of all, students self-study through videos before class, discuss and learn from each other, increase their understanding of technical movements, help students master complete technical movements more quickly, reduce the time spent by teachers on explaining and demonstrating teaching, and increase the time for teachers to guide students to practice, thereby optimizing Classroom teaching time improves learning effects; secondly, for Wushu movements with changeable routes, strong continuity, and complex movements, students can choose fast play, slow play, freeze play, repeat play, etc. according to their own circumstances to help students become better and more Establish action impressions concretely and vividly, promote the internalization of action skills, and consolidate and strengthen Wushu technical movements; Furthermore, the use of video self-study can help students prevent forgetting of actions; finally, flipped classroom can also be well applied to some special teaching Situation: If offline teaching is not possible, students cannot attend class in time due to personal leave, and teachers are inconvenient to demonstrate movements, students can learn through videos and teachers can answer questions and carry out teaching activities (Guo & Wang, 2023).

Wushu is a classic expression of the traditional culture of the Chinese nation. In a sense, Wushu can be said to be a historical microcosm and cultural gathering of Chinese culture. When talking about the





origin and development of Wushu, it is of course inseparable from traditional Wushu, a classic cultural form with profound traditional connotations. It is the most Chinese-flavored oriental culture. Chinese Wushu originated from the theory of labor, multiplied on the battlefield, spread among the people, and developed to the present day. It has completely reshaped its technical image and cultural characteristics. Wushu has self-defense value, educational value, fitness value, cultural value entertainment value, etc. In different historical periods, it carries different value functions. The value selection of Wushu mainly depends on its dominance in this historical period. To achieve harmonious development with society, a relatively stable Wushu value orientation can be formed.

At present, the traditional martial arts teaching mode has played a corresponding positive role within a certain period and achieved corresponding results. However, the complex and diverse nature of martial arts makes it difficult for students to master quickly in the learning process. Moreover, martial arts majors not only need to know how to practice but also need to be able to teach.

The learning of martial arts routines needs to go through three levels of improvement. (1) Learn martial arts basic skills, including 5 stances, 12 kicking techniques, 3 body postures, and 5 jumps. (2) Master the changes and connections of all basic skills movements proficiently and be proficient in using two kinds of weapons, long and short. (3) Master the usage methods of most martial arts skills and weapons.

Every student majoring in martial arts routines needs to complete the learning of two sets of prescribed routines and optional routines for Changquan, Nanquan, Taijiquan, broadsword, swordsmanship, cudgel, and spear. In addition, traditional routines and traditional weapons are also required. The improvement of each level requires several main factors such as venues, equipment, teachers, and time provided by universities. It is difficult to complete all within only seven semesters. The traditional teaching method can no longer bear the teaching tasks that need to be completed under the current rapid development. Then how can we ensure teaching quality and progress? The emergence of the flipped classroom teaching method can greatly improve the teaching quality of martial arts courses. By watching videos and previewing to learn first, there is sufficient time to become familiar with and ask questions in class. Finally, most martial arts skills can be mastered and demonstrated at the end of each semester. Therefore, the flipped classroom teaching method provides an effective learning approach for martial arts majors, enabling students to learn more actively and independently. Precisely because the flipped classroom teaching mode conforms to the development trend of the information-based teaching era, there is a high enthusiasm for research on flipped classrooms at home and abroad. Therefore, flipped classroom teaching should be promoted, a new model for martial arts teaching for college students should be explored, and the development of martial arts teaching at the Guangzhou Institute of Physical Education should be promoted.

Research Objectives

Main Objective

To study the effect of flipped classroom teaching to improve wushu skills for students at Guangzhou Sport University.

Subsidiary Objectives

1. To investigate the current situation and the problems of wushu teaching.
2. To construct the flipped classroom teaching plan for improving the wushu skills of students
3. To experiment and compare the effect of flipped classroom teaching to improve wushu skills for students in Guangzhou Sport University.

