

NEW FORM OF EDUCATION UNDER THE COVID-19 PANDEMIC

ONLINE EDUCATION

Zezheng He, AKARAMANEE SOMJAI

Suan Sunadha Rajabhat University, Thailand.

E-Mail: 1s 64563829060@ssru.ac.th, 2akramanee.so@ssru.ac.th

ABSTRACT

Since 2020, the changes in the social environment have made students and teachers at all levels of education adapt to online learning and teaching rapidly, and the practical demand and application scope of online education have been greatly improved, which also forces the rapid improvement and development of major live streaming platforms. In addition, due to the sudden COVID-19 pandemic, students are taking online classes instead of offline classes, which is a big change in education methods. This article will "Internet +" era, online education, online education and traditional offline traditional education, in combination with the era background of the "Internet +" to the requirement of creative talents of science and technology and society, students, office workers need to accept education of different levels such as population and the demand of the aspects of teachers, school, a comprehensive analysis of the advantages and disadvantages of online education and facing challenge, It is the only way for the development of new education in the future to explore reasonable and efficient teaching strategies that organically combine online and offline education.

Keywords: Education, Online education, New form of education

1. Background

1.1 Development status of online education

In 2020, due to the outbreak of COVID-19, People's Daily life was greatly impacted, and students could not go to school to study. During the outbreak, primary and secondary schools across the country switched the teaching scene from offline to online, which changed students' learning habits, improved teachers' and parents' awareness of online education, and promoted the development of K12 online education. The online education industry has become hot, and the scale of the online education market is also expanding. The number of online students and their frequency of use on several major teaching platforms, such as Dingding, Yuclassroom and MOOC, have increased exponentially, making online classroom and online learning the new normal. [1].

Primary and middle school students are under great pressure from entering high schools. On the one hand, they are not allowed to choose schools during the compulsory education period and the school burden is reduced. On the other hand, nearly half of the students cannot go to ordinary high schools after the compulsory education period.

Students are like indigenous people living in the Internet world. For them who practice the concept of "Internet is life", online courses are like returning to the familiar visual culture

world. All of a sudden, smart phones, tablets and computers have legitimately become their learning and entertainment tools for getting along with each other. There is no doubt that the abundant time on the Internet gives students more opportunities to have access to a full range of video courses, and those courses that meet their preferences and meet their needs also improve students' initiative and enthusiasm in online learning to a considerable extent.

Distance online education has long been viewed as an alternative approach to education, especially for adult learners who continue to seek educational opportunities. And with the huge changes in the social environment in 2020, students and teachers at all levels of education have quickly adapted to this virtual teaching mode.

2. Overview of Online Education

2.1 What is online education

Online education, as the name implies, is the use of the Internet and other modern information technology for teaching a new way of teaching. Through the Internet, students and teachers can carry out teaching activities even if they are thousands of miles apart. The rich interaction and collaboration really breaks the limitation of time and space. Students can learn actively and repeatably anytime and anywhere, which is the most convenient way of learning. Personalized teaching, can independently choose teachers, teaching style and other personality standards. Through the application of big data and artificial intelligence to realize the automation of teaching management, real-time fine Education association online education development process and new path ideas, carry forward its innovation, to provide readers with comfortable reading feelings.

Quasi master the teaching situation, learning difficulties and main problems, provide matching teaching resources, targeted guidance to students, improve students' learning efficiency. It makes up for the imbalanced educational resources in traditional education and realizes the sharing of educational resources. It can make all kinds of high-quality and rich educational resources not limited by time, space and region, quickly and timely radiate to more students in remote mountainous areas and poor areas, so that they can obtain better education through online education, and promote education equity. Online education can be divided into three categories according to the types of services provided: tools (question bank, taking photos and searching questions), platforms (teachers open an account to teach, and students can choose teachers and courses for live interactive learning), and content (teachers upload courses, and students learn by watching videos). Online education business owners should focus on four main areas, namely preschool education, K12 education (kindergarten through 12th grade high school), higher education and vocational training. Among them, the largest share is the higher education market, which refers to the online academic education market. In terms of teaching methods, it can be divided into large class system, small class system, 1 to 1 or 1 to N system, and video class. According to the business segmentation, online education includes language education, K12 stage education, examination and certificate training, children's interest cultivation and early education, online learning tools, etc.

