

Research on the Emergency Education Model of Liberal Arts in Universities and Its Quality Assurance

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ABSTRACT

At the beginning of 2020, COVID-19 swept across the globe. Various regions have sealed off their cities to fight against the epidemic, and all works of life have changed their models to actively respond to the epidemic. The education industry actively implements the model of "stopping classes without stopping learning" to carry out online education. Under the emergency conditions of epidemic situation, how to deal with the transformation of liberal arts teaching in universities and the reasonable evaluation and guarantee of the quality of education are urgently needed to be solved. This paper discusses the new model of liberal arts emergency education in colleges and universities, statistically evaluates the educational quality of various exploration models, and provides a reference for college liberal arts emergency education.

Keywords: emergency education, colleges and universities, liberal arts, education model, education quality

I. INTRODUCTION

Due to the popularization and development of Internet technology, online education has appeared for some time. Unlike offline classes and face-to-face lectures and communication by teachers, online education is in a supplementary position to offline education in the stage of higher education [1-5]. The COVID-19 in early 2020 has pushed online education to everyone. For the liberal arts majors in colleges and universities, breaking the traditional offline education model and constructing an online information course teaching model have become an important guarantee for development [6-8].

The theoretical professional knowledge of liberal arts courses in colleges and universities is relatively boring. Unlike science knowledge points, which can be calculated, long-term learning will weaken students' interest in learning. In the offline education mode, liberal arts teachers in colleges and universities mostly use multimedia for teaching, PPT for demonstration, and various examples for proof. Most teachers' application of multimedia technology stays in the application of PPT, and there is almost nothing involved in other digital applications. The outbreak of this epidemic has caused online education to explode. Teachers need to adopt a variety of online education platforms and functions to achieve a comprehensive education model of digital transformation [6-8].

Traditional teachers are transforming to digital teachers, and the role of teachers is changing. Teachers have changed from knowledge possessors and initiators, course implementers and knowledge authorities to learning activity organizers, learning guides and course developers. Although many colleges and universities are flipping classrooms, they are still different from online education. Teachers of online education need to constantly update their educational concepts, achieve professional development of teachers, be able to integrate new technologies, new concepts and new methods, carry out innovative design of courses, continually improve the trailblazing of educational efficiency and be innovation-type teachers.

The liberal arts teaching in colleges is divided into theoretical teaching and practical teaching. In the theory class, teachers can broadcast live, the PPT of the classroom content can be displayed, and the teachers will explain. In the practical class, teachers can present, display the PPT and use a small video to play steps. And teachers will demonstrate and operate the steps. Then they can select students for screen sharing exercises. The benefits of class are obvious: teachers and students can do it anytime and anywhere as long as there is an Internet; everyone can see the screen, communicate with teachers at close range, and have various interactions. The shortcomings of this model are also particularly prominent: the quality of the course is difficult to grasp, the degree of classroom content absorption is difficult to judge, there is no sense of class ritual, and various postures for class may exist. Teachers adopt various means to promote the progress

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of the course. During the class, the cameras of teachers and students are all turned on, which is convenient for asking questions and interacting with students at any time. However, there is still no way to guarantee the quality of the class. Then, what kind of education model should the college liberal arts education adopt to respond actively under the state of emergency education? This question can be explored from three levels: pre-class preparation, online class and after-class management.

II. PRE-CLASS PREPARATION

Under the major premise of "stopping classes without stopping learning", teachers should analyze the academic situation before organizing teaching activities. They can master the basic information of students through the course platform of their unit. Then, they are able to formulate different programs according to the different types of students, and formulate different programs according to the differences in the nature of the courses. Teachers combine the characteristics of online live classes to design course teaching and complete the preparation of various course materials. They can create course teaching activities, set live broadcast courses, record course content, and complete uploading of courseware, homework, tests and other files. Teachers link the live broadcast address of the course through the course platform to make pre-class announcements, publish the class address through various groups of the class and methods, and make the announcement of the course address in advance.

III. ONLINE CLASS

Online class has live broadcast, recorded broadcast, and live broadcast and recorded broadcast mixed forms; teachers choose different online classroom forms according to the differences in the nature of college liberal arts courses.

A. Live broadcast

Most online teaching platforms provide a live webcast function, and teachers can conduct online teaching through live webcast. Teachers can perform screen sharing and lesson recording while conducting live broadcast. Teachers can interact with students in the class in a variety of ways, including digital roll call, rush answer, and random test interaction.