Literature Review

This study focuses on keywords such as "flipped classroom", "wushu" and "teaching method". The following literature and research will be reviewed in seven sections as follow:

Flipped classroom

Flip the concept of classroom





The flipped classroom is an instructional strategy that reverses traditional teaching methods, with lectures delivered outside of class and activities usually reserved for homework carried out during class time. In this model, students work on learning materials at home, such as videos or readings, freeing up classroom time for collaborative exercises, problem-solving, and discussions that promote a deeper understanding of the material. This shift enables instructors to function more as facilitators of learning rather than simply providers of information, allowing for more personalized attention to students' needs. The flipped classroom approach promotes active learning and encourages student participation, creating a more dynamic and engaging learning environment (Bishop & Verleger, 2013). When used correctly, flipped classrooms have been shown in research to improve student learning outcomes and engagement. According to research, flipped learning improves students' ability to apply knowledge, fosters peer collaboration, and boosts motivation to engage with course material. Furthermore, the flipped classroom model adheres to constructivist learning principles, which require students to actively participate in the learning process to construct understanding. While the flipped classroom can present challenges, such as requiring students to take more responsibility for their learning outside of class, its potential benefits in developing critical thinking and problem-solving skills have made it a popular pedagogical approach in higher education (Lo & Hew, 2017).

Research on the application of flipped classrooms abroad

Khan (2007) founded "Khan Academy". The college uploads the produced teaching videos to the platform and provides them for free download to those who need them, which greatly reduces the obstacles for schools, teachers, and students to use the flipped classroom, thereby quickly promoting the spread of the flipped classroom and expanding the scope of research subjects. In just a few years, research articles on flipped classrooms have spread across various subjects. In summary, foreign researchers in different disciplines and different research directions have studied the flipped classroom teaching model and generally reached the following common conclusions: 1) The flipped classroom can effectively improve students learning motivation and enthusiasm; 2) The flipped teaching model can build a harmonious and active classroom learning environment, strengthen the frequency of communication and interaction between teachers, students, and students, and enhance students interest in learning; 3) Flipped classroom teaching also has a good promotion effect on students thinking, learning attitudes, and self-learning abilities. Promoting effect.

Research on the application of flipped classrooms in China

In 2011, the concept of flipped classrooms, a new teaching model, began to be introduced in China. China paid less attention to flipped classrooms than foreign countries, and initially, most of the research was theoretical, and there were very few experimental research documents on the combination of subject projects. In 2012, the "China Conference" published the first experimental research report "A Brief Discussion on the Application of "Flipped Classroom" in Farmers' Science and Technology Training", and research literature on flipped classrooms began to be published one after another. The flipped classroom teaching model has become more and more popular. Combining multiple disciplines, the research fields and research directions are gradually enriched.

In summary, since the flipped classroom teaching model was introduced in China in 2011, it has attracted more and more attention from researchers, and the disciplines involved have become wider and wider. Different researchers from different disciplines have researched the flipped classroom, and unanimously It is believed that flipped classroom teaching has a stimulating effect on students and has the following common features: 1) It can significantly improve students' interest in learning and stimulate learning motivation; 2) It can effectively enhance cooperation and communication between teachers and students and between students, thereby creating a harmonious classroom atmosphere to improve students learning efficiency.

Wushu

1. Wushu concept: The concept of Wushu is the theoretical fulcrum for people to understand and study Wushu. However, people's definition of the concept of Wushu has changed with the improvement of





people's awareness, and its expressions are different. There have been more than a dozen versions so far. Wushu in the broad sense refers to the human body offensive and defensive techniques bred by Chinese national culture, while Wushu in the narrow sense is the Wushu of sports events. Qiu & Yang (2009) and "Wushu is developed around Wushu in the Chinese cultural background. Unarmed and armed body movements. To sum up, the concepts of Wushu in different periods are defined based on historical situations and people's cognition. There are differences between the various versions, which have a certain relationship with the social environment in which people lived at that time, as well as the differences in people's understanding and social practice at that time.

2. The value of Wushu: The value of Wushu reflects the satisfaction of human and social needs and has multiple functions such as military, political, fitness, sports, and culture. However, because the value of Wushu itself is multiple, related, dynamic, and hierarchical, the academic community cannot express it. In summary, the academic community has discussed the importance of studying the value functions of Wushu from the aspects of society, culture, and the development of Wushu itself, and has discussed it from different perspectives. Research on the perspectives and dimensions of its value. The value selection of Wushu mainly depends on its relationship with the dominant mainstream ideology of a historical period. While exerting its value, it also obtains the conditions for its development, thereby achieving harmonious development with society.

The current situation of wushu teaching at the university

Wushu carries China's rich traditional culture, and schools are important areas for inheriting Wushu culture. There are many problems in Wushu's teaching. The teacher training model only focuses on the division of majors and does not pay attention to the comprehensive improvement of various qualities. Guo & Wang (2023) found through research that in traditional higher vocational Wushu teaching, teachers pay too much attention to the teaching of theoretical knowledge and Wushu skills, dominate the teaching process too much, and cannot effectively activate students' main position in teaching.

