

# Research on the Implementation and Establishment of Aerobics “Flipped Classroom”

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**Abstract.** This paper mainly adopts the literature data method, the comprehensive analysis method and mathematical statistics method to learn the basic theories of flipped classroom, thereby learning from the successful practical experience of flipped classrooms in non-sports disciplines, combining with the characteristics of physical education disciplines to introduce the flipped classroom into aerobics teaching, and constructing an implementation plan of flipped classroom which is applicable to the aerobics teaching.

**Keywords:** Aerobics, Flipped Classroom, structure.

## 1. Explanation of the Aerobics Flipped Classroom

Flipped classroom is to transfer part of the knowledge in the teaching task to the outside of the classroom. Through the students' self-learning and then by using the opportunities of face-to-face interaction between teachers and students in the classroom to conduct active cooperation and interaction, thereby achieving the teaching objectives of deep learning and training the students' abilities to find problems, so solve problems and to cultivate their critical thinking skills. According to the characteristics and skill goals required of aerobics programs, the application of flipped classrooms to the teaching of aerobics is very suitable, because it is a discipline based on physical exercise skills. All the actions are performed through imitation, repeated practice and final completion so as to master the motions. Due to the reason that the time in the classroom is limited, students need a lot of time to understand the motor skills after learning new actions. Using the flipped classroom is equivalent to advancing the time of the class, and the time in the class is just used to strengthen or evolve the action, so that the students can master the action skills more accurately and improve the level of motor skills.

## 2. The Implementation Process of Aerobics Flipped Classroom

Through consulting a large number of relevant research of the implementation process of flipped classroom, it is found that the implementation process of flipped classrooms (as shown in figure 1) is mainly divided into three parts: pre-class stage, in-class stage and after-class stage. Each part involves the activities of teachers and students. Although there are essential differences between aerobics and other theoretical disciplines, it is also applicable to the implementation process.

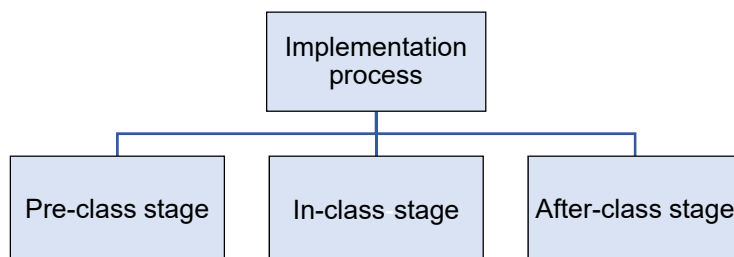


Figure 1. The implementation process of flipped classrooms

## 2.1 Pre-class Stage

The pre-class stage of aerobics flipped class (as shown in figure 2) mainly consists of the making of teaching materials, the setting of learning tasks, the uploading of teaching materials and tasks, the students' obtaining of materials and learning, the collection of questions and the making of teaching design in class.

