

# University Education Model Under COVID-19

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**ABSTRACT.** *With the development of Internet information technology until now, the deep integration of information technology and education and teaching in the era of big data, online teaching has become an important trend of college teaching reform. Under the influence of the COVID-19 outbreak in early 2020, colleges and universities across the country postponed the start of the school year. The Ministry of Education required online teaching during the epidemic prevention and control phase to ensure that classes would not be suspended. The purpose of this paper is to consider and explore the higher education model under COVID-19. This paper discusses the application of flipped classroom teaching in higher education majors, analyzes the problems existing in the application process of flipped classroom teaching, and puts forward Suggestions. At the same time, it provides reference for the reform of the teaching mode of higher education majors after the opening of new term. This article uses the questionnaire survey method, takes 450 university students as the survey object. According to the feedback of college students on the teaching effect of the current teaching method, 81% of the students have fully adapted to the current teaching method and basically adapted to the current teaching method.*

**KEYWORDS:** *COVID-19, College Education Model, Flipped Classroom, Thinking and Exploration*

## 1. Introduction

The sudden outbreak of the epidemic has disturbed the normal teaching order in schools. In order to stop the spread of the epidemic to schools and ensure the safety and health of teachers and students, the Ministry of Education issued a notice on January 27, 2020, requiring schools to postpone the opening of the school year [1-2]. In February 2020, the Ministry of Education issued the Guidance on the Organization and Management of Online Education in Institutions of Higher Learning during the Epidemic prevention and control period, which clearly pointed out that all colleges and universities should give full play to the role of "Internet + education", effectively implement online teaching, and realize "teaching without stopping, without stopping" [3]. Lesson in this case, network teaching platform showing an unprecedented importance, many teachers adopt the "mu class + live online interaction" hybrid teaching way, was not affected by isolation and make the teaching process, has been suspended "closed on teaching, not suspended" good results, successfully reduced the outbreak of adverse influence on the teaching [4-5].

These effective education and teaching strategies adopted in emergency situations are bold attempts to implement network teaching in a wide range under emergency conditions, a test of university education information technology, and a practical exercise to promote the reform of teaching methods [6-7]. In this exercise, some problems such as weak foundation of network teaching in some colleges and universities, less investment, lack of online teaching experience of teachers and low emergency response ability were also exposed [8]. Colleges and universities should seize the opportunity to promote education and teaching reform and make new breakthroughs in network education, so as to promote the construction of educational informatization and improve students' ability to apply information technology [9-10].

This paper discusses the application of flipped classroom teaching in higher education majors, analyzes the problems existing in the application process of flipped classroom teaching, and puts forward Suggestions. At the same time, it provides reference for the reform of the teaching mode of higher education majors after the opening of new term. This article uses the questionnaire survey method, takes 450 university students as the survey object. According to the feedback of college students on the teaching effect of the current teaching method, 81% of the students have fully adapted to the current teaching method and basically adapted to the current teaching method.

## 2. Online Education Mode

### 2.1 Flipped Classroom

#### (1) Connotation of flipped classroom

Flipped Classroom is a teaching model that innovates the teaching and internalization of knowledge by means of Internet information technology through the re-planning of teaching sequence, teaching subject and teaching time. It is different from the conventional teaching mode, breaking the boundaries of traditional classroom time and space, highlighting the subjectivity of students, emphasizing the improvement of students' application ability and innovation ability.

#### (2) The characteristics of flipped classroom in college teaching

Teaching content informatization. The proposal and development of flipped classroom represents the relationship between information technology and teaching from "embedded" to "integrated", which is a positive response to the educational and teaching reform in the information age. In college teaching, flipped classroom mainly USES multimedia information processing technology to sort out teaching contents and present them to students on the Internet.

Students learn subjectively. Flipped classroom is an innovation and exploration of course teaching in the era of "Internet +". It has incomparable advantages in satisfying students' personalized learning and improving their comprehensive ability. It overturns the traditional teaching mode in colleges and universities and requires students to be highly involved in the classroom. The consolidation of curriculum content and the establishment of knowledge system in colleges and universities are inseparable from the communication and learning with teachers and classmates.

