

# SWOT Analysis of Flipped Classroom Model Applied to Public Physical Education Teaching in Colleges and Universities in the Post-Epidemic Era

## -- A Case Study of Jiangxi Normal University

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### Abstract

At present, China is in the post-epidemic era, the epidemic has not completely ended, still affecting people's normal life, university teaching is also affected. Based on SWOT analysis, this paper discusses and analyzes the advantages (S), disadvantages (W), opportunities (O) and challenges (T) of the application of "flipped classroom" in public physical education classes in colleges and universities in the post-epidemic era. Literature, interview and questionnaire were used to support the SWOT analysis. Study, edge (S) in the traditional teaching mode can't meet the needs of students, turn the model of classroom in university public physical education class teaching can break the limitation of the time space, optimize the physical education teaching effect, can also change the traditional mode of thinking, inspire students' learning enthusiasm, and you can also strengthen the communication between teachers and students, promote the cooperation between classmates. Its disadvantage (W) lies in the lack of theoretical support for flipped classroom model, the lack of teachers and related literature on this model. Opportunity (O) is the general requirement put forward by the Ministry of Education at the right time to "stop teaching and stop teaching". In addition, with the advent of 5G era, the state also encourages information-based education, which all create conditions for the development of flipped classroom. The challenge (T) lies in the transformation of teachers' teaching philosophy, the improvement of the skills of using electronic devices, and the autonomous learning ability of students.

### Keywords

Post-epidemic Era; Flipped Classroom Model; College Public Physical Education Class; A SWOT Analysis.

## 1. The Presentation of the Problem

In the post-epidemic era, the strain of epidemic prevention and control still affects the normal teaching in colleges and universities. The Ministry of Education timely put forward the general requirement of "ceaseless teaching and ceaseless suspension of classes". In response to the ministry's call, universities across the country have begun to explore online teaching models that suit their own characteristics. Flip the classroom is a new kind of mode, it is different from traditional teaching, broke the limit of time and space, through the network information technology knowledge for students to master the process of reverse arrangement, make the teaching process from "teach me" into "first after learning guide", before class students to self-study through teacher prepared in advance the teaching video, In class, teachers solve the problems encountered by students in the process of self-study, and students discuss and analyze each other. After class, they sort out and improve.

As a special subject different from other subjects, physical education needs high operability. In its teaching process, it not only needs technical operation, but also needs strong theoretical support. Whether flipped classroom can be better applied to public physical education classes in colleges and universities in the post-epidemic era requires a comprehensive analysis of its strengths, weaknesses, opportunities and challenges.

Is the Ministry of Education, Jiangxi Normal University in Jiangxi province people's government to build colleges and universities and the Midwest based ability construction in colleges and universities, colleges and universities to be included in the national colleges and universities, the first batch of deepening the reform of creative education demonstration "sports aesthetic infiltration action plan" in colleges and universities across the country, for sports value degree is very high, also encourage constantly in the process of teaching innovation and reform. In March 2022, the epidemic in Nanchang became severe, and colleges and universities in Nanchang area also entered the closed management, Jiangxi Normal University is no exception, teachers and students have to use online teaching and online and offline combined teaching. In conclusion, Jiangxi Normal University is a representative case study in this study. It also provides valuable suggestions for colleges and universities in other regions to promote the "flipped classroom model" into public physical education classes in colleges and universities.

## 2. Research Object and Method

### 2.1. Study Subjects

In this paper, the application of flipped classroom in public physical education in colleges and universities is taken as the research object. The main survey objects are physical education teachers and some students participating in public physical education in Jiangxi Normal University.

### 2.2. Research Methods

#### 2.2.1. Literature Method

Through the school library, China National Knowledge Infrastructure (CNKI), Global Academic Express APP, Baidu Academic and other multi-channel information resources, respectively with "flipped classroom", "flipped classroom", "SWOT analysis of flipped classroom", "college public physical education" and other keywords were searched, and the relevant journals and master's theses were reviewed, summarized and sorted out.