2.2 The development of online education

China's online education started slowly from the end of the 20th century and experienced the embryonic stage (from the end of the 1990s to 2005). During this stage, the Domestic Internet just started and the online education experience was poor. The state approved 68

colleges and universities as the national distance education pilot. In the exploration stage (2006 -- 2012), network bandwidth service was improved, video courseware was the mainstream of online education, and the enterprise business model was being explored. New Oriental Online, Huijiang Online school and other online schools were put into operation. Rapid growth stage (2013-2017), the technological upgrading of the Internet and mobile Internet provided space for the development of online education, and the emergence of live classes opened up the business model; In the initial maturity stage (from 2018 to now), the integration of resources, technological progress and service upgrading drive the continuous innovation of service mode. The market competition is fierce, the product system is mature, and the policy supervision is becoming stricter. Among them, in 2017, because the new contents such as live, short video transmission, such as online education products also began to actively explore, and gradually on the basis of cash, at the same time, new technologies, such as artificial intelligence in the application of online education products also have increased interest in the product, from the marketing point of view, it also be online education product advertising channels and one of the selling point.

2.3 Online education opportunities

In traditional education, teachers are indoctrinators of knowledge, while students are passive recipients. The defects of this teaching method can no longer adapt to the development of The Times in today's rapid development of "Internet + education". "Internet + Education" gradually reconstructs the underlying structure of traditional education, while the proposal of online education also brings a new spring breeze to education methods and provides new ideas and directions for the reform of education and teaching in the future [1].

The booming development of online education, such as some online platforms for university courses, including MOOC, Chinese University MOOC, Xuetang Online, and some public course apps, such as Tencent Classroom, netease Open Class, Xuetang Online, Youdao Elite Class, And Dedao, have provided more opportunities for people at different levels who want to continue their education. The level of social democratization has been further improved, and more people who are willing to learn have equal opportunities for education [2]. We must admit that online education has no specific and strict restrictions on the time and place of learning, and everything is in accordance with the habits and hobbies of learners. Therefore, online education is the product of the personalized development of office workers, and it is like a high-quality service tailored to a certain person. Learners can choose the appropriate time and place to study according to their actual situation, which improves their freedom of education.

The boom in online education has also led to an explosion of online conferences and live video streaming. The online conference system represented by Tencent Conference allows experts, scholars and students from anywhere in the world to join in, providing a new platform for online real-time communication; The short video live broadcasting system represented by Douyin allows short video promotion and online live broadcasting of goods, providing new opportunities for online trading economy. In addition, virtual field trips and virtual LABS are emerging online interaction modes. To sum up, online education will drive multi-directional and multi-angle modern emerging industries. At the same time, these new industries will react to online education and build a platform for its development. No matter which model is finally selected, they will be developed to provide complete educational information solutions to the system integrators, become the only way for the development of economic and cultural

industries.

3. Development trend of online education technology in special period

Under the background of "Internet + Education", online and offline mixed teaching is the trend of future education. Learners learn from online teaching resources before and after class, while teachers mainly organize teaching resources and solve problems for students. For teachers, they should have the information literacy required by the information age [9]. Through the popularization of 5G network and AI technology, the integration of online and offline teaching, and the reform route of actively developing "Internet +" courses, the paper puts forward strategies for better development of online education in the future. And simple course of primary and middle school students, for example, it is not hard to imagine that we students through the delivery of preparation before, to highlight in advance, online teaching, using the courseware of visual break through difficult point, after class for learning difficult students push short video recording of teaching, or according to the learning situation once again back to the classroom activity, will be discussed without being limited by the space communication between teachers and students, Such a teaching mode more clearly defines the subject status of students in learning activities [10].

This paper discusses the development trend of educational technology from three aspects

First, a highly open and shared online course system. Moocs have opened the door to large-scale online education, initially realized the open sharing of high-quality course resources, and significantly improved the fairness of education. However, from the perspective of the actual demand of "ceasing learning without stopping classes", existing MOOC resources still have problems of insufficient quantity, uneven quality and low openness [5]. In addition to MOOC, there are also personalized temporary video recording, live teaching, and integrated media courses. Its core is to promote, interconnection of different MOOC platform, promote the online courses is editable, make teachers and students can be independent series according to the requirements of teaching content close to the curriculum resources, and then seamlessly live online courses, lectures, offline video teaching, finally realizes the adjust measures to local conditions, according to their aptitude of personalized online teaching.