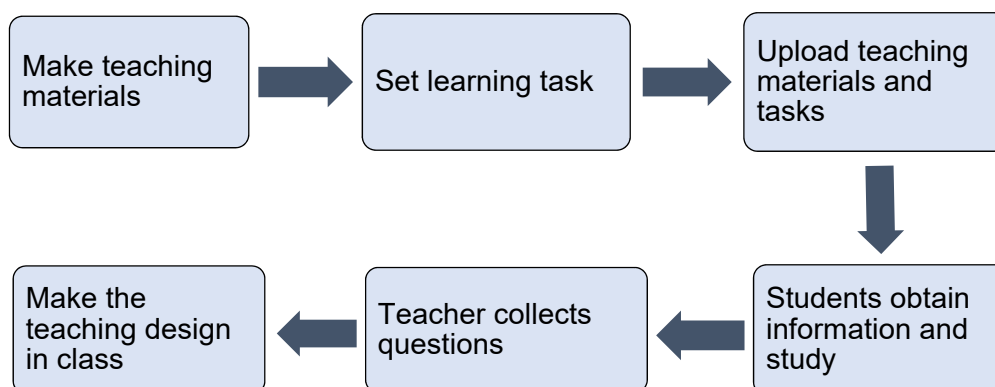


Figure 2. The pre-class stage of aerobics flipped class

### 2.1.1 Making Teaching Materials

Because of the superb performance and artistry of the aerobics program, we can enjoy the actions through the network as well as other channels, but it is also very difficult for students to learn through the performance video. Thus, the teaching materials such as action videos and theoretical knowledge, etc. of the students before class should be re-created by the teacher according to the teaching arrangement. For example, the complex motions can be decomposed carefully, and the teaching videos should have clear back-decomposition demonstrations, front-decomposition demonstrations and complete demonstrations. Before being released to the students, the teachers should check repeatedly if there are any errors or omissions in the skills. According to the specific circumstances, appropriate adjustments can also be made. For example, in the early stage of implementing the flipped class, students can't completely adapt to this learning rhythm. So, the teachers shouldn't release too much teaching materials to make sure it is convenient for the students to understand and absorb. After the students can adapt to the learning rhythm of the flipped classroom well, the teaching materials released each time can be appropriately increased so as to meet the learning demands of the students.

### 2.1.2 Set Learning Tasks and Test Questions for the Released Teaching Materials

The knowledge content of different disciplines is different, and there are also differences between knowledge points in the same discipline. The teaching characteristics of aerobics are different from that of other cultural disciplines, so the teachers need to set specific learning tasks and testing requirements according to the teaching materials to be published. Learning tasks and tests are an important means of implementing learning evaluation, which is also an important way to supervise students' studying. For example, the teachers should require the students to complete the actions in the video in class. In this way, the teachers can use short time in the class to let the students complete the simple assessment and adjust the teaching methods and means according to the assessment so as to guide the students' after-class study better.

### 2.1.3 Upload Teaching Materials and Learning Tasks and Notify Students to Check Them

It seems to be easy to conduct the operation of uploading data, but the way and time of uploading is worthy of our study. The study of the way of uploading is to allow students to easily access and watch the teaching materials. For example, we use WeChat as the online platform for implementing aerobics flipped classes, but we should not be limited to using WeChat only. As for the files with too much memory and especially HD videos, we can also use the public mailbox to upload compressed RAR(Roshal ARchive), and it is more convenient for students to download when downloading data. Students who upload data too early may be looked down upon due to the long time left for them, or

they may forget the action after a short study. Uploading information too late may not achieve good learning results due to the rush of studying time. Thus, the teachers should make various considerations according to the actual situation when uploading materials.

#### **2.1.4 Students Obtain Information and Learn Independently**

After receiving the teachers' notices, the students must obtain the information in a timely manner and store the data for reuse. Under the premise of clear learning tasks, requirements and evaluation methods, the students should carefully study and explore technical activities with the help of teaching materials. In the process of self-study, solving confusion through self-effort is an effective way to improve the mastery of knowledge. When having the unsolvable confusion, the students can learn to imitate each other. The online platform can release the constraints of time and space to a certain extent. It can also act as the medium of communication between students. Completing a learning task or testing is an important way to evaluate the effectiveness of pre-class learning. Based on self-directed learning and collaboration with classmates, students can complete their learning tasks or tests independently. After experiencing the two links of learning and examination, the students should record the problems and difficulties which they encounter in the whole process and which are not solved through various efforts in detail, they should also send them to the teachers, because these problems and difficulties will be the key to further improving students' learning outcomes.

#### **2.1.5 Teachers Collect Student Questions and Task Completion.**

In the process of self-learning, students can consult the teacher through the online platform about the confusion or learning actions they face with. The teacher can understand the whole learning situation from the perspective of the students by means of the collection of questions. However, the students themselves can't always identify their learning problems accurately, so the teachers must combine the test results and the completion of the learning tasks so as to lay the foundation for the next stage of teaching design through the collection and analysis of multiple information.

