The Application of Internet Teaching in Colleges and Universities during the Epidemic

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ABSTRACT

The outbreak of the new crown pneumonia epidemic has changed the way students and teachers are taught. For epidemic prevention and control, major schools are using cyberspace to conduct online classes. This paper summarizes some suggestions in terms of teaching mechanism, teaching capacity, and teaching format of online classes by comparing the application and summary of different subjects in online classes in universities. It can be concluded that online classes are still not a complete substitute for offline teaching in subjects that require laboratory classes and outdoor practice. There is still a need to combine classroom teaching with online teaching and to continuously improve the online class platform mechanism.

Keywords: *High School; Epidemic; Online Classes; Internet Teaching*

1. INTRODUCTION

The national public health emergencies of early 2020 have seriously affected the normal teaching order of universities in China. Although the epidemic has been effectively controlled, it is still important to build an alternate online teaching system. In this paper, we compare the different teaching modes of different disciplines in universities during the epidemic and discuss how to improve the quality of online teaching to the greatest extent.[1] This paper starts with the current situation of online teaching in higher education and combines it with the actual situation of online teaching during the epidemic.

2. COMPARISON OF THE APPLICATION OF ONLINE CLASSES IN DIFFERENT DISCIPLINES

2.1 Analysis of the normal teaching mode of tool and software courses

Tools and software courses are "theory + operation" courses, which have the characteristics of both general theory teaching mode and strong operational characteristics. As a result, teaching in the midst of an epidemic is more difficult. The types of tools and software we are familiar with are Word, Excel, Power Point, Visio and ERP (accounting sandbox training), CAD for mechanical professions, OrCAD for electronic professions, etc. [2]

Computer teaching of tools and software usually adopts a large screen, in which the teacher uses the large screen to talk and operate while the students use their own computers to listen and operate. This kind of teaching focuses on "synchronous teaching".However, the following problems are easy to occur in teaching. First, because students' computer skills and operation ability vary, once they "lose a step" in "synchronous teaching", they cannot keep up with the next step. Considering the above problems, if the lecture speed is too slow, students with higher computer operation level will feel that they have too much "time left". There is too much "time left".

The modularized teaching curriculum is a combination of teaching objectives, the teaching content into a number of different granularity of knowledge modules, each knowledge module of the internal encapsulation of the relatively complete knowledge content. This constitutes a dynamic and configurable CAD/CAM technology curriculum, which can be flexibly assembled like building blocks according to different projects and tasks to meet students' personalized and diversified learning needs, which not only fully reflects the teaching concept of "student-centered and output-oriented", but is also suitable for the current networked and open online teaching. This not only fully embodies the teaching concept of "student-centered and

output-oriented", but also is suitable for the current networked and open online teaching environment.

The collaborative online and offline hybrid teaching is the introduction of cooperative group learning in the teaching organization, guiding students to discuss with each other, changing the individual behavior of learning to group behavior, making full use of the classroom environment to overcome the common problem of modern college students who are not good at thinking and expressing themselves, and improving students' participation in class. The task-driven teaching method and the independent exploration learning method will greatly increase the students' participation, improve the efficiency of knowledge utilization, and let students explore independently.

Building systematic teaching resources is a prerequisite for students' independent learning. First of all, the content of micro-lessons of CAD/CAM technology course should be improved, and the production of micro-lessons should be in line with the characteristics of online learning, avoiding the phenomenon of preaching from the book, and giving some key information through "short and precise" explanation, so that students can learn with questions. Due to the limitations of energy and ability, digital resources cannot be developed by teachers. We should make full use of the National Basic Education Resources Network, open curriculum resources on the Internet and the resources accumulated during the home learning period, and appropriately introduce the market mechanism to strengthen the collaboration inside and outside the school to form a set of high-quality digital education resources.[3]

