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Transformation of Teaching Mode During COVID-19 Pandemic

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Abstract: *The Novel Coronavirus Pneumonia (COVID-19) poses severe challenges to normal teaching activities and traditional teaching mode in universities. This paper studies the transformation of teaching mode in the context of epidemic situation, summarizes the new adaptive teaching mode and new combination of teaching forms through the discussion and practice of each teaching mode and online teaching platform. Finally, this paper puts forward expectations for the integration of online and offline teaching after the normalization of epidemic prevention in China, including the transformation of the teaching mode in the future.*

Key words: *COVID-19 epidemic; Teaching Mode; Online Education*

Introduction

The novel coronavirus pneumonia (coronavirus disease 2019, COVID-19) in early 2020 raised severe challenges to the normal teaching and studying activities in schools in China. In order to effectively prevent the spread of the epidemic to schools, the Ministry of Education of China put forward to delay the opening time for the spring semester in colleges and universities in various regions in January 27th, and then put forward strategies in January 29th, requiring schools to use the network platform to actively transform teaching mode.

Literature Review

At present, it has turned to the stage of normalization of epidemic prevention in China. And it has some achievements from the online teaching in colleges and universities during the period of epidemic situation. In the process of "classes suspended but learning continues", the development of big data and network technology provides guarantee for the successful implementation of online teaching and studying, and the modern education technology such as information-based teaching which was accumulated by university teachers also improves the quality of online teaching. This online teaching mode around the world is mainly driven by the epidemic situation. On the one hand, it can rapidly promote college teachers' understanding of online teaching mode, improve the ability of information and modern teaching. And the teachers can use the opportunity of "learning by doing" in online education to effectively improve their ability in information technology practice (Zhang, 2020). On the other hand, there are also some problems in the mode of online teaching under exploring and practicing, such as the difficulty in monitoring the learning state of students, the difficulty in realizing the interaction between teachers and students, the low efficiency of teaching, the lack of standardized assessment system and so on (Li, & et al., 2020).

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This paper studies the novel coronavirus pneumonia's influence on the traditional teaching mode and the transformation of teaching mode under the background of this situation. Through discussing and practicing the advantages and disadvantages of each teaching form, it summarizes the new adaptive teaching modes that ensure the quality and efficiency of online teaching. Then, this paper provides effective strategies for the combination of online and offline teaching after the normalization of epidemic prevention.

The Types and Selection Principles of Online Education Mode

The types and main ways of online education

The types of online education can be divided into two types according to whether teachers and students carry out online education activities synchronously. The synchronous online education is usually the real-time online teaching activities, such as live teaching, video conference connection, real-time social software and collaborative online office software, etc. The asynchronous online education refers to the delayed teaching activities. Generally, the teaching objectives of asynchronous online education are achieved through education resources and management public service platform, excellent courses, smart campus system, online learning applications, course recording and broadcasting.

Among them, during the epidemic period, the online education methods widely used in schools mainly include online courses, online live teaching, TV air class, etc. China's online courses are mainly implemented by MOOC, Tencent Classroom, Rain Classroom, Intelligent Tree and other high-quality educational resources sharing platform. Online live teaching is mainly implied through video conferencing (Tencent meeting, Ding Talk, ZOOM, etc.), course platforms (live broadcast on Tencent Classroom, Rain Classroom and other application), live broadcast platform (Tiktok live broadcast, DOYU Live, YY live, etc.), instant messaging software (QQ group, Wechat group, etc.).

The principles of selection of online education modes

With the rapid development of intelligent mobile phones, network technology and information technology, there are many resources and platforms for online education in the context of the epidemic. In order to transform the teaching mode quickly and ensure the teaching quality, the teachers of colleges and universities actively respond to the guidance of "classes suspended but learning continues" from the Ministry of Education in China and the Departments of Education of each province. All the teachers actively explore the new platform of network teaching, select the best combinations of teaching modes and methods according to the characteristics of the courses.

In the transformation of online teaching mode and method, it needs to comprehensively consider such issues as the nature and characteristics of the course, the level of teachers' information-based teaching technology, the level of students' acceptance, and so on. It needs to take students as the center and the problems as the guide, take "teaching a good course" and improving the quality of teaching as the basic purpose, and follow the following main principles:

A. Simple operation, easy to master

The main goal of online teaching is to accomplish teaching tasks and improve students' learning efficiency. So, all the teachers should take students as the center and try to choose a teaching platform and method with simple interface, completely basic functions that can satisfy the need of the course.

B. Stable and reliable

During this epidemic, it makes each online learning platform face huge pressure especially in network and flow because such a large-scale online education around the country for the first time. And it is difficult to guarantee the continuity of online teaching and studying with the severs which are suitable for ordinary situation. So this problem should be fully considered by the teachers when selecting online teaching platforms.

C. Artificial intelligence and big data technology

On the basis of meeting the two points above, online education can be further improved through choosing platforms and methods with high intelligence and strong data analysis technology in teaching process.