#### **2.1.6. Make Instructional Design in Class**

The targeted instructional design is the premise to turn the classroom teaching to achieve the expected effect, which is also an important step for better connecting the undergraduate study with the class study. The teaching design here mainly refers to the design of the learning activities in the class. Although the learning activities designed happen in the class, but if the teachers want the activities in the class to be carried out in an orderly manner and to achieve the expected learning effect, it is necessary for them to completely prepare and carefully design before the class so as to achieve the optimization of classroom effect and the deepening teaching.

### **2.2 In-class Stage**

In the classroom activities of flipped classrooms, some researchers believe that the activities in the class mainly consist of cooperation and mutual learning, display and reporting, exchange and arguments, and self-assessment; some researchers believe that the class should first be conducted by a quick assessment, and then the teacher should focus on common problems and give explanation as well as targeted guidance; and some other researchers believe that the main part of the class is cooperation and disambiguation, practice and consolidation, self-correction, expansion of research, reflection and conclusion. Although there are differences in the research of different scholars in the class, there are still some common activities which mainly consists of the test at the beginning of the class, collaborative exploration, targeted guidance, conclusions, evaluation and other links (as shown in figure 3).

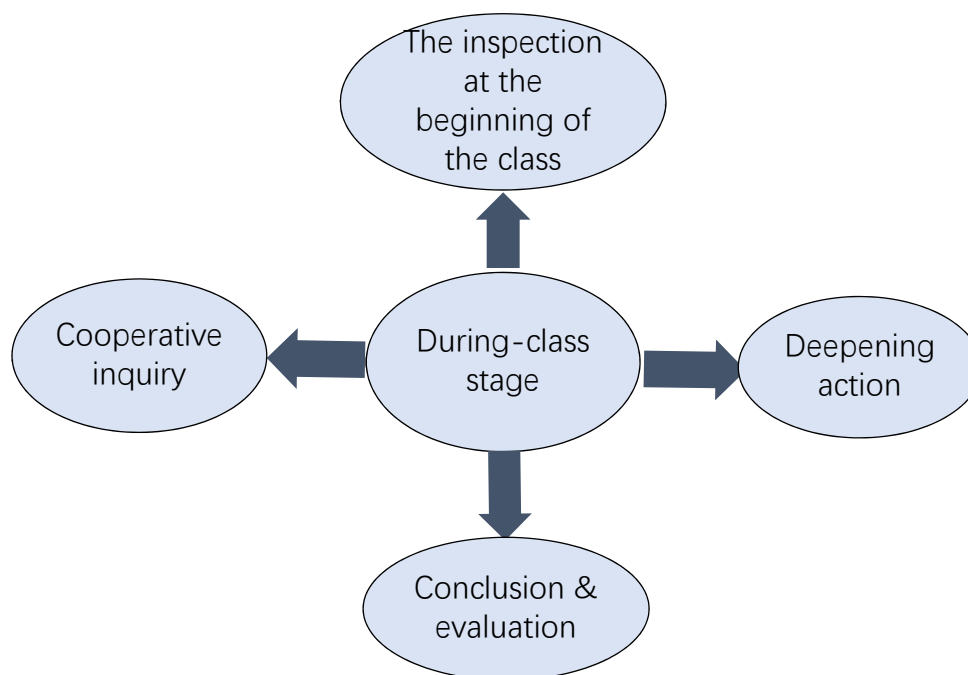


Figure 3. The activities which mainly consists of the test at the beginning of the class

The inspection at the beginning of the class is to inspect the students' knowledge at the beginning of the class and consider it as one of the methods to test and judge the students' pre-class learning. Cooperative inquiry is mainly in the form of groups, which is used to explore and discuss the problems happened in the pre-class study and the classroom assignments arranged by the teachers. Targeted guidance is the process refers to in the group discussion the teachers understand the learning situation of each group and guide as well as explain the problems occurred in the group in the process of inquiry and discussion. The conclusion and evaluation is the learning activity for the whole class. It can be a group of students' learning process, the display of learning achievements, reporting, and then commenting on each other, which can also be a conclusion and evaluation of the teacher in the learning process and learning achievements for each group or class.