B. Recorded broadcast

For the cumbersome teaching design of live broadcast content, teachers can play the course content in the form of recorded broadcast. Teachers record the content of the course in advance and upload it to the course platform to allow students to preview in advance. The live broadcast class mainly solves the

difficult problems encountered by students and fully mobilizes students' initiative in learning.

C. Live broadcast plus recorded broadcast

For part of the course content that is not suitable for online live broadcast, teachers can adopt a mixed teaching method of live broadcast and recorded broadcast, and answer students' questions at any time.

IV. AFTER-SCHOOL MANAGEMENT

After the lecture is over, teachers should conduct a question-and-answer discussion, further interact, review student assignments in a timely manner, supervise and urge students to complete tasks such as homework assignments in time, and provide timely feedback on student assignments, after-school assignments and so on. Teachers can view the student's learning trajectory on the live broadcast platform or the course platform, analyze the student's learning trajectory, analyze the teaching content and teaching data and conduct teaching evaluation and teaching reflection, and the purpose is to lay a good foundation for further online class.

How to guarantee the teaching quality of online education? Every link from teacher to student needs to be considered.

V. TEACHER'S ONLINE TEACHING DESIGN

The design of classroom instruction by teachers, especially the quality of online instruction design, is directly related to the teaching effect. The difference from the ordinary offline field education model determines that online education needs a new class design.

A. Pre-class: class design

Based on the course objectives, teachers conduct personal knowledge input and resource integration, determine classroom objectives, collect various related cases, conduct pre-analysis of classroom content structure, preset class content, and design class activities. Teachers upload various learning materials to the learning platform in advance, and clearly inform students of the main content and key content of the next class.

Due to the high requirements for self-management of students in online class, students are in a free state, and do not take classes seriously. In order to stimulate students' self-management and improve students' learning initiative, teachers can use some methods in classroom design. For example, teachers can limit class activity time and control the activity time within a few minutes. If students can't complete on time, they can't participate in the next class activity; teachers can

improve assignment requirements. The time for submitting homework posted by teachers on the course platform is limited. If the time limit is missed, the homework can't be submitted on time, which affects students' final grade; the quality of students' work must be guaranteed, and students who are below standard must re-do the homework; teachers can limit the opening hours of resources. The resources published by teachers on the class platform have a time limit. If students miss the time, they can't view these resources. So, students must view them within the specified time; students work in groups, the assignments are all group assignments, and the team members cooperate and supervise; teachers can strengthen the process management in the class, call the roll at any time, and randomly select people and numbers during the course.

The teaching design of teachers before class is related to the effect of the whole class. Before the class, teachers explain class goals and inform students of the key content of the class, causing students to think about class content; during the class, teachers explain and students master the content; after class, students give feedback and teachers answer questions and summarize. The entire course design must be guaranteed.

B. The period in class

Teachers' classroom design should be clear in primary and secondary and highlight the key points; the teaching activities designed in the class should be

interspersed in the class narrative; the class activities should serve class content; the class activities can be designed in a variety of ways to attract students' attention and connect the course content.

Teachers should pay attention to the interaction with students at all times. After teaching a knowledge point, teachers should interact with students to master their dynamics.

VI. CLASS INTERACTIVE DESIGN

In traditional offline teaching, students and teachers face to face, students can immediately feedback the content taught by the teacher, and teachers can adjust the content of the class in time. Relatively speaking, offline class interaction is more convenient to carry out. For online teaching, teachers and students are in different spaces. In order to attract students, class interaction should be designed more rationally.

By analyzing 6.9 million video viewing records, the famous American MOOC platform edX has studied what kind of videos are more attractive. One of the conclusions shows that: shorter videos are more attractive. On edX, the average time for users to watch micro-course doesn't exceed 6 minutes; the length of 6-9 minutes videos is an inflection point; the average time to watch a video longer than 12 minutes is only 3 minutes. One of the recommendations from the study is that: teachers should divide the video into fragments, preferably less than 6 minutes [10-11] ("Fig. 1").