### 2.2 Problems Existing in Online Flipped Classroom

#### (1) Uneven quality of teaching videos

The difference between flipped classroom and traditional classroom lies in that students independently learn the course content before class, which requires teachers to record videos or find videos from various learning resource platforms. For the first approach, the quality problem lies in the poor quality of the shooting content on the one hand, and the poor quality of the editing production on the other hand. The shooting content includes not only the prepared teaching content, but also the teacher's manner, language, body and other aspects when recording the video.

#### (2) Classroom teaching is difficult to achieve in-depth cooperation and communication

Under the premise that students master the learning content in advance and complete the corresponding pre-class test, the teaching mode of flipped classroom puts the process of knowledge internalization in face-to-face class and completes it through group discussion and teacher guidance. During the epidemic period, teachers lacked the necessary means to ensure that students could complete the pre-class preview according to the requirements through online teaching.

## 3. Survey and Design of Online Education Mode

### 3.1 Experimental Subjects

This survey is based on nine universities of different types in China, including two 985 engineering universities, two 211 engineering universities, four ordinary universities and one private university. The types of institutions surveyed mainly involve engineering, science and liberal arts, and these nine schools meet the characteristics of the survey to a certain extent. A total of 450 students, including 230 male students and 220 female students, from the first year to the fourth year in these nine schools were randomly selected for the experiment.

### 3.2 Experimental Methods

10 questions were designed in this questionnaire. Since it aims to investigate the current situation of teaching

methods in colleges and universities, it was designed from three aspects, namely, the current situation analysis of teachers' organizational teaching, the current situation analysis of teachers' teaching process and the current situation analysis of teachers' teaching effects. First of all, a total of 450 questionnaires were distributed, and 450 were recovered, among which 450 were valid, with an effective rate of 100%. As can be seen from the returned questionnaires, each teacher carefully answered the questions, and the samples are available for reference.

#### 4. Discussion on the Survey Results of Online Education Mode

##### 4.1 Experimental Results and Analysis

College students through investigation of the current teacher's teaching method adaptation degree, the results showed that choosing to completely and basic adapt to students accounted for 81%, 13% of the students don't adapt when, there are 3% of students do not adapt to the current teaching method, shows that the fitness of college students of teaching methods is very high, the result is beyond the author's investigation before the set value, the students in the teachers' teaching methods have taken many not satisfied, also has a lot of the teaching method, you want but adaptation degree so high, also indirectly prove the existence of the current teaching method is reasonable. The results are shown in Table 1 and Figure 1.

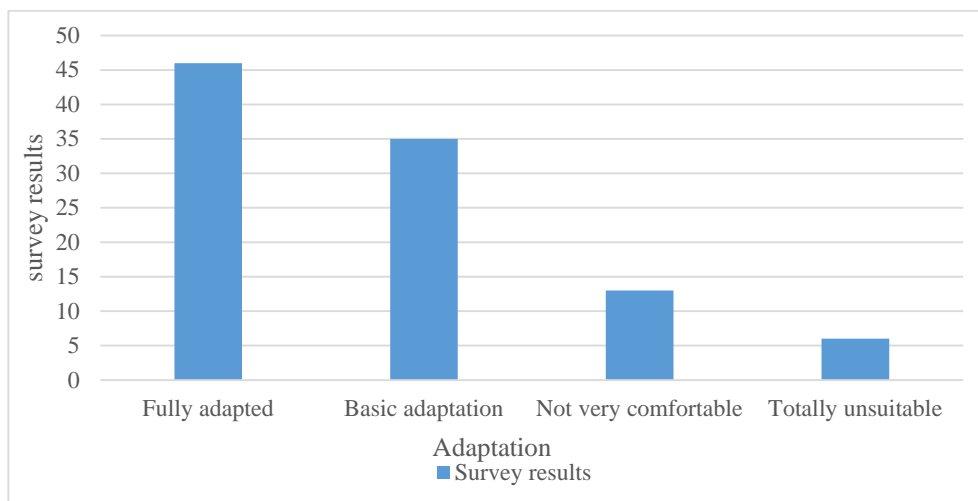


Figure 1. Experimental results

Table 1. Experimental results

| Adaptation           | Survey results |
|----------------------|----------------|
| Fully adapted        | 46             |
| Basic adaptation     | 35             |
| Not very comfortable | 13             |
| Totally unsuitable   | 6              |