Physical Education Teaching

Physical education teaching is an important research field in the field of education, involving teaching content design, teaching method selection, student participation and motivation, classroom management and security, etc., to explore the key factors and methods in physical education teaching.

The quality and effect of PE teaching are affected by many factors, including teaching content design, teaching method selection, student participation and motivation, classroom management, and security. According to the relevant theories and practical experience, teachers should constantly summarize and improve the teaching methods, improve the teaching level and professional quality, and provide students with better physical education services.

The Application of Flipped Classroom in Physical Education Teaching

Liu (2023) took the badminton project of higher vocational colleges as an example to conduct a 12-week experimental study of flipped classroom teaching. The conclusions are as follows: 1) The flipped classroom teaching model combines online and offline to enable students to understand the basic principles of badminton. Have better understanding and mastery; 2) Both the flipped classroom teaching model and traditional teaching can promote students' mastery of badminton technical movements such as serving high shots and hitting high shots from the backcourt, but the improvement effect of the flipped classroom teaching model is more significant; 3) Both the flipped classroom teaching model and traditional teaching can promote the improvement of basic badminton abilities, but in the two test indicators of return running and forehand and backhand kicks, the flipped classroom teaching model has a better training effect; 4) Flipped classroom teaching Compared with traditional teaching, there is no significant difference in students' behavioral attitudes, target attitudes, behavioral cognitions, behavioral habits, and behavioral intentions. However, in terms of emotional experience, behavioral control sense, and subjective standards, the flipped classroom teaching model has better improvement results.

In summary, the experimental results on flipped classrooms in school sports programs show that flipped classrooms can effectively strengthen students' acceptance and internalization of knowledge and





skills, and improve students' interest and motivation in learning. However, there are no questions about whether the flipped classroom teaching model can enhance students' In terms of physical fitness, no consensus has been reached, so more attention will be paid to experimental verification of this part.

Related Research

Liu (2016) took Wushu optional courses in colleges and universities as an example, built a MOOC flipped classroom teaching mode in Wushu optional courses in colleges and universities, and conducted a comparative study with the traditional teaching mode, to provide a basis for the teaching reform of public optional courses in colleges and universities. The flipped classroom teaching mode of the wushu option courses in colleges and universities is researched and constructed. Through the research, it is found that under the MOOC flipped classroom teaching mode, students' wushu basic skills test scores and unit test scores are significantly better than the traditional teaching mode, students' wushu routine test scores are significantly better than the traditional teaching mode, and students' wushu free creation scores are significantly better than the traditional teaching mode. Students' satisfaction with MOOC flipped classroom teaching mode is significantly higher than that of traditional teaching mode. MOOC flipped classroom teaching mode is suitable for wushu optional courses in colleges and universities. This mode can improve students' skill levels and mobilize students' learning initiative and creativity.

In summary, to sum up, there are many flipped classroom teaching models used in higher education and basic education at home and abroad, most of which focus on practical and theoretical teaching. The research on flipped classrooms abroad is relatively mature, but it is relatively weak in China, especially in teaching design. And lack of pertinence in teaching evaluation. By sorting out the research literature, we found that most of the research results on f are concentrated in liberal arts and information technology courses, and there are fewer studies on sports, especially in Wushu courses. Flipped classrooms originated abroad and spread to my country. Therefore, when applying for flipped classrooms in our country, we must proceed from our country's national conditions and academic conditions and cannot blindly copy them. We must carry out specific design and implementation according to the specific conditions of our country. Although the above research results are significant, there are still shortcomings, and curriculum design also needs to be better applied. Experimental results on the use of flipped classrooms in school sports projects show that flipped classrooms can effectively strengthen students' acceptance and internalization of knowledge and skills and improve their interest and motivation in learning. However, it is unclear whether the flipped classroom teaching model can improve students' physical fitness, no consensus has been reached, therefore, more attention will be paid to the experimental verification of this part.

