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Study on a new teaching mode in universities during the period of new coronary pneumonia

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Abstract:
In recent years, education informatization has led to great development of higher education mode. New concepts such as micro-course, mooc and flipped classroom have been widely studied and promoted, all of which belong to the category of network teaching mode. In this paper, we study the important role of the network teaching mode in higher education under the major public health event(i.e. the new coronary pneumonia), and the existing disadvantages.

Keywords: *network teaching mode, micro-course, mooc, flipped classroom, new coronary pneumonia*

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I. Introduction

Influenced by the informationization reform of "network teaching", the teaching organization form of full-time college students has also changed. On the basis of the traditional classroom teaching method, various forms of online teaching begin to become a kind of auxiliary teaching method, and then a new teaching organization form -- "Blended learning" emerges. Blended learning is the combination of different learning methods and teaching elements. It highlights the advantages of face-to-face teaching and network learning modes, reorganizes teaching resources, and implements learning activities to achieve the goal of improving teaching efficiency. At present, the commonly used blended teaching methods based on network teaching include flipped classroom, micro-course, mooc and so on.

Flipped classroom [1] - [3] is a kind of relatively unique teaching organization form on the basis of face-to-face teaching teaching and using a variety of technology tools to implement teaching process reorganization at the same time. To be specific, it is to readjust the teaching organization structure and teaching allocation time inside and outside the classroom, transfer the initiative of learning from teachers to students, and correspondingly cause the change of the order and mode of teaching and learning activities of teachers and students. In this teaching mode, students learn independently before class, and learn about what teachers will teach in class by watching the teaching courseware made in the form of videos and other technologies. At the same time, learning communication and data access are not limited by space, time and media. Based on this, in the limited time in class, students can focus on practical problems, increase the discussion and exchange between teachers and students, and work together to study and solve key and difficult problems, so as to gain a deeper understanding of the teaching content. After class, students plan their learning content, pace and style more autonomously. Teachers flexibly adopt the method of answering questions and cooperating to meet the needs of students and promote their personalized learning so as to achieve the goal of learning through practice.

Moocs(massive open online courses) [4]-[11], are free online open courses provided by EDX founded by Harvard University and Massachusetts institute of technology. Later, Tsinghua university, Shanghai Jiao Tong university, Fudan university and other famous Chinese universities have also joined moocs. Moocs are interest oriented, learning is done on the Internet, no time and space restrictions, the number of students can reach tens of thousands. MOOC is a newly emerging model of online course development, which stems from the old model of releasing resources, learning management systems, and integrating learning management systems with more open network resources. Generally speaking, moocs are large-scale open online courses, which are distributed on the Internet by individuals and organizations with the spirit of sharing and collaboration in order to enhance the dissemination of knowledge.

"Micro-course" [12]-[15] is designed based on the core knowledge points of the subject. It is a structured and miniaturized online teaching courseware with clear teaching links, with short teaching videos as the core. Its basic characteristics are: video, concise and interactive. Micro-course is a new design concept and expression form of teaching courseware with unique functions. It is a design plan guided by blended learning and based on flipped classroom. The courseware designed based on this scheme has the following characteristics: the content is short and concise; the emphasis is prominent; the video is the main form of expression; the application model emphasizes the immediate feedback of learning; it put emphasis on

networking and interactivity in design techniques.

With the development of moocs, micro-courses and flipped classes, how to effectively combine the three to better serve teaching has become a research hotspot. In this paper, we take the network teaching in a university during the period of new coronary pneumonia as an example to study an new network teaching mode based on moocs, micro-courses and flipped classroom.

II. Research on the teaching mode of teachers

In early 2020, the new coronavirus, which is highly infectious and deadly to humans, began to spread. In order to ensure the safety of people's lives and property to the greatest extent, the government has taken measures to suspend work and suspend schools. In light of the current situation, universities in China work out a plan to suspend classes using Moocs, micro-courses, flipped classroom and other network resources and the accumulation of network teaching experience to teach. In this paper, we take 168 teachers and 2300 students of a university as the research objects, and study the teacher's teaching mode and students' feedback on the teaching mode respectively. Survey results show that 162 teachers are valid of 168. After research, the teaching mode is divided into three categories: hybrid (A1), video on demand (A2) and live interaction (A3). The statistical results of teaching mode are shown in figure 1.

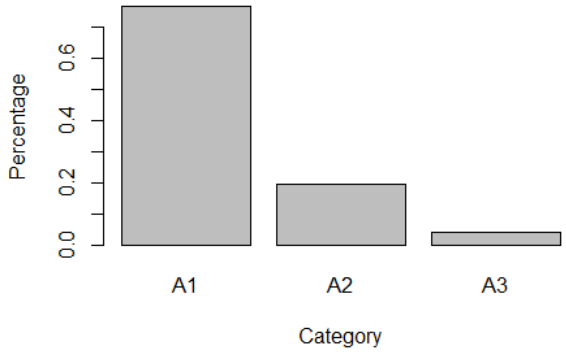

Figure 1: percentage of teaching modes

As can be seen from table 1, the utilization rate of the hybrid teaching mode is the highest, accounting for more than 70%. The reason is that a variety of live network broadcast software and chat software are used in the hybrid teaching mode according to the needs, which has strong flexibility and interaction between teachers and students. The video mode and live interactive form are relatively single.