Second, online and offline integrated digital teaching platform. MOOC can provide large-scale open and shared online courses, and also put forward higher requirements on the learning time, learning ability and self-control of the students. If the teaching process completely depends on students' online autonomous learning, simply video-teaching and transferring it to the network platform will easily lead to the dilemma of low course completion rate and poor self-study quality, and the actual effect of MOOC teaching may even be lower than that of traditional classroom teaching. Therefore, the online and offline hybrid teaching with MOOC resources for small-scale students, which is compatible with the autonomy of online learning and the participation of classroom teaching, has become the mainstream direction of the reform of university teaching mode. It is urgent to redefine and build the next generation digital teaching platform according to the needs of hybrid teaching. In order to achieve this goal, it is necessary to re-establish the operation norms and digital standards according to the asynchronous and synchronous teaching needs of hybrid teaching, and link the course content, platform carrier and hardware facilities to form an integrated digital learning environment.

Third, teaching AIDS based on big data/artificial intelligence. In recent years, with the

popularization of big data application and the breakthrough of deep learning technology, artificial intelligence has shown a strong advantage of empowerment and started to deeply integrate with all walks of life. Online education, with its original Characteristics of the Internet, has the natural soil for big data/artificial intelligence technology to take root and sprout. There are three main technical links to realize the teaching assistance based on big data/artificial intelligence: one is the digitalization of the teaching process. Large-scale intelligent application is the premise of enough scene big data, in order to realize effective digital intelligent auxiliary teaching is not only to the curriculum resources, but also on students' autonomous learning, teacher, professor, the interaction between teachers and students, teaching management, the evaluation process for standardization and digitization, the lifecycle of the formation of teaching large data [6]. Second, the intelligentization of teaching activities. With teaching big data, various intelligent teaching applications can be realized, which are mainly reflected in intelligent teaching management and accurate personalized autonomous learning. The former mainly serves teaching managers and teachers, such as artificial intelligence response robot that partially replaces teachers, teaching analysis and prediction system used to supervise students' learning process, etc. [7]. The latter mainly serves the autonomous learning process of students, such as adaptive learning based on artificial intelligence. Through data analysis and periodic feedback, the knowledge stickability of students during personalized learning can be increased and the success rate of autonomous learning can be increased. The third is the intelligentization of teaching evaluation. At present, online teaching evaluation is based on students' online learning course data, homework completion, periodic test scores.

4. SWOT analysis of online education

Strengths

Nowadays, Internet technology develops rapidly and is everywhere. 5G comes one after another, provides wave after wave of technology and carrier support for the development of online education, and greatly excavates the advantages and potential of network teaching. Through the test the outbreak, compared with the traditional classroom teaching, online learning, foster strengths and circumvent weaknesses have time the characteristics of flexibility, convenience and low risk, and break the traditional education time, region and technical limitations, more will be beneficial to the realization of education resources, provide students with more stable and efficient, more refreshing learning experience. At the same time, the field of higher education in China is also constantly changing and innovating to keep up with international standards. There are many famous UNIVERSITIES in the United States that have started to provide online opportunities for domestic students to study, and the recognition of master's degrees from many foreign universities in China is gradually increasing, which is guaranteed to be valuable. Compared with graduate school in China, online study has obvious advantages with low time cost and high cost performance. Online learning is bound to receive more attention as another quality option in the near future, as the national entrance exam becomes increasingly demanding. Artificial intelligence. The innovations in the application of ARTIFICIAL intelligence in education include speech teaching based on speech recognition technology, online model test and evaluation based on facial recognition technology, etc., to realize the intelligent education of human-machine integration, the integration of knowledge

and action, and the integration of virtual and real. The education mode is increasingly personalized.

Weakness

According to the survey, Chinese online education users especially value the quality of teaching, faculty and teachers, and are highly sensitive to price. At present, offline education still occupies an absolute and leading position, while online education, as its supplement, is bound to have some shortcomings.

1. Online education is not standardized and lacks supervision. Affected by the epidemic, the online education market has become extremely hot. Driven by huge market demand, a variety of education platforms have emerged, but the problems behind them have emerged one after another. First, the quality of teaching content on various platforms is uneven. Second, online education apps have many compliance problems in the protection of personal information. Most of these are common problems common to online education apps: the lack of disclosure or transparency of privacy policies before using personal information; Forcibly disallow account logout. How to ensure the quality of online teaching and protect the legitimate rights and interests of students and parents during the epidemic has become the focus of the media and the public. Therefore, how to ensure the legal compliance of teaching content, qualification access and teacher qualification in the online education industry is not only a problem that online education institutions need to rationally face, but also brings tests and difficulties to the regulatory level [13].