##### 4.2 Suggestions for Promoting the Transformation of Higher Education Mode

###### (1) Optimize course content construction

As a way to realize the "golden course", MOOC has a certain gold content in the course setting, reflects a certain difficulty, and has a certain fusion, times, and frontier nature. The guiding ideology of "student-oriented development" must be embodied in every link of teaching design, so as to measure the satisfaction rate of students in the course. The teaching design should be optimized to integrate various teaching activities such as videos, chapter tests, quick answers, adventure exercises, rewards and punishment incentives, etc. around the teaching objectives. The interaction between teachers and students should be strengthened and mixed teaching should be conducted to avoid the "quiet" situation of online teaching. Classroom is a place where teachers and students learn from each other, thinking collision, and emotional exchange. It is impossible to achieve the teaching objective effectively without students' active learning. It is necessary to cultivate the harmonious

classroom culture of individual active learning and cooperative learning among students. Therefore, the course content construction should be optimized and the course design of MOOC should be done well, so as to meet the requirements of "golden course".

#### (2) Improve teachers' ability to use MOOC

Due to the lack of "face-to-face" emotional communication and immediate feedback, online teaching is more demanding on teachers' teaching existence. First of all, teachers need to carry out teaching design. Including teaching objectives, key and difficult points and progress, teaching means and methods, assessment and evaluation. Secondly, teachers need to strengthen the communication between teachers and students. It includes analysis of learning situation, understanding of students' learning difficulties, students' viewpoints, students' learning effect and so on. Finally, teachers need to engage in direct interactive teaching. It includes putting forward problems, analyzing and discussing problems, solving problems, and realizing task-driven hybrid teaching. In addition, there are various online teaching platforms and tools, each of which has its own advantages and characteristics. Online learning is not a "technology show", and the more platforms and tools available, the better. Platforms and tools only provide possible conditions for online teaching. The key lies in whether the teaching needs can be effectively met and students can be effectively supported to learn. Teachers should improve the ability to use MOOC, become familiar with the knowledge content of MOOC courses, change the traditional teaching methods, and pay attention to the design of each part of the course. It is necessary to combine the objective, key and difficult points of information-based teaching with the needs of students. Information technology can be used to measure and analyze students' learning situation, so as to understand students' learning difficulties and differences, so as to choose appropriate teaching methods, teach students according to their aptitude, accumulate teaching experience and improve teaching quality.

#### (3) Teaching should reflect the principle of application as the purpose

Teachers should combine the talent cultivation objectives of various specialties with the needs of the society, apply MOOCs through network teaching, combination of network and classroom teaching and other ways, and constantly innovate the sharing and application mode of on-campus and inter-school courses under the principle of "application-driven, construction-oriented and application-oriented". Optimize the classroom content, and design the teaching content and method according to the training goal of each professional and the actual social demand. Teaching should be based on the actual situation of students, different majors, different grades set different goals and requirements, excavate students' potential, cultivate students' core competitiveness, and promote personal development.

## 5. Conclusion

The COVID-19 epidemic has had a huge impact on the normal teaching of colleges and universities in China. At the same time, this special battle also brings opportunities for the reform of higher education. Colleges and universities should take this opportunity to summarize experience and lessons based on the epidemic, so as to promote the construction and reform of quality education and network education and promote the development of higher education. COVID - 19 outbreak caused huge impact and challenges for the education teaching, online education is applied in colleges and universities in domestic educational circles discuss in recent years, more and more under the background, in the outbreak of effective practice and application of Internet technology with each passing day and the outbreak of winding down, network is applied to the classroom teaching classroom plays an important role in promoting teaching reform. In the application, it should be practiced and summarized constantly according to the actual teaching and students of colleges and universities. To explore the obstacles and advantages of this model in college teaching, summarize and improve it in practice, so as to accelerate the transformation of college teaching and improve the quality of college teaching in China.

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