In the realization process of different teaching modes, rich teaching platforms and software are used, the following 6 types are mainly included: super star learning(B1), mooc for college students (B2), rain classroom (B3), QQ live (B4), nailing live (B5), and WeChat (B6). The statistical results of the utilization rate are shown in figure 2.

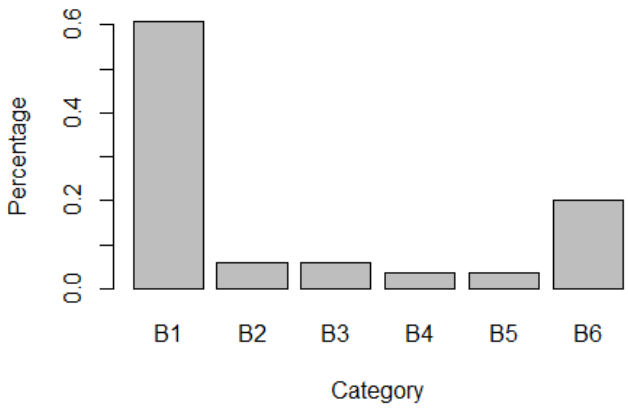

Figure 2: the utilization rate of teaching platform and software

As can be seen from figure 2, super star learning is the most widely used software, accounting for 60.7%. Followed by WeChat, accounting for 20.2%. The reason for the high utilization rate of super star learning is: it is convenient for teachers to upload videos, electronic lesson plans, courseware and other electronic resources; it is facilitate the monitoring of students' learning; teachers can accurately statistics the data, such as the number of students statistics, class assessment, homework quality, and discuss problems with your classmates on the discussion board to solve your doubts. For students, it is convenient to watch videos and related materials. The deficiency lies in that the large number of users make the use process be blocked sometimes. WeChat facilitates simple communication between teachers and students. Rain classroom, nailing live and QQ live are mainly used for live, relatively simple function. Moocs for college students are mainly used for courses with established resources in the early stage, but due to the diversity of specialized courses in colleges and universities, there are certain limitations in the use process.

III. Research on students' learning effect

In this session, we conduct a survey on the satisfaction of 2,300 students with online teaching, Of these 2,300 students, 2168 are valid. During the investigation, the satisfaction was divided into four grades as follows: perfect (C1), good (C2), general (C3) and poor (C4). The survey results are shown in figure 3.

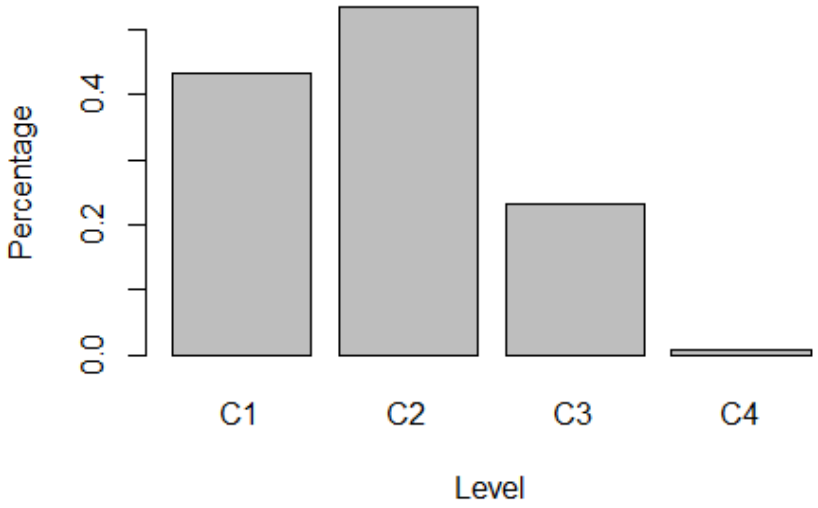

Figure 3: Student satisfaction survey

As can be seen from figure 3, students have a high degree of satisfaction with online teaching, and the proportion of students with good or above evaluation is as high as 96.7%. The reasons for the high evaluation are as follows: teachers' online teaching is well prepared, the course content is rich and interesting, the form is novel, it is convenient of free interaction in class and reviewing after class, and the teaching and learning form is free. The shortcomings include: the live broadcast process was blocked due to the excessive number of users, the picture was sometimes unclear due to the limitation of equipment, and the teacher could not always pay attention to the learning status of each student due to the limitation of space.

IV. Conclusion

In this paper, we study the transformation of the teaching mode in universities under the background of major public health events. The research on teachers and students shows that the network teaching can realize the knowledge exchange in higher education in special period. The network teaching makes teachers' teaching and students' learning more convenient, not limited by time, place and space. This mode can be regarded as a process of reorganizing and constructing teaching and learning by means of various new technological means. In this process, we also found shortcomings, such as the technical support, limitations of network fluency, etc. In the future, we should further strengthen the construction of network teaching resources, to play a greater role in promoting knowledge sharing.

Acknowledgments

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