#### 2.2.2. Questionnaire Survey

In this study, 20 questionnaires were distributed to in-service physical education teachers in Jiangxi Normal University. The College of Literature, the College of Music, the College of Software, the College of Geography and the College of Biology each distributed 100 questionnaires, mainly for freshmen and sophomores. Teachers distributed 20 questionnaires and 20 were returned with 100% validity, while students distributed 500 questionnaires and 500 were returned with 100% validity.

**Table 1.** Questionnaire distribution and recovery Table

The questionnaire	issue	recycling	The recovery rate of	effective	To be efficient
students	500	500	100%	500	100%
Teachers'	20	20	100%	20	100%

### 2.2.3. Interviews

Some teachers of Physical Education College of Jiangxi Normal University were interviewed. Through wechat or phone, we learned their understanding and views on the "flipped classroom model" and their opinions on the application of flipped classroom in public physical education classes in colleges and universities, so as to make sufficient preparations for the subsequent SWOT analysis.

### 2.2.4. SWOT Analysis

SWOT analysis was used to summarize and summarize the conclusions of the questionnaire survey and interview. The advantages, disadvantages, opportunities and challenges of the flipped classroom model in college public physical education class are analyzed, and conclusions and suggestions are given, so as to provide theoretical basis and reference opinions for the application of flipped classroom in college physical education class.

## 3. Research Results and Analysis

### 3.1. Advantages of Flipped Classroom Model Applied to Public Physical Education Classes in Colleges and Universities in the Post-Epidemic Era (S)

#### 3.1.1. The Traditional Model of Public Physical Education in Colleges and Universities Cannot Meet the Needs of Students

**Table 2.** Students' Views on traditional public Physical education (N=500)

	Complete credits	To keep fit	happy	Acquire skills	other
The number of	325	59	50	46	20
The percentage (100%).	65	11.8	10	9.2	4

As can be seen from Table 2, many students, after entering colleges and universities, do not pay much attention to physical education, they have to take part in the public physical education also hold the mentality of coping, in order to complete the task to get credits. Only a small proportion of students believe that physical education can strengthen their body and make them happy. An even smaller proportion of students want to gain athletic skills through public physical education classes. In the long run, students get used to this traditional class mode, from the psychological easy to public PE class slack psychology, is not conducive to the development of students' physical and mental health. Therefore, the reform of public P.E. in colleges and universities is also very necessary.

#### 3.1.2. Break the Limitation of Time and Space and Optimize the Teaching Effect of Public Physical Education

In the post-epidemic period, many colleges and universities have adopted the method of combining online and offline teaching, and the public physical education with strong operability often fails to carry out smoothly, and the teaching effect is greatly compromised. In March 2022, Jiangxi Normal University entered the epidemic prevention and control management period, which disrupted the original teaching plan of teachers. Through understanding, many physical education teachers had to switch to online teaching, and students' learning effects on sports skills were reduced, and they could not receive face-to-face guidance as usual. During the epidemic prevention and control period, schools were closed, and teaching was limited by time and space. The traditional physical education model is highly dependent on time and space.

**Table 3.** Effects of epidemic prevention and control on physical education teachers' teaching (N=20)

	Very large impact	Great influence	Have an impact on	Less affected	Have no effect on
The number of	15	4	1	0	0
Percentage (100%)	75	20	5	0	0

As can be seen from Table 3, the sudden epidemic prevention and control has had a great impact on the teaching of physical education teachers. 75% of the teachers believe that the impact on their teaching is very great. According to the interview, many teachers believe that it is difficult to carry out online teaching in physical education, and the online teaching cannot play a good effect. In the unstable period of the epidemic, not only in Jiangxi, but also in many regions, sometimes offline face-to-face teaching can be carried out, and sometimes online teaching can be carried out when the epidemic is severe. Used the classroom flip model, students through the difficult point of teaching video to understand action, first to learn the contents of the have a good understanding, after the independent practice found their own problems and deficiencies, to help when allow offline teaching smoothly the teaching content, greatly saves the time of teaching, make students learn more content for a limited time. Teachers can also according to the region the disease severity for the proportion of online and offline content make proper adjustment, can be impossible to offline teaching period, increase the content of the online video teaching, also can through online meeting for centralized form of answering questions and discussion, the need to face the course of time, it also can make full use of good time.