Wushu requires innovative teaching. Based on the results of previous research on Wushu teaching, it is found that Wushu teaching has achieved some results in other teaching methods. With the rapid development of the Internet, mobile phones and other electronic products have become a part of people's lives. In sports colleges, Wushu In the teaching process, combined with the flipped classroom teaching model, is more in line with the actual needs of modern teaching. This study will conduct an experimental study on physical fitness and the first section of Sanlu Changquan, try to make up for the shortcomings in the platform selection of sports events and curriculum design in the above research, and combine the skills practice of Wushu with the theoretical knowledge of the project, to Constructing a complete flipped classroom teaching system for Wushu teaching provides an innovative way to combine traditional Wushu with modern teaching and explore the impact of the flipped classroom teaching model on the effectiveness of Wushu teaching in sports colleges.

Conceptual Framework

The conceptual framework for this research is as follows:

The independent variable is the specific training program.

The dependent variable is the improvement of wushu skills of sophomore students at Guangzhou Sport University.



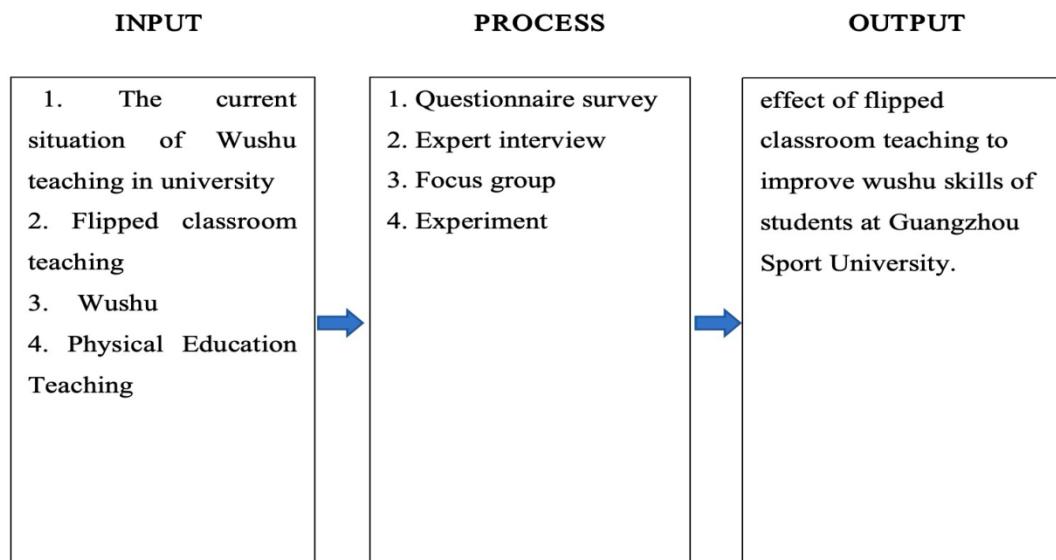


Figure 1 Conceptual framework

Main Objective

Research Tools: In this research, the following tools were used to conduct the research: (1) Questionnaires for students, (2) Interview form, (3) Flip Classroom Teaching Plan, and (4) Wushu Skills Test

Population and Sample: Population specification and size, the research objects are 120 students from four classes majoring in wushu at Guangzhou Sport University in the 2023 academic year. All of them are national second-level athletes. By using the simple random sampling method, 60 students from two classes are selected as the sample group. The sample group is divided into two groups, with 30 students in the experimental group and 30 students in the control group. All the 60 sample students are male and all are national second-level athletes.

Data Collection: (1) Questionnaires will be distributed to all 60 students by way of on-site distribution to understand the difficulties and problems in wushu skills learning of students. (2) Draft the questions used in the expert interview and evaluate the questions in the expert interview form by assessing their alignment with the objectives through project-to-objective alignment (IOC) based on the opinions of the 3 experts. (3) other experts conducted face-to-face interviews to establish a focus group questions framework, focusing on the necessary components of making a flipped classroom teaching plan to improve students' wushu skills. (4) 10 experts, including wushu coaches, physical education teachers, and experts, conducted a focus group and formulated a flipped classroom teaching plan to improve wushu skills for students at Guangzhou Sport University. (5) 5 students were selected to try out the developed flipped classroom teaching plan and to revise and improve the teaching plan to make it more appropriate. (6) Begin the experiment with 8 weeks, 3 days per week, 2 hours per day. The experimental group will learn using a flipped classroom teaching plan, while the control group will learn using a traditional teaching plan. (7) Conduct a Wushu skills test before the start of the class, after 4 weeks of teaching, and after 8 weeks of teaching. Then, the collected test data are analyzed and compared to study the effect of flipped classroom teaching to improve wushu skills for students at Guangzhou Sport University.