2.2 Application to experimental disciplines

2.2.1 Online Live Teaching

According to the instruction of the Ministry of Education of the People's Republic of China to stop teaching and learning, online teaching in the form of auxiliary teaching completely replaced practical teaching, which was not only a serious challenge for the laboratory teaching center but also an opportunity to develop a new education model. During the epidemic, the online teaching work of university laboratory courses can be divided into 3 parts: First, through Nails App, teachers can teach molecular biology courses in an online way; Second, using the existing web-based virtual laboratory as the center, students are guided to perform virtual molecular biology experiments online; Third, teachers and students can use software such as Tencent Conference to discuss problems related to molecular biology experiments after class and give feedback on problems in the learning process. The above points and advantages and disadvantages of online teaching are explained in detail. After the online teaching is finished, the paraprofessionals can export the data of the number

of listeners and the length of the live broadcast from the live broadcast software, and use it as a basis for students to sign in to the class. This ensures the attendance rate and also paves the way for guaranteeing the teaching effect.

2.2.2Virtual experiment section

The live online teaching of laboratory classes is only a part of the laboratory teaching, while the laboratory operation is the most important part of the laboratory class. However, during the epidemic, students could not go back to school to do the actual operation in the laboratory.In this reality, the virtual laboratory in the laboratory center plays an important teaching role. Through the virtual lab, students can perform several classical molecular biology experiments online, such as genomic DNA extraction, polymerase chain reaction (PCR), and so on. This kind of experimental operation in the virtual laboratory, although not as hands-on as the experimental equipment, can basically make students have a certain sensory understanding of the experimental operation, so as to ensure that the experimental teaching center can complete the experimental teaching tasks more successfully.[4]

2.3Analysis of teaching models in the liberal arts

The fully online teaching model brought about by the New Crown Pneumonia epidemic has also changed and driven the transformation of legal education in several dimensions. First, it has promoted the further popularization of online education. After the emergence of emerging technologies such as network information technology, law schools have actively integrated legal education with science and technology, and introduced classroom teaching modes such as online live teaching, catechism, and flipped classroom. Secondly, we promote the diversification of online education forms and improve the richness, accessibility and novelty of online education resources. The second is to promote the diversification of online education formats and improve the richness, accessibility and novelty of online education resources. Third, to promote the further publicization of online education. According to the survey, all the students surveyed believe that the new pneumonia epidemic has contributed to the richness and diversity of online education resources in the legal theory course. Various online academic lectures such as "cloud lectures" in major universities in China have become popular, and many famous universities in China and abroad have become more popular as well. The dissemination and sharing of knowledge are more convenient and faster than before. In addition to law lectures, students can also get access to academic lectures in other disciplines such as history, philosophy and economics through various ways such as recommendation by teachers, resource sharing by

classmates and online media. Even after the resumption of offline lectures, such online lectures are still vibrant, reducing the cost in terms of time and effort for students to access various academic perspectives, increasing the accessibility of learning resources, and helping students develop a broader interdisciplinary academic perspective.

3. CHALLENGES OF INTERNET TEACHING IN HIGHER EDUCATION

3.1 Challenges in classroom teaching

The difficulties that teachers face in teaching online classes include how to engage students, maintain order in the classroom, organize class discussions and online communication, and provide feedback and follow-up discussions. As noted in the Gonzaga University School of Law study released by Associate Professor Agnieszka McPeak on August 6, 2020, the majority of teachers provide instruction that is primarily "emergency distance learning" rather than "online education".[5]The survey found that 50% of students believe that the classroom atmosphere of online teaching is not as good as offline, and the quality of education needs to be improved. The new pneumonia epidemic is a desperate move, and the classroom atmosphere and teaching effect are always inferior to offline teaching, which is more conducive to discussion and a strong learning atmosphere to cultivate students' critical thinking.

3.2Challenges in independent learning after school

In terms of after-school learning, the impact is mainly in the following aspects. First, students' ability to study independently after class needs to be improved, and good online study habits have yet to be developed. A three-semester survey conducted by Margaret Reznor of the Indiana University McKinney School of Law on the online courses she teaches shows that students expect timely assessment modules to exist in online courses and that the modules should be kept open so that students can participate in the courses in a timely manner and be motivated to form good study habits.