### 3.1.3. Stimulate Students' Enthusiasm for Physical Education through the New Teaching Model

**Table 4.** Whether students are willing to accept the new physical education teaching model (N=500)

	Very willing to	Willing to	general	Don't want to	Very reluctant
The number of	428	55	17	0	0
Percentage (100%)	85.6	11	3.4	0	0

It can be found from Table 4 that most of the students are very willing to accept the new mode of physical education. As a new teaching mode, flipped classroom can display the explanation, action demonstration and other contents in the form of videos. Entertainment elements can also be added in the production process of videos to make the teaching videos vivid and colorful. This can not only make the teaching content more vivid, but also improve the enthusiasm of students to learn. Students can watch the video materials in advance and repeatedly watch the parts they do not understand, so that they can better understand the key points of learning movements and feel the fun of sports.

### 3.1.4. Get out of the Fixed Teaching Mode and Traditional Thinking Mode

Jiangxi Normal University has a strong teaching force, the level of physical education teachers is also very high, physical education teaching ability is also very strong. But in traditional physical education teaching, physical education mode is relatively fixed, is divided into "beginning - prepare parts - basic parts - the end", the process is basically a "collection doghouse - teacher announced the main content and difficult point in class - preparing activities - teacher action demonstration and explanation, student learning, teachers' correction, independent practice or group practice". In traditional P.E. teaching, teachers play the dominant role, and

students only need to follow the arrangement of teachers. Neither students nor teachers can get out of this fixed mode of P.E. class. When offline teaching is not possible, many physical education teachers will find it difficult to change the teaching method and make good use of online teaching, which will lead to the situation that "teachers do not know how to conduct physical education while facing the screen" and "students do not know how to learn".

Flipped classroom can effectively change this situation. Before class, teachers upload teaching videos made by themselves or on educational websites to the class group or wechat official account in advance, and students can choose the appropriate time to learn. College students have relatively free learning time. Students can choose their own sufficient or good time for video learning. Using the flipped classroom teaching mode, students can choose their own learning speed according to their own grasp of the situation, they can fast forward to the places they are familiar with, and they can spend more time to learn the places they are unfamiliar with. Students can timely find out the shortcomings of their own knowledge, and teachers can timely understand the areas that students do not understand, so that teachers can carry out targeted follow-up explanation and teaching. In addition, students can also independently expand the learning content, and they can search for the content they are interested in through the Internet to learn independently, so as to exercise themselves. In this way, students can not only expand their knowledge, but also exercise their independent learning ability.

### **3.1.5. Strengthen the Communication between Teachers and Students and the Cooperation between Students**

In the traditional physical education teaching model, teachers explain and demonstrate, students listen and imitate, teachers guide, students practice, teachers correct mistakes, students correct, clear division of labor, lack of communication and exchange between teachers and students, and students are less cooperative learning. First of all, flipped classroom teaching model can greatly promote the communication between teachers and students. In the self-study stage before class, students can timely ask teachers through the network when they encounter problems, which increases emotional communication while learning knowledge. The main link in the class is to communicate and solve the problems encountered by students in the stage of independent learning, which increases the communication between teachers and students. Secondly, flipped classroom can also promote communication and cooperation between students. Before class, students can discuss and communicate with each other if they do not know the content. In class, they can increase the time of group cooperative learning and exercise the students' cooperative learning ability.