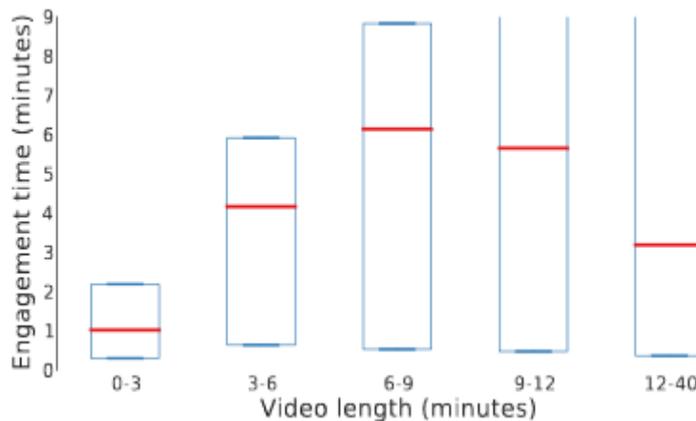


Fig. 1. Correspondence between video duration and viewing time [11].

Behind this phenomenon is the basic law of learners' attention. The change in the attention of students with the passage of time is called the attention curve, as shown in "Fig. 2", where the effective concentration time of attention can only be maintained at the beginning of 10-15 minutes [10].

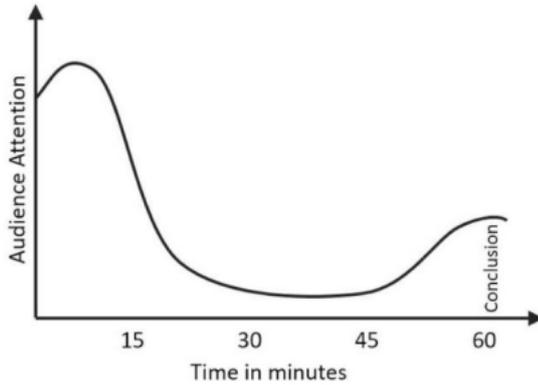


Fig. 2. Curve of attention [10].

According to the change of the student's attention curve [10],[12], combined with the principle of online class interaction, teachers need to design appropriate class interaction opportunities in live teaching during class design. Teachers divide the content to be taught in the class according to the knowledge points, insert class activities between knowledge points, and interact with students.

Teachers can intuitively understand the effect of their explanations on the key and difficult points of the course and the degree of students' understanding through the reactions and changes of students in class activities. Teachers can make full use of the interactive functions of the online teaching platform when conducting class interactions. The online interactive functions set in each online platform are similar. The author uses the ZOOM platform for live classes and takes the ZOOM platform as an example. The ZOOM system is equipped with a special chat area where students can interact directly with the teacher during the class. Selection and answering can be done directly in the chat area, and the chat area is set to save files, and finally the chat records can be saved in the form of class materials. The ZOOM system also has a note function for students. Teachers can ask students which knowledge points are not understood, and can make various annotations on the explained PPT or other teaching materials. Students can mark their difficulties and doubts in the form of text, marks, and drawings. Teachers watch and answer immediately and students interact with teachers to effectively improve class participation. ZOOM has set up a group discussion function, which can be divided into group activities. Students from different groups can enter their corresponding conference rooms separately. Each group doesn't interfere with each other, and at the same time, no sound will be heard in the main meeting-place. After the discussion of each group, they will return to the main meeting-place. Teachers can also randomly choose to enter any meeting room to listen to or participate in the discussion.

Teachers can use teaching interactive tools to promote the interaction during class interaction. The interactive tool is easy to use and easy to produce positive effects, making the teacher-student interaction effect obvious. The online platform provides multiple interactive tools that teachers can choose from. For example, lottery draws and quick answers are the most direct methods. In addition, teachers can also use other real-time feedback tools in addition to the live broadcast platform to interact with students in various ways. At present, there are many tools for real-time feedback on the Internet. Teachers need to choose the most suitable for themselves.

VII. EVALUATION OF TEACHING EFFECT

A. Teachers' subject evaluation

Evaluation is a very important link in the teaching and learning process [9], which is of great significance for teachers to check the teaching effect, master students' learning progress, and ensure the quality of students' learning.

Teachers have a psychological expectation on the learning effect of students according to the content of the course. Students are expected to master the knowledge taught by the teacher, improve their own knowledge, and be able to apply what teachers have taught and what they have learned. In the class, teachers mobilize all factors for teaching and interaction so as to improve students' self-learning ability and stimulate their learning potential. After-school assignments, tasks or various tests are carried out to allow students to master the content of the class and guide students to further study. Teachers' evaluation of the teaching effect must be closely integrated with the objectives of the course content. It is best to refine the evaluation criteria to reflect students' progress and understanding of learning knowledge.

