The Investigation and Analysis of the Online Teaching Strategy Under COVID-19

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The teaching activities of the colleges and universities in China had gone through the online teaching mode under the background of epidemic disaster of COVID-19 in 2020. The online teaching is categorized as smart teaching in essence. However, the construction and development of online teaching in the smart teaching as well as the participation of learners in it are both of much importance. Therefore, the research on the online teaching strategy does matter to the smart teaching.

Keywords: online teaching, smart teaching, teaching strategy, participation of learners

Introduction

The network age has realized the emergence and development of intelligent teaching, which is embodied in the network teaching. Wisdom of teaching refers to integrate and digitalize all the information concerning classroom learning, teaching, scientific research, management, and service life, using campus computer technology, network technology, communication technology, and scientific and standardized management, to form a unified user management, resources management, and unified access control. Intelligent teaching focuses on students’ access to learning resources through the Internet on mobile devices. Teachers use multimedia teaching devices to connect to the wireless network to check students’ learning, complete lesson preparation, and carry out scientific research at anytime and anywhere. The core of the classroom is to make full use of the wireless network classroom, to achieve paperless teaching. Wisdom class with dynamical learning evaluation penetrates in the whole process of diagnosis and assessment of classroom teaching, and can feedback evaluation according to the demand for real-time results, including the pre-class assessment and feedback, real-time detection evaluation and instant feedback in the classroom, homework evaluation and tracking feedback, so as to realize the instant and dynamic analysis of the diagnosis and evaluation of information feedback, reconstruction of teaching evaluation system.

The Basis of the Smart Teaching in Theory

The theoretical basis of the construction of wisdom-teaching is the Content-Based Incentive Theory, which studies the cause and the concrete content of excitation factors. It focuses on the content of satisfying people’s needs, that is: satisfying everything that people need, so as to arouse people’s motivation.
Content-Based Motivation Theory focuses on the study of incentives to stimulate motivation, mainly including Maslow’s “Hierarchy of Needs” and Herzberg’s “Two-Factor Theory”. The two “needs” in the “Hierarchy of Needs Theory”, that are the needs for knowledge seeking and self-actualization, are exactly the important goals that the intelligent teaching system gives learners to realize their self-needs. The most common support platform for smart teaching is Super Star Learning Connect. Many links of the learning APP reflect the Hierarchy of Needs Theory, such as Answering Race function, Topic Discussion function. First, Answering Race function is the best embodiment of the learners’ demand for knowledge and achieves their cognitive and thirst for knowledge. In this process, if the learners successfully answer the quick response questions accurately, learners will immediately get a sense of achievement. Therefore, in this sense, learners get the needs for self-realization, which precisely reflects the core content of “Hierarchy of Needs Theory”. Secondly, the Topic Discussion function can display the information of all learners participating in the activity on the platform. Participants can see the answers or thoughts of other learners, which can not only reflect the learners’ need for knowledge, but also the best interpretation of self-display and self-realization. Therefore, the setting of this function of learning APP coincides with the “Need Hierarchy Theory”. “Double-Factor Theory” is also perfectly embodied in the wisdom-teaching system. This theory emphasizes that not all needs satisfied can stimulate people’s enthusiasm, but those called motivators’ needs are satisfied, and then people’s enthusiasm can be maximally demonstrated. If there is no incentive, there will not be much dissatisfaction. Many functions of the Learning Pass APP are designed to motivate learners’ needs, for instance, Theme Discussion, Quizzes, Answer Race etc. Topic discussion can give learners a platform to show their thinking results and opinions in front of many learners, and systematic submission can see the sequential records, which can further stimulate the enthusiasm of learners.

The Questionnaire on the Participation of Learners in Smart Teaching

As mentioned above, smart teaching is embodied in online teaching. Therefore, in November 2020, the author conducted a questionnaire survey on learners’ participation in smart teaching. The questionnaire included 15 questions and the respondents were undergraduates. A total of 7,726 valid questionnaires were collected, in which the following two questions deserve the most attention.

The first is which teaching method has the best effect in smart teaching. 4,250 respondents, accounting for 55.01% of the total number, believed that “recorded lectures plus webcast (explanation)” was of the most preferable. The remaining three methods, which were “webcast (mainly live broadcast), MOOCs (mainly self-study), and recorded lectures (mainly watching regularly accessible videos)”, accounted for more than 10% respectively, among which webcast (mainly live broadcast) accounted for 18%. Almost 60% of the students rated recorded lectures plus live webcasts as the best method for learning, and live broadcast, which is next to it, accounted for 18%. The only difference between the two methods was recorded lectures. Meanwhile, the questionnaire showed that 11.96% of the students rated “recorded lectures” as the best, which account for the least among the four teaching methods.