## **3.2. Disadvantages of Flipped Classroom Model Applied to Public Physical Education Classes in Colleges and Universities in the Post-Epidemic Era (W)**

### **3.2.1. Theoretical Support for the Flipped Classroom Model is Less**

First of all, the flipped classroom model is relatively novel. Although many researchers have conducted researches on this model, few universities have applied it to practical operation. This model mostly stays in the research stage of researchers, and more schools and teachers have no understanding of this theory. Secondly, unlike traditional physical education, flipped classroom model does not have a complete teaching system and theoretical system, so it is difficult to find a complete theoretical system and mature experience to learn from in the process of specific implementation. Through interviews and communication, we know that many teachers know the flipped classroom model, but there are few cases to refer to, and they do not dare to change the previous teaching model easily.

### **3.2.2. Few Teachers have Studied the Flipped Classroom Model**

**Table 5.** Physical education teachers' understanding of flipped classroom (N=20)

	To understand	A basic understanding of	Don't understand
The number of	7	11	2
The percentage (100%).	35	55	10

**Table 6.** Whether teachers conduct in-depth research on flipped classroom theory (N=20)

	is	no
The number of	5	15
The percentage (100%).	25	75

It can be seen from Table 5 that most teachers have a certain understanding of the flipped classroom model. It is also known from the interview that teachers have a certain understanding of the concept of this model. However, as shown in Table 6, few teachers have conducted in-depth research on flipped classroom. Most physical education teachers in colleges and universities have their own research directions and research fields, while the scientific research fields of physical education are also relatively wide, and only a part of them focus on the research of physical education teaching model. Therefore, many teachers do not have an in-depth understanding and research on the flipped classroom model.

### 3.2.3. There are Few Research Literatures on Flipped Classroom in College P.E.

There are many researches on flipped classroom theory in China, with a wide range of research fields and scopes. However, there are few researches on flipped classroom model of public physical education classes in colleges and universities. China National Knowledge Infrastructure (CNKI) was used to search the articles from 2010 to 2021 by keywords. Advanced search of the keyword "flipped classroom in college sports" revealed only 39 master's theses, 231 academic journals, and only 6 PKU core and CSSCI articles. For the advanced search of the keyword "flipped classroom in sports", there were 616 academic journals, but many of them were about primary and secondary schools, and only 19 core journals. There was only one core journal and only 10 academic journals about SWOT analysis of flipped Sports classroom. The research content of flipped sports classroom in colleges and universities is limited, and the contents of previous studies and summaries are limited, and a large number of subsequent researches are needed. There are still some difficulties in widely promoting the application of flipped classroom as a new model in college physical education.

## 3.3. Opportunities of Flipped Classroom Model Applied to Public Physical Education Classes in Colleges and Universities in the Post-Epidemic Era (O)

### 3.3.1. Policy Support of the Ministry of Education on "Ceasing to Teach, Ceasing to Teach"

Today, when the epidemic situation is still severe, many colleges and universities still adopt closed management or semi-closed management, online teaching and online and offline combined teaching measures. The traditional teaching model can not meet the current teaching in colleges and universities. The flipped classroom model can well reduce the pressure of epidemic prevention and control, and to a large extent, ensure that the teaching content will not shrink. The development of flipped classroom model is also a positive response to the call



of the country, to "stop teaching, stop teaching, stop teaching". Moreover, the flipped classroom is different from the simple online teaching, which is more in line with the current situation faced by colleges and universities in the post-epidemic era.

### **3.3.2. The State Encourages the Innovation of Educational Concepts and Teaching Models**

In recent years, the state encourages schools to develop information-based teaching and develop high-quality teaching resources, which provides favorable conditions for the development of flipped classroom. Flipped classroom can inject new vitality and vitality into teaching. In the post-pandemic era, many courses cannot be carried out smoothly, which will make students pay less attention to the monotonous physical education. Over class mode as a kind of new teaching mode, very innovative, can not only respond to a nation in the development of the education idea, also can largely improve the enthusiasm of students of physical education in colleges and universities can meet the personalized development of students, let students' thought more open, this can also be for the country cultivate more advanced talents with innovation of creative thinking.