Research on the Transformation of Teaching Mode under the Background of Epidemic Situation

Based on the comparative analysis of the online teaching methods, modes and various platforms above, this paper further studies the transformation of teaching modes from offline to online in the context of epidemic. Through the analysis, this paper drives the high quality combination of online teaching methods and platforms for theoretical courses, and forms a four in one teaching method of "Excellent Online Courses +Online Learning Materials Sharing + Live Class to Simulate Face-to-Face Class + Feedback Update & Iteration at any time". The three-dimensional integrated teaching pattern is also put forward according to the online education under the background of this epidemic.

The four in one teaching method

A. Excellent Online Courses

From the perspective of learning, the courses on MOOC of universities in China and other high-quality courses resources sharing platforms in Chinese universities are formed through the accumulation of a large number of teachers' years of teaching experience. The design of MOOC and other forms of online courses are vivid and attractive. Another advantage of these courses is that students can learn anywhere at any time, which can largely solve the problems caused by different levels of students' acceptance in traditional offline class.

From the perspective of teaching, each platform integrates big data, artificial intelligence and other

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technologies. Through the platform, teachers can timely check the learning situation of students, track their learning progress, find out the weaknesses of students' learning, and adjust or improve the teaching methods.

B. Online Learning Materials Sharing

Through online collaborative office software or platform, such as Tencent Document with collaborative editing function, WPS Document, Shimo Document, Evernote, and QQ group document with resource sharing function, wechat group, Tencent conference online document, intelligent campus OA platform, etc. It can effectively solve the problem that students cannot get textbooks during the COVID-19 epidemic. Teachers can share classic works and materials related to the curriculum system through the channels above.

Teachers can also do the pre class preparation work better than offline education through online teaching platforms and applications. They can upload resources such as preview courseware, recording videos, and test documents to the platform in advance. After the class, teachers can timely monitor students' completion of learning tasks.

C. Live Class to Simulate Face-to-Face Class

Although the excellent online courses and video courses can be reviewed and studied many times after class, the most valuable advantage of traditional offline education lies in the interaction between teachers and students or among students. Teachers can get the feedback from students in time during the teaching process, and carry out more targeted explanations. Students can discuss, even make brainstorm, which can make unexpected effects. Therefore, in order to make the complementary advantages of various online teaching methods, teachers should timely carry out live courses according to students' learning progress. Teachers and students can simulate face-to-face courses to take learning discussions, and can also use dialog boxes to record and share the key points and difficult points in discussions at any time.

D. Feedback Update & Iteration at any time

In the live course, students can ask questions at any time and discuss with each other or with teachers, so as to achieve the purpose of interaction and ensure the quality and effect of teaching. More importantly, online teaching can enable some students to effectively overcome the nervous psychology in the traditional classroom, and actively participate in learning activities. In addition, every week or after the completion of each teaching task, teachers should timely follow up the learning situation with investigation, set up problems, vote in the class group, timely find out students' difficulty in learning or adapting of current teaching methods. With keeping abreast of new developments, teachers can update and iterate the teaching plan, instructional design and teaching methods.

The three-dimensional integrated teaching pattern

Although the COVID-19 epidemic isolated teachers and students from the campus, it promoted the improvement of teaching and learning mode to a large extent. The traditional teaching mode is not conducive to the development of teachers and students. Through the joint exploration of teachers and students in this

online education during the epidemic, it further improve the students' professional identity and students' ability to do creative research.

The particularity of the teaching mode in this COVID-19 epidemic situation is that it is only limited to online education, and it is temporarily unable to carry out online and offline hybrid education. So it is very important to actively explore the transformation of the teaching mode. This paper summarizes the three-dimensional integrated teaching mode for this epidemic situation.

A. Four Main Points

There are four main points in the new online teaching mode during this COVID-19 epidemic, which are taking students as the main body, taking teachers as the leading role, taking students' learning skill as the main line and taking innovative thinking training as the theme.

a. Taking students as the main body

Diversified teaching mode is the change from the traditional teacher-centeredknowledge-feeding pattern to the new student-centered teaching mode. The network teaching system carried out a modern teaching instruction that takes students instead of teachers as center. The eighth curriculum reform in China emphasizes the basic idea of taking students as the main body, cultivating and developing students' subjectivity. In the vast experimental area of new curriculum, many teachers have made beneficial attempts in this respect. It can fully reflect the main role of students in the classroom, let students actively participate in all aspects of classroom teaching, cultivate professional identity and interest in learning, encourage students to analyze, consult, think, consult, cooperate and discuss by themselves after class.

b. Taking teachers as the leading role

Classroom interaction is a teaching process that the teacher acts as the dominant role to inspire and guide the students who act as the principal role to learn. Sticking to the concepts of opening-up and innovation, leading by teachers, taking students as subjects is the way to improve teaching quality. Establishment teaching community take the teacher as the leadership, the teacher and the student altogether for the main body. Teaching students how to learn, referring to the combination of teaching and learning, shows the up-to-date teaching relation between teachers and students, enforcing students' self-organizing competence and self-cognitive power, and fully helping to achieve the teaching process. The environment involves a student-centered learning platform, a teaching platform aiming to reform teaching methods and improve teaching quality, and a teaching management platform based on constructing informationalized system of teaching management and improving management quality and service efficiency.