As a matter of fact, from the form of the activities in class, there seems to be no obvious difference between the activities in the classroom and the traditional classroom. However, the difference between the flipped classroom mode and the traditional teaching mode lies in that the flipped classroom highly connects the pre-class activities with the class activities. The activities in the class are set to improve the students' mastery of knowledge based on pre-class learning. So, the activities in the class depend on the learning situation before the students. However, whether it is co-exploration in class, guidance, or summing up reviews, these are ultimately a form of learning. The teaching goals, teaching content, and even the different knowledge points of the same subject are different, so the form of learning activities is different. Aerobics just requires the students to be familiar with motions and master motions in advance. For students whose physical exercises are uncoordinated, the exercise time is greatly increased to promote the accuracy and proficiency of the motions. For students whose physical coordination is better, in the case of early learning motions, it is possible for the students to deepen the mastery of motions and complete the evolution of motions and improve the level of motion skills. At the same time, the students can serve as teaching assistants, thereby cultivating teaching ability.

In a word, the design of activities in the aerobics flipped classroom needs to be on the basis of the pre-class learning situation. The learning activities in the class mainly consist of the test at the beginning of the class, deepening motion, co-exploration, conclusion and evaluation, etc. In addition to these forms of learning, we can also design targeted classroom learning activities according to the technical action features.

### 2.3 After-class Stage

Yonggang Ding and Mengtian Jin and others believe that after class, the teachers should assign extended tasks for students, and then agree on a given time for online communication, so that students can share the learning process as well as learning achievements of the whole pre-stage; Rong Gu, Mi Zhang, etc. think that after class students can achieve the effect of consolidation and sublimation of knowledge through looking back at the teaching materials. Ruijuan Wang and Zhihong Yin believe that students can continue to ask for help from their teachers by means of the online platform after the class for the unresolved problems in the previous stage. It can be seen from a large number of related studies that the specific links designed by different researchers will differ with each other, but the common point is to attach emphasis on the use of teaching materials as well as online platforms. As a matter of fact, under any kind of teaching mode, the ending of a lesson does not mean the ending of the learning process. In general, after class, the teachers will evaluate and conclude the students' learning in the previous stage, find and deal with problems occurred in the class. And the students consolidate and improve the previous stage by means of different learning behaviors. On the basis of this aspect, there are nothings different between the flipped classroom and the traditional teaching mode. The feature of the flipped classroom is that with the help of the online platform and teaching materials, students' learning under the teachers' assistance mode is more optimized. For example, with the online exchange between teachers and students, the in-class tutoring is extended to the after-class stage, and the students' learning status is tracked for a long time. The specific methods of assistance are usually the questions that students still have not solved in the previous stage of learning though there are teachers online who are in charge of answering questions, guiding students to conduct higher-level exploration of knowledge, and collecting students' feedback to further improve the next stage of teaching plans. In short, the same as in-class teaching, after-class teaching doesn't have to apply fixed activities, which should make full use of the online platform to extend the advantages of students' learning and counseling time as well as space, to set up targeted activities, and to help students learn better.

### 3. Conclusion

The aerobics flipped classroom consists of three parts, namely the pre-class part, the in-class part and the after-class part. The pre-class part is mainly for teachers to make teaching videos and for students to obtain self-study materials, so that the students can have a preliminary mastery of the technical motions they have learned before class. The in-class part is mainly on the basis of the pre-class study. The teachers' targeted guidance and correction as well as the high-density practice of the students can promote the further internalization of knowledge and skills. The after-class stage has no fundamental difference from other teaching models, whose purpose is to further consolidate the knowledge and skills which have been learned. However, the flipped classroom has strengthened the tracking and coaching of teachers' learning through modern information technology tools.

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