### **3.3.3. National Emphasis on Physical Education**

In the Opinions on Comprehensively Strengthening and Improving School Physical Education in the New Era issued by the General Office of the CPC Central Committee and The General Office of the State Council on October 15, 2020, it is pointed out that school physical education is the basis of building morality and cultivating people, and cultivating socialist construction and successors with all-round development of morality, intelligence, physical education, beauty and labor. The state also attaches more and more importance to youth physical fitness. Public physical education in colleges and universities is also an important course to improve students' physical fitness and promote their physical and mental health, which is essential. The role of physical education can not be replaced by other subjects. It is the general trend to reform and innovate the teaching mode of physical education. In the post-epidemic era, physical education and health have become more important, and a good physique and healthy body are indispensable.

### **3.3.4. The Arrival of the Internet 5G Era**

Internet technology develops at a high speed. Now we have entered the 5G era, and the information technology is very mature. The combination of sports and the Internet is also in line with the development of The Times, in the daily college physical education teaching also often need to use the Internet, our teaching model should also make full use of this point.

Mobile phones, computers and other electronic devices are also indispensable in our daily life. The flipped classroom model needs to apply a lot of electronic technology, video recording, video production and online communication and discussion all need the support of electronic information technology. Nowadays, the wide application of electronic products has created favorable conditions for the smooth development of flipped classroom. Colleges and universities have also invested in the construction of a perfect computer network system, students can also use campus network, mobile phone traffic and other network learning. Students can also extend their learning through the network in their spare time.

## **3.4. Challenges of Flipped Classroom Model Applied to Public Physical Education Classes in Colleges and Universities in the Post-Epidemic Era (T)**

### **3.4.1. Challenges Faced by Colleges and Universities**

In the post-epidemic era, colleges and universities are facing great pressure, such as epidemic prevention and control pressure, student safety pressure and teaching quality pressure. In a very difficult time, promoting a new teaching model undoubtedly increases the workload of colleges and universities and makes them face more pressure. It is difficult to find mature

experience to refer to and learn from in a short period of time, and it is impossible to imitate the cases that have already achieved results. Colleges and universities need to take the initiative to explore in combination with their own circumstances.

In order to change the traditional teaching mode and implement a new teaching mode, it also needs many discussions from all over the school. In the post-epidemic period, it is difficult for teachers to gather for meetings and discussions in some areas where the epidemic is more severe. To implement flipped classroom in public physical education, it is necessary to screen and study the content of teaching videos. The advantages of face-to-face teaching and research are greater than online meetings, which will also make colleges and universities face many difficulties and challenges.

### 3.4.2. Challenges Facing Teachers

#### 3.4.2.1 Teachers' Application of Electronic Devices

To carry out flipped classroom teaching mode, many electronic devices need to be applied, such as video recording, video editing and dubbing, which require strong technical operations. Therefore, proficiency in the use of electronic devices is very important.

**Table 7.** Teachers' proficiency in using electronic equipment (video editing, etc.) (N=20)

	Very skilled	skilled	general	Not good at	Very unskilled
The number of	1	5	9	4	1
The percentage (100%).	5	25	45	20	5

As can be seen from Table 7, only a small part of the teachers are very skilled in the use of electronic equipment, and most of them have an average level of proficiency. Therefore, teachers need to spend extra time on learning and training, which causes certain difficulties for teachers in areas where the epidemic is more severe or for older teachers. However, in the post-epidemic period, teachers may not be able to concentrate on lesson planning and discussion, and they may not have enough time and space to teach and research the most suitable teaching videos for students. In areas where the epidemic is more severe, it is difficult for teachers to carry out unified training, and older teachers are unable to use electronic equipment proficiently, and it is difficult for them to operate and learn by themselves, thus causing some difficulties for teachers. Although there are many teaching video websites in China, teachers can find them, but it is difficult to find new and distinctive teaching content that is completely consistent with their own teaching content, which cannot meet teachers' personalized needs for teaching content.