Data Analysis: (1) Use the Software Package to process and analyze data. (2) Descriptive statistical methods, including the computation of the average and standard deviation, are utilized for analyzing the data collected from the questionnaire. (3) To determine the average score of questionnaires for students, based on the information provided by students, the researcher utilized the Likert scale for assessment. The meanings of 5 scale evaluation are 1 = Very Poor, 2 = Poor, 3 = Moderate, 4 = High, 5 = Highest.

The details of the score criteria are as follows:

Average score range Meaning

1.00-1.79 Very Poor

1.80-2.59 Poor

2.60-3.39 Moderate

3.40-4.19 High

4.20-5.00 Highest

One ANOVA was used to analyze the experimental data such as pre-test, after 4 weeks of teaching, and post-test.

Dependent T-test was used to analyze the test results between one group (1) the pre-test and after 4 weeks of teaching; (2) after 4 weeks of teaching and post-test; and (3) the pre-test and post-test.

An independent T-test was used to analyze the test results between the two groups.

Research method

1. Descriptive statistical methods, including the computation of the average and standard deviation, are utilized for analyzing the data collected from the questionnaire.

2. ANOVA was used to analyze the experimental data such as pre-test, after 4 weeks of teaching, and post-test after 8 weeks of teaching.

Results

1. Present situation and existing problems of traditional wushu teaching

1. Questionnaire Analysis:

Table 1 Student Wushu classroom study questionnaire

Questionnaire items	Totals		Result
	\bar{X}	S.D.	
1. Do you think the current venues and facilities for Wushu teaching meet the needs?	3.89	0.83	Moderate
2. Are you satisfied with the professional level of the Wushu teachers in your school?	3.32	0.77	Moderate
3. Do you think the current teaching methods of Wushu are diversified?	2.21	0.74	Moderate
4. Do you think the current Wushu teaching content covers enough theoretical knowledge and practical skills?	3.46	0.83	Moderate
5. Are you satisfied with the wushu instruments used in the current wushu teaching?	2.25	0.59	Moderate
6. Do you think the current amount of Wushu teaching hours meets the current learning needs?	3.14	0.52	Moderate
7. Do you think that the multimedia teaching should be integrated into the Wushu teaching?	3.60	0.69	Moderate
8. Does your current teacher's teaching help you improve your Wushu skills?	4.14	0.71	Moderate
9. Do you approve of the technical level of the current teacher?	4	0.67	Moderate
10. Does the school Wushu equipment meet the current class needs?	3.93	0.38	Moderate
11. What do you think are the problems in the current Wushu teaching?			
12. Whether there are other requirements for the existing wushu training venues?			

According to the results of the questionnaire survey on students' Wushu classroom learning, the majority of students in the experimental group and the control group like and look forward to taking Wushu



classes, and believe that there are problems in the current Wushu teaching such as insufficient places, limited class time, more learning content, and non-standard actions of individual teachers. In addition, a few students think that Wushu classes are difficult.

2. Expert's Interview

Through the data analysis of the questionnaire results of 60 wushu students and interviews with 5 wushu coaches/teachers, this paper aims to understand the teaching status quo and existing problems in the current wushu teaching process. In summary, the opinions of the above experts and students on the teaching situation provide an important reference for the integration of flipped classroom mode into Wushu teaching and promote the modern development of Wushu teaching by strengthening teaching practice and effectively integrating modern science and technology. It is worth noting that in the process of making teaching plans, teachers should choose reasonable and effective teaching plans and measurement standards according to the specific situation of students and expert opinions. At the same time, teachers should pay attention to student's physical and psychological conditions in the course of the class to ensure the safety and effectiveness of classroom teaching. Only in this way can students effectively improve their Wushu skills, give full play to their Wushu potential, and achieve better results.

3. Focus group

Evaluation and adjustment: When martial arts teaching adopts flipped classroom teaching, the teaching effect should be evaluated regularly, and appropriate adjustments should be made according to the evaluation results of 10 experts. For example, when students ask questions about teaching methods, they should answer and classify them promptly. If the teaching goal is too high or too low, appropriate adjustments should be made according to the student's performance in the class.