c. Taking students' learning skill as the main line

Teaching are increasingly seeking the way that is the study process and methods for students to get knowledge. The whole world is actively exploring the scientific theory, ways and methods about teaching students to learn. Therefore, teachers should explore the corresponding teaching strategy for students based

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on the concept of teaching. "Teaching students how to learn" is a strategy of quality education. To cultivate talents who suit to the development of society must teach students "learning to learn". Modern educational theory thinks that teachers and students are the two basic elements in teaching activities. Therefore, teachers should have a knowledge of the theory of independence study, improve our teaching methods, cultivate the students 'autonomous learning ability and make the students learn how to study.

d. Taking innovative thinking training as the theme

Make the students' independent inquiry as the main task in and out of the online class. Teachers change from classroom teaching to teaching design and organization, teaching situation setting, monitoring and evaluating of students' activities. In online education during the COVID-19 epidemic, students' creativity is developed, students' innovative thinking is cultivated and students' innovative ability is improved.

B. Six Segments

There are six segments in the new online teaching mode during this COVID-19 epidemic, which are Objective Targeted Guidance, Independent Research, Teacher's Explanation, Feedback and Discussion, Induction and Expansion, Evaluation of Online Teaching Effect. Before the start of online courses, set clear and measurable teaching objectives to make online teaching and learning targeted. Use quality courses to cultivate students' self-study ability and grasp knowledge points in advance. Analyze key points and difficult points in view of problems encountered in students' self-study, combined with task driven, case teaching and other methods, conduct targeted explanation and analysis during live teaching. With the advantages of online education platforms and applications, teachers and students can exchange what they have learned, understood and gained. Because network teaching lays a solid foundation for students, teachers can better combine professional knowledge and practical experience. Through multi platform functions such as Tencent conference, QQ group voting, also with the students' self-test and feedback of teaching effect, teachers can monitor teaching quality more efficiently.

a. Objective Targeted Guidance

The teachers should activate the students' independent consciousness, put them into independent status, help them acquire learning methods. The learning plan guiding method, experimental teaching method, and networks teaching method could be applied to improve the students' learning capacity.

b. Independent Research

In the online education class, the teachers' role of knowledge anthority is transformed to the partner, cooperator, organizer and promoter of students' subject research. Teachers should emphasize that students are principal part in their independent research study.

c. Teacher's Explanation

Online learning resources are the main learning content of web-based learners, and can take the place of

print-based textbooks used by teachers in traditional classrooms.

Traditionally a teaching pattern is used offline class as "teacher shows the way as an example, students follow the example and do the activity". Online education during the epidemic can take advantage of this teaching pattern. The teacher explained to accurate system, careful guidance, timely summary.

d. Feedback and Discussion

Forming the teaching mode of "Tranforming knowledge, imitating and modifying, doing exercises and feedback, deepening discussion" can effectively improve the students' abilities of self-learning during the epidemic. The establishment of teaching information interaction system based on wireless network provides a multi-agent interactive and efficient digital platform for real-time feedback in the classroom, which effectively improves the shortcomings of the traditional teaching students' feedback. By analyzing students' feedback, the teachers can well know how to transform the teaching mode in online edution and adjust their teaching plans in order to quickly improve their teaching.

e. Induction and Expansion

Based on the induction of online teaching process, the teachers can sums up the basic ways to cultivate students' autonomous learning ability and improve the quality of online teaching, in order to put forward a series of teaching methods and teaching methods to improve the teaching level and teaching effect. Because online education has laid a solid foundation for students, teachers can better combine professional knowledge and practical experience to further summarize and sublimate the curriculum.

f. Evaluation of Online Teaching Effect

Teaching effect evaluation is an important link to ensure the smooth implementation of online teaching and improve teaching effect. Through online teaching platforms, on the one hand, students can test themselves in time. On the other hand, compared with the traditional classroom, online teaching can make better use of network technology for teaching effect feedback, and teachers can monitor teaching quality more efficiently.

C. Four Kinds of Interaction

There are four kinds of interaction in the new online teaching mode during the COVID-19 epidemic, which are the interaction between teacher and student, the interaction between student and student, the interaction between human and computer and the interaction of resources.

Conclusion and Further Research

In view of the transformation of teaching mode under the background of COVID-19 epidemic situation, this paper explores the types and selection principles of online education modes and platforms. This paper also studies the effective online teaching form and mode during this epidemic with the purpose of making students

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as the center, improving quality and efficiency to complete the course objectives, and ensuring teaching efficiency.

The epidemic situation has posed severe challenges to the current education mode in colleges and universities, but at the same time, it has brought new opportunities, which has greatly promoted the transformation and reform of teaching management mode, teachers' teaching mode, students' learning mode, assessment and evaluation mode in colleges and universities.

The most important to consider of the teaching mode in the future is the effective integration of online teaching and offline teaching after the normal opening of colleges and universities and the normalization of epidemic prevention. Another problem which need to further explore is the transformation of the online education mode.

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