#### 3.4.2.2 Transformation of Physical Education Teachers' Teaching Ideas

The traditional teaching model is "teach before learning", and the flipped classroom is "learn before guiding". The role of teachers has changed greatly. Many teachers are used to the fixed physical education teaching model, which is quite handy in the past teaching. However, the application of flipped classroom mode needs to change the teaching concept, and teachers need to make great changes and efforts to adapt to this new teaching mode.

Flipped classroom has higher requirements on teachers' teaching ability and comprehensive quality, because teachers need to constantly improve their own ability, both professional technology and information technology need to keep learning, so as to teach students better.



### 3.4.3. Challenges Faced by Students

**Table 8.** Students' self-evaluation of learning self-discipline (N=500)

	strong	On the average	medium	Below average	poor
The number of	21	78	188	157	56
Percentage (100%)	4.2	15.6	37.6	31.4	11.2

As can be seen from Table 8, both the very strong and the poor students comprise a small proportion, 15.6 percent of the students are above the middle and the majority of the students are below the middle. The middle and lower middle students are more dependent on external supervision and management. Students are used to passively accept the knowledge taught by teachers, and it is easy for them to slack off in classes without teachers' supervision. Therefore, many teachers will react that the quality of online courses is poor during the epidemic, and many students can't learn anything. Flipped classroom requires students to complete learning tasks independently without the supervision of teachers, which is also a big challenge to the change of students' learning habits. Therefore, students need to improve their ability of active learning, overcoming inertia and active exploration, so as to better adapt to the new model of flipped classroom. The implementation of flipped classroom mode is also a big challenge for students to change their learning habits, which has very high requirements for students' learning ability and learning attitude.

## 4. Conclusion and Suggestions

### 4.1. The Conclusion

As a new teaching model, flipped classroom is feasible to be applied to public physical education classes in colleges and universities in the post-epidemic era. Overall, flip class mode with as or even better than the effect of the traditional teaching mode, in the outbreak to the traditional teaching, flip class mode is a very good choice, but to turn to better promote the classroom applied in physical education in colleges and universities also need to grasp the advantages and opportunities, overcome difficulties and challenges.

### 4.2. Suggest

First of all, we should rely on our advantages and seize the opportunities. The adoption of flipped classroom, a new teaching model, can better respond to the national policy of "no suspension, no suspension". Teachers and students should open up their minds, not be limited to the traditional model, let flipped classroom become our help, make the teaching of public physical education in colleges and universities more novel, and improve students' motor skills. Secondly, we should take advantage of our advantages and deal with our disadvantages. In the information age, we should take advantage of the convenience brought by the Internet. We should vigorously promote the flipped classroom model, actively carry out relevant research, let more educators understand the advantages of flipped classroom, and let flipped classroom make a contribution to education in the post-epidemic era.

Finally, we need to overcome the disadvantages and meet the challenges. Colleges and universities should formulate plans according to their own conditions to lay a good foundation for the subsequent promotion of flipped classroom. To strengthen the training of teachers and popularize the use of electronic equipment, teachers should not only continuously improve their professional knowledge, but also keep up with the information age and master information technology. In addition to teaching students knowledge, schools should also improve students' autonomous learning ability. Students should also strengthen self-management and supervision, and be strict with themselves. During the epidemic period, they

should not relax in learning, and improve their own ability more comprehensively. Both teachers and students need to change the traditional concept and accept the new thinking mode, so as to promote the new teaching mode.

In short, in the post-epidemic period, if we want to widely promote the application of the new model of flipped classroom in college physical education, we should rely on the advantages, grasp the opportunity, use the advantages, deal with the disadvantages, overcome the disadvantages and meet the challenges, so that the new model of flipped classroom can be better applied in colleges and universities.

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