4. Test items and evaluation criteria

Table 2 Test items and scores

Category		Special quality				Special technology	
Item	Wu Long Pan Da	Single Leg Kick in Place	Lunge	Balance with one knee raised	Split	San Lu Chang Quan	
Score	10 mark	10mark	10 mark	10 mark	10 mark	50 mark	
Total value			50 mark				

5. Develop an 8-week teaching plan

8 weeks of short-term teaching, 3 times a week, 2 hours each time according to the special quality of students, improve the sensitivity quality, explosive power, strength endurance, flexibility, balance ability, cardiopulmonary endurance, improve the technical level of students' special skills. Specifically includes Power teaching(Punch fist, Ride the arm, Foot position, Bow stance), Flexible teaching (Split) , Balanced teaching(Balance with one Knee raised), Routine teaching(San Lu Chang Quan teaching and key points and difficult points).

The above precautions, evaluation criteria, and teaching plan were sent to 10 experts for evaluation, and the 10 experts unanimously approved the evaluation standards, believing that the developed Wushu teaching program and evaluation standards were scientific and reasonable, and could effectively improve students' Wushu technical level, so the teaching program could be used in the Wushu flipped classroom teaching.

Develop an 8-week teaching plan

6. Experimental results and analysis

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The results of the special quality test were analyzed before, after 4 weeks, and after 8 weeks of teaching.

Table 3 Results of data before experiment, 4 weeks after teaching, and 8 weeks after teaching

Period	Wu Long Pan Da	F	P
Pretest	3.967 ± 1.129	44.927	0.000***
4 weeks after the experiment	5.367 ± 0.809		
8 weeks after the experiment	6.233 ± 0.679		
Period	Single Leg Kick in Place (L)	F	P
Pretest	16.3 ± 1.418	11.074	0.000***
4 weeks after the experiment	17.1 ± 1.517		
8 weeks after the experiment	18.1 ± 1.517		
Period	Single Leg Kick in Place (R)	F	P
Pretest	16.4 ± 1.329	15.469	0.000***
4 weeks after the experiment	16.9 ± 0.923		
8 weeks after the experiment	17.9 ± 0.9231		

Table 3 (Continue)

Period	Lunge (L)	F	P
Pretest	5.733 ± 1.552	11.576	0.000***
4 weeks after the experiment	6.733 ± 1.596		
8 weeks after the experiment	7.7 ± 1.601		
Period	Lunge (R)	F	P
Pretest	7.333 ± 1.583	3.271	0.043**
4 weeks after the experiment	7.167 ± 1.642		
8 weeks after the experiment	8.167 ± 1.642		
Pretest	12.767 ± 8.823	26.928	0.000***
4 weeks after the experiment	32.733 ± 19.307		
8 weeks after the experiment	56 ± 40.327		
Period	Balance with one knee raised (R)	F	P
Pretest	13.7 ± 14.646	34.038	0.000***
4 weeks after the experiment	36.1 ± 16.044		
8 weeks after the experiment	58.3 ± 29.042		
Period	Split (L)	F	P
Pretest	23.817 ± 8.144	13.303	0.000***
4 weeks after the experiment	19.6 ± 6.201		
8 weeks after the experiment	14.567 ± 6.35		
Period	Split (R)	F	P
Pretest	24.167 ± 8.972	13.393	0.000***
4 weeks after the experiment	19.133 ± 6.073		
8 weeks after the experiment	14.2 ± 6.037		



Experimental data from the above the Wushu flipped classroom teaching mode teaching effect is higher than the traditional teaching mode, flipped classroom teaching mode can effectively improve the Guangzhou Sport University 2023 school year second grade Wushu professional students of Wushu technical ability.

Conclusion

1) Wushu flipped classroom is conducive to the improvement of wushu special quality and technical ability

Research data show that through the assignment and completion of after-class tasks, flipped classroom teaching of Wushu can improve students' special quality and technical ability more scientifically and effectively than traditional classroom teaching of Wushu, especially in the explosive power and flexibility of lower limbs. Lower limb explosive power and flexibility are the key and difficult points of Wushu teaching, which have a great impact on the technical level and practice level of Wushu, and are the most troublesome problems for teachers in traditional Wushu teaching.

2) Wushu flipped classroom is conducive to stimulating students' consciousness of learning Wushu

The flipped classroom of Wushu is centered on the development of students and uses new media information technology to assist students in learning. At present, multimedia, network platforms, real-time communication, literature retrieval, and other technologies based on the development of Internet technology make information acquisition and dissemination easier. Teachers can use Internet technology to build appropriate teaching videos for students and quickly distribute them to students, who can watch them anytime and anywhere through mobile terminals, or collect interesting knowledge by themselves through the Internet.