Teachers should rationally design a quantitative evaluation quantification table based on teaching knowledge points, and measure the standards for students to master knowledge points according to the evaluation quantification table. There are two common methods for teachers' subject evaluation:

1) *Quantitative score quantification method*: When the teacher is evaluating the effect, the quantitative score quantification method is a commonly used tool, that is, the specific score usually said. Teachers generally divide the score into several parts and test the students, and the scores of each part are weighted, which will be the total score. This method is simple and easy to operate, and has strong operability. But this method also has shortcomings such as incomplete assessment, which may not fully reflect the students'

ability to use the knowledge they have learned to solve practical problems.

2) *Qualitative and flexible subjective evaluation method*: Some of the course knowledge points can be refined to facilitate the use of quantitative score quantification method for evaluation. Some knowledge points focus on the flexible use of the knowledge theory taught to solve practical problems, or for the analysis process of specific cases, the quantitative score quantification method remains unchanged; if more subjective evaluation is required during the assessment process, qualitative and flexible subjective evaluation method with excellent, great, good and bad grades should be adopted for evaluation.

For different stages of college students' learning, different evaluation methods should be used to evaluate the effect. In the learning process of the junior primary course, teachers can refine knowledge points and adopt a simple quantitative assessment form; in the stage of improving the comprehensive ability during the senior grades, teachers should adopt a qualitative subjective evaluation method to comprehensively evaluate the teaching effect. The effect value of the evaluation is relative and can reflect the comprehensive effect of teaching.

B. Students' mutual evaluation

Teachers can comprehensively evaluate the class from the aspects of knowledge, ability and quality, break down the course objectives into each class, and evaluate the overall effectiveness of the course by measuring the effectiveness of each class. When teachers evaluate the teaching effect, on the basis of the teachers' subject evaluation, it can be integrated into the mutual evaluation among the students in the whole chain of teaching. Teachers design teaching goals into teaching activities, record them online and in the backstage, and after a period of time, teachers release them objectively and fairly, and get timely feedback. In the class, teachers are guided by questions when designing courses, requiring students to participate throughout the process, helping students improve their ability, allowing students to answer themselves and evaluate each other.

During the course evaluation, the formative evaluation and feedback between the students are as follows: student teams are divided into small group teams; teachers should understand the situation of students, find problems in teaching in time and pay attention to the feedback of students. When the student team is performing tasks, the teacher should observe in time and discover the problem. The time for answering questions can be set every week, so that teachers can find problems in time and master the progress of each group. For groups that have no questions, teachers can observe them privately. By the middle of the semester,

the student team forms an interim report according to the progress, conducts data collection and answers to common questions, performs a self-check list according to the error question prompt, and performs a self-check according to the learning list. This is a review process in itself.

In the process of group evaluation of students, it is also necessary to judge the degree of individual contribution to the group team based on the collaboration of classmates in the group. According to the degree of personal contribution, students with more contributions have higher relative scores; students with less contributions have lower scores; students who are purely free passengers won't score, which minimizes the possibility of nice guy's appearing. The contribution factor is relatively fair. When there are disputes between contributions and mutual evaluation, a question and answer session will be set in the group display. According to the learning log of each group, the teacher has the right to adjust the score for special situations.

Therefore, according to the teacher's subject evaluation and the student's mutual evaluation, the teaching effect can be scientifically and reasonably evaluated under the emergency education system.

VIII. CONCLUSION

To sum up, under the emergency system of COVID-19, teachers should comprehensively use various online platform tools, means and methods, combine the characteristics of higher education liberal arts, develop online teaching design, reasonably use the online education methods of live broadcast, recorded broadcast and a combination of the two, pay attention to the online learning situation of students, increase the interaction between teachers and students and develop online education. It is necessary to integrate the score quantification method and qualitative flexible subjective evaluation method with teachers as the main body, and combine the methods of mutual evaluation of students to scientifically and reasonably evaluate the quality of education in order to ensure the effective implementation of online education with the characteristics of liberal arts in colleges and universities under the emergency education system, enhance teacher-student interaction and ensure the teaching effect.

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