Secondly, many practical courses have been affected by the epidemic and are difficult to conduct. The survey results show that eight respondents reported that internship opportunities have become less available. For example, many courts are limiting the number of spectators or holding court directly online, so students have fewer opportunities to observe events on site. For example, law firms and courts are controlling the number of student interns, so students have fewer internship opportunities. At the height of the epidemic, students were not able to intern in person at law firms, courts, etc.

Third is the assessment method. In the past, offline exams were usually closed-book exams, with one or two

teachers supervising the exams. For online courses, they are currently open-book exams. In some courses, open-book exams are not conducive to students' mastery of basic knowledge. In the interview test, it is common for colleges and universities to avoid cheating by adding two cameras in front and behind the students themselves. However, this method requires students and teachers to repeatedly confirm the placement of the cameras, which wastes a lot of time in the process. Therefore, there is still a need to explore how to effectively avoid cheating in examinations as well as to effectively save time.[6]

4. RECOMMENDATION

In response to the inevitable problems of online classes under the epidemic this study recommends that schools take appropriate corrective measures.

4.1 Sound online class management mechanism to achieve the mechanism of online class guarantee

During the epidemic, three universities issued more than 10 documents before the start of the school year, such as "Arrangements for Online Classes in the New Semester". However, the "emergency" and "temporary" characteristics of the regulations are outstanding. Based on the problems that occurred during the epidemic, we should strengthen the top-level design and increase the documents related to the management of online courses in emergency situations based on the division of functions of university academic affairs departments.[7]

4.2 Multi-measures to categorize and implement blended teaching and learning capabilities.

The proficiency of teachers in using various online teaching platforms and teaching tools is a key factor in the effectiveness of blended teaching. Therefore, universities should continuously increase the training guidance for teachers to continuously improve their ability to carry out hybrid teaching. In the process of teacher training, we should pay attention to the following: First, the wide range of training objects, including not only the front-line teachers who directly carry out teaching activities, but also the teaching managers; including not only the young and middle-aged teachers who have certain technical foundation and teaching experience, but also the old teachers who are used to offline teaching and the young teachers who are new to the job. For teachers who have difficulties in online teaching, they can arrange for relevant graduate students to take up teaching assistant positions to assist the main teacher in carrying out hybrid teaching support work. For young teachers who have less experience in online teaching, we can arrange for them to teach, so as to give full play to the role of "passing on and helping" and

continuously improve the teaching ability of young teachers.[8]

4.3 Focus on teaching format innovation

In order to improve the efficiency of online course learning for college students, the teaching form needs to be innovative, to really give full play to the advantages of the online course platform. To make the online course better promote the development of China's university education, it needs to update the online course teaching resources in time, and to enhance the interest of the online course. However, since the online class mode is different from the traditional lecture mode in many ways, we still need to continue to explore and develop through practice.

4.4 Efforts to explore effective means of regulating online classes

In order to strengthen the supervision of teaching quality of online courses, efforts must be made to explore effective means of supervision of online courses. So as to guarantee the evaluation and timely feedback on the learning effect. To update the educational philosophy, the teaching objectives should be reformed, and the training of teachers in new online teaching technologies should be strengthened. By expanding teachers' knowledge structure, guiding them to explore teaching implementation methods that integrate "Internet technology" and encouraging innovations in information-based teaching models, we promote the general improvement of teachers' online teaching skills.

5. CONCLUSION

With the development and influence of the epidemic, the online class mode, although very different from the traditional mode, has promoted the development of online teaching extremely fast. The transformation and development of teaching mode have attracted more and more attention. This paper analyzes the advantages and shortcomings from the comparison of the current situation of online classes in different disciplines in higher education, and discusses the corresponding corrective measures. Using the experience of online teaching during the epidemic, combining the traditional mode with online teaching and complementing each other, we will surely achieve better teaching results and make efforts for education reform.

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