Opportunity

1. The need for epidemic prevention and control. By the beginning of October 2020, the cumulative number of confirmed COVID-19 cases abroad had exceeded 30 million, and the epidemic was becoming more and more severe, with a large number of returnees pouring into China, leaving China still facing the risk of large-scale outbreak. Below this circumstance, let the online education development that already heats up be in full swing originally, show the potential that the star starts a prairie fire. Under the requirements issued by the Ministry of Education, online education during the epidemic has adopted a government-led approach, with universities as the main body and the participation of the whole society, to coordinate online and offline education. The epidemic has rapidly expanded the user scale of online education industry, reduced the cost of acquiring customers for enterprises, and promoted the construction and development of online education industry. Online education platforms are increasingly returning to the essence of education, focusing on innovation in product design, making full use of their own advantages, using technology to support the quality of courses, and making long-term plans to explore new development space in the market [11].

2. National policy support.

(1) The introduction of "no suspension of school", education informatization as a guarantee means. Recently, in order to control the epidemic, the Ministry of Education and the Ministry of Industry and Information Technology issued a notice on the arrangement of "suspension of classes during the extension period of primary and secondary schools", requiring all colleges and universities across the country to postpone the start of the spring semester in 2020. As soon as the policy came out, "not suspending classes" immediately became the focus of public opinion. Online education ushered in the spring, which is not only good for the education information industry, but also spawned the construction and development of the industry.

(2) The construction of education informationization has reached 2.0, "three full, two high and one big" to promote development.

At present, China's education informatization construction has entered the 2.0 stage, from the completion of setting up the scene education informatization technology and platform to the popularization of the application market, the deep integration of innovative information technology and education model; To achieve the strategic goal of building "three links and two platforms" infrastructure and steadily moving towards "three benefits, two high levels and one big".

The epidemic in 2020 has forced almost all courses on the Internet, which has changed the learning habits and modes of the past, and led to the launch of knowledge payment platforms. "No online education" has become a true portrayal of the current society.

Threat

1. Online education has higher requirements for information equipment and network environment. Good hardware equipment and network support are sufficient conditions and basic guarantees for the smooth and comprehensive development of network classroom. However, in real life, it is faced with the difference of economic development level between urban and rural areas and the unbalanced development of online education resources. Advantaged families not only provide their children with smart phones, laptops, ipads and even home theaters, but also provide them with abundant online education resources. In contrast, urban low-income class and migrant worker families located in remote areas do not have such good learning conditions. They often suffer from lag, delay and even disconnection due to poor hardware equipment and network signal, and their learning conditions are quite different [12].

2. It is not easy to be accepted by parents of students who hold traditional educational concepts. In the information age, children are addicted to electronic products and sit in front of computer screens for a long time, which can easily lead to myopia and so on. In recent years, frequent incidents of students addicted to mobile phones and their parents have conflicts and even commit suicide by jumping off buildings are examples. So it makes sense that online learning can cause anxiety and resistance among parents. At the same time, online classes often lack supervision of students, resulting in a small number of students being late, absent from classes and cheating in exams. Some teachers have to ask parents for active cooperation to help supervise students to attend classes, complete class notes and homework after class. Therefore, some parents believe that video classes will only make children lose concentration and keep up with the pace of teachers, resulting in a decline in academic performance. It is an external threat to the development of online education that parents cannot affirm or even doubt the effect of online education.

5. Problems existing in online education and solutions

1、 Limited use of technology platforms and related conditions

Although online teaching has been widely used in people's life with the progress of Internet technology and the development of application platforms, it has only become a part of college teaching as an elective course, which shows that its application in college teaching is quite limited.

In the context of the sudden epidemic, stable and orderly offline teaching activities in normal times were hindered and it was difficult to carry out, and online teaching quickly became

popular as an alternative. As a suddenly re-used teaching mode, online teaching first tests the technical foundation and operational level. The current application platform cannot play a greater role and function, which is mainly limited by three conditions: first, the lack of hardware platform operation; Second, the defects of technical conditions themselves; Third, the operation and use of teachers and students proficiency is not high.

For the first point, online education relies more on related electronic products and hardware such as the Internet. Electronic products as the basic carrier, computer or mobile phone is the main; The Internet relies on wired networks, 4G or 5G networks for mobile phones and so on. These two parts are required hardware. Due to the sudden attack of the epidemic, the majority of teachers and students were not fully prepared. According to the data, among the six classes led by teacher L at present, taking one class as an example, only two fifths of them take computers home, two fifths of them do not take computers, and one fifth of them do not have computers.

In addition, half of those who brought a computer home had no Internet or inadequate reception. Moreover, students generally have smart phones, and the Internet can reach 4G in their hometown.