3) Flipped classroom teaching mode promotes the overall quality improvement of teachers

Flipped classroom puts forward new requirements on the overall quality of teachers. To fully improve the quality of Wushu teaching, teachers need to actively improve themselves and constantly adapt to the new teaching mode and teaching method, to realize the lifelong learning of teachers and provide strong support for education.

Discussion

Through the analysis of the 8-week experiment results, the flipped classroom teaching model can play an important role in the Wushu teaching at the Guangzhou Institute of Physical Education. The improvement in students' sports quality, special quality, and technical level is remarkable. In terms of learning interest, friendship, and interactive attitude, the experimental group of flipped classroom mode is significantly better than the control group.

This study effectively corresponds to Chen and Gao (2022), "The design of physical education teaching content should be based on the development characteristics and needs of students, adopt diversified teaching methods, and pay attention to the combination of theory and practice". "Compared with traditional classroom teaching, flipped classroom mode is more conducive to students' acquisition and application of Wushu technology. It is more conducive to the development of students' problem-solving skills and critical thinking "It effectively improves students' interest in learning, and improves students' learning ability. At the same time, it also meets the needs of students' independent learning. It can significantly improve the teaching effect and has great application value. Compared with Liu (2022) and Liu (2023), this paper uses the literature method, questionnaire survey method, experiment method, mathematical statistics method, and other research methods, and uses the teaching mode of "flipped classroom + Wushu" to conduct experiments, which has certain advantages in terms of classroom teaching effect and students' Wushu learning results.

In addition, teachers should constantly adapt to the new teaching modes and teaching methods, to realize lifelong learning, improve the overall quality of teachers, and provide a strong support for education.





Recommendations

1. The practical value of flipped classroom teaching mode should be viewed objectively and the relationship between flipped classroom teaching mode and traditional teaching mode should be viewed dialectically.
2. The research finds that there are two problems in the video resources of wushu teaching on the network: the learning video is not systematic and the video content and time are not planned. It is suggested to build a systematic wushu teaching video resource library.
3. The time of each part of the flipped classroom is reasonably optimized, and the self-study time before class is compressed into 90 minutes according to the teaching ratio, which becomes the flipped classroom teaching form, to reduce the excess burden of students' learning time.

Reference

Bishop, J. L., & Verleger, M. A. (2013). The flipped classroom: A survey of the research. *ASEE National Conference Proceedings*, 30(9), 1-18.

Chen, X., & Gao, F. (2022). Flipped Classroom" teaching of Wushu option course in colleges and universities. *Science and technology style*, 14(16), 57-60. doi:10. 19392/j.cnki.1671-7341.202216019.

Guo, Y., & Wang, X. (2023). Research on vocational martial arts classroom teaching under the flipped classroom teaching model. *Forum on Education and Teaching*, 45, 169-172.

Khan, S. (2007). *Salman Khan's third attempt to change the world of education*. Retrieved from: <https://www.tes.com/magazine/analysis/general/salman-khan-how-ai-can-transform-education>

Liu, J. (2016). Construction and experimental research of MOOC flipped classroom teaching model -- A case study of Wushu optional courses in universities. *Journal of Guangzhou University of Physical Education*, 2,121-123. doi:10.13830/j.cnki.cn44-1129/g8.2016.02.032.

Liu, X. (2022). *Based on the study on the platform of the Wushu to flip the effect of classroom teaching empirical studies*. Master's degree thesis: Yunnan Normal University.

Liu, Y. (2023). *The Application Effect of the Flipped Classroom Teaching Model Based on SPOC in Badminton Technique Teaching in Vocational Colleges*. Doctoral Thesis, Jiangsu: Nanjing Sport Institute.

Lo, C. K., & Hew, K. F. (2017). A critical review of flipped classroom challenges in K-12 education: Possible solutions and recommendations for future research. *Research and Practice in Technology Enhanced Learning*, 12(1), 4. <https://doi.org/10.1186/s41039-016-0044-2>

Qiu, P., & Yang, J. (2009). New perspectives on the study of martial arts concepts. *Journal of Shanghai University of Sport*, 33(6), 1-5, 29. <https://doi.org/10.3969/j.issn.1000-5498.2009.06.001>

Zhu, S., & Song, H. (2012). A brief discussion on the application of "flipped classroom" in agricultural technology training. In Proceedings of the 10th China Modernization Research Forum (pp. 284-289).