The second one is which form of teaching organization can promote learners’ academic performance the most. 42.71% of the students thought that “video explanation plus timed in-class exercises and tests” had the greatest promoting effect on learners. The number of the students, who thought that “video explanation plus in-class questions” had the greatest promoting effect, accounted for the smallest proportion, 15.92%. 20.92% of
them thought that “single video explanation” had the most promoting effect. 20.45% preferred “video explanation plus homework within a limited time after class”.

The Analysis of the Factors Affecting the Learners Participation in the Smart Teaching and the Designing of Teaching Strategy

The analysis of the factors affecting the participation of learners in the smart teaching begins with two questions mentioned above. The first one is the question that which teaching method of intelligence teaching has the best learning effect. According to the survey, 60% of students think that videotaped lectures and online teaching are the best way to teach. From the perspective of questionnaire design, only one of the four options include the combination of the two modes, while the other three teaching methods have only one teaching mode. Therefore, the variety of teaching methods makes 55.01% of respondents choose the fourth option. The diversity of online classroom teaching methods is a very important key factor to learners’ engagement. Therefore, when the teachers design the intelligent teaching strategies, they will take diversified teaching methods of network classroom as much as possible. We will reflect one question: If we relate Question No. 9 in the questionnaire (participation frequency of teaching method of network classroom) and Question No. 3 (which teaching method of network classroom has the best learning effect), we reach one conclusion that the participation frequency of two options of online teaching and videotaped lectures and teachers’ live broadcasting is the highest (57%) and the mode of videotaped lectures and teachers’ live broadcasting has the best learning effect (55%). Of course, according to Question No. 7 of the questionnaires, online teaching brings learners the most pressure, and the frequency of participation of online teaching is also high (57%). Therefore, from the perspective of intelligent teaching strategy design, it is advisable and effective way for the teaching staff to adopt the mode of videotaped lectures and teachers’ live broadcasting in the intelligent teaching. As can be seen from the eighth question (the learners’ preference on the online classroom teaching method): For the learners who like the online classroom method to the maximum value of 5, their choices of the first option—MOOC and the fourth option—videotaped lectures and live broadcast lectures account for about 21%. Although learners’ preference for both of them reaches the highest value of 5, this does not exclude the factor of learners’ own preference. Therefore, the single MOOC teaching method of teaching staff is not the most ideal teaching method.

Secondly, we will discuss, among all the smart teaching methods, which one gives the most effective promotions on learners. Compared with “sole video-based” explanatory teaching, teachers’ asking questions in “video-based and question-based” class does not show any change in students’ acceptance of the teaching methods. In other words, teachers’ asking questions in “video-based and question-based” class does not give any facilitation for learners. The reason why we choose “video-based and in-class exercise and trial” teaching method is that it plays the most importantly promoted role in learners’ learning performances, almost half the role. Therefore, “video-based and in-class exercise and trial” teaching method, benefits from Chaoxing Learning and Teaching Platform App, is very significant in teaching procedures. The survey in the part of questionnaire involves choices of teaching and learning platforms. And 64.26% of the teachers and students vote for Chaoxing Learning and Teaching Platform. The functional feature of in-class exercise and trial is embedded in Chaoxing Learning and Teaching Platform, which gives overt pressures and meanwhile the greatest push on learners. It’s worth noting that the proportions of using “video-based and finishing-homework within a limited time” and “sole video-based” teaching methods are respectively 20.45%
and 20.92%. By comparing the above two methods, we get a conclusion that finishing homework within a limit of time after class provides advancement on filling up the unknown and reviewing the new ones for learners. However, the answers to the sixth question in the questionnaire show that teachers’ in-class questions give the biggest pressure on learners. By analyzing the answers to the fifth question, we draw a conclusion that in-class questions give the least positive effects on learners. This indicates that certain teaching method can bring great pressures but no stimulation to learners. Thus, while designing smart teaching strategies, the related teaching faculties had better give a further reflection on how to enrich classroom teaching methods in online classes and increase chances of learners’ participation at the same time in order to maximally assist learners.

Conclusion

Teaching and learning activities under the background of smart teaching are different from physical teaching. Since the two are different, teaching staff must highlight the different characteristics of wisdom class, reflect the advantages of wisdom class, and avoid the disadvantages or deficiencies. There are various factors that affect learners’ participation in smart teaching, such as teaching methods, teaching organization forms, and teaching links such as timed tests, homework, and exercises. Although webcast is a teaching method of smart teaching, it puts great pressure on learners. However, the learners’ participation in learning may not be high, and the effect of webcast in promoting learning may not be the best.

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