Therefore, on the one hand, the number of students who can use computers to study is very limited. On the other hand, although students can use mobile phones to study, there are two obvious shortcomings: first, mobile phone pages are relatively small, compared with computers, learning effect is greatly reduced; Second, the computer courses that students have learned require more practical operation, which is difficult to carry out without computers. According to the teachers of the college: "Although students can use mobile phones to watch video learning, but as a practical operation class, the effect is not good, just like learning bicycle and swimming, watching others learn and learn by themselves, is not the same.

On the second point, platform systems often crash due to the number of people using them online at the same time. For example, teacher L leads six classes with about 50 students in each class, and four of them offer database courses. Due to frequent platform crashes, it is difficult to effectively promote and complete the teaching process.

With regard to the third point, proficiency in using the application platform is a basic prerequisite for successful online teaching, which actually requires a process. Since there have been few major epidemics or similar situations before, online teaching activities are not common, and the use of the new platform is under the unified arrangement of the school. Teachers and students are new to the platform, and proficiency is not enough. In the process of using, some problems will be exposed naturally, which not only increases the difficulty of teaching, reduces the actual effect of teaching, but also affects the enthusiasm of teachers and students and even the relationship between teachers and students.

2. The prominent formalism in the teaching work

Online teaching activities rely heavily on Internet technology and application platforms. Under the current advanced but far from enough technical conditions, although the goal of school suspension is guaranteed, in the process of teaching work, a large number of formalism phenomenon can also breed, greatly reducing the effect of teaching. According to the Ministry of Education and the requirements of this province, combined with their own actual situation, the computer college of the above university unified arrangement of online teaching. At the beginning, teachers were required to build classes and set up corresponding courses on the

above application platform, but there was no clear instruction on the specific form of teaching activities. Teachers could not quickly adapt to the new teaching mode according to their original teaching experience, and they were in a blind stage.

Seeing the popularity of online live broadcasting, some teachers of the college also tried to broadcast live on platforms such as "YY" and "Douyu" to complete their teaching tasks, which made them in full blast. After all, "work is the rice bowl of teachers, so they must be serious". But it is said that not many students watched, the effect is not good. In order to avoid increasing the burden on teachers and students, the provincial education department also issued a notice, the general content is not necessary to require teachers to record the course or live online, nor will it be forced to implement the management of teachers or students to punch the clock and other traces. The college forwarded the provincial notice.

Because the college itself relaxed the requirements, and teachers are also very blind, so formalism is more obvious, mainly reflected in the following aspects.

One is the negative attitude and coping attitude in the curriculum setting before teaching.

3. Digestion and reconstruction of teacher-student relationship in teaching process

First, the use of the platform is limited by relevant conditions, including problems in equipment and network conditions, frequent crashes of the platform system during operation, and problems caused by insufficient proficiency in using the application platform for the first time. Second, formalism appears in large numbers in the teaching work: some teachers have negative attitudes in the course setting; Lack of flexibility and low participation in the teaching process; Some teachers give free rein to homework after class.

These problems correspond to the effect shown in the initial stage, that is, in the current online teaching process, only a small number of students can study independently, teacher-student relationship cannot be effectively established, and the teaching effect cannot be presented to the maximum extent.

These problems arise from two potential presuppositions of online teaching: one is the physical basis of platform hardware and software; The second is to emphasize the value foundation of student autonomy. The former has reached certain conditions, and as an objective existence, can be improved step by step, so the latter is mainly considered here. Students' learning autonomy is based on the former, but in practical application, the existing advantages of network technology have not been brought into play, but the weakness of online teaching has been highlighted. The latter emphasizes the autonomy of students, or even completely depends on the autonomy of students, while ignoring the autonomy of teachers, another subject in teaching activities. This can be divided into two aspects:

First, the weakening of the management and supervision functions of teachers. Since the application platform is the main way to construct the relationship between teachers and students, teachers and students are not in the physical space, so teachers basically do not understand the learning state and behavior of students, so they cannot carry out effective management and supervision, let alone guidance. Compared with offline classes, teachers and students are in the same classroom and always face to face during class. Teachers can clearly understand students' learning status and behaviors in class. As one teacher said, "I know which students are listening carefully, which are having fun and which are learning by themselves." Lack of solid teaching environment, completely rely on students to learn independently, it is not practical significance. Second, teachers' negative attitude towards students is powerless. In the physical classroom, in

the face of negative attitudes of students, teachers can use all kinds of way and method, can mobilize student's enthusiasm and initiative, also can effectively suppress the students' negative and even destruction, most of the students are able to according to the methods and requirements of the teachers, give full play to their initiative, and self-regulation and restrain their own behavior. However, in online teaching, relying on students' autonomy and initiative, teachers cannot effectively use existing methods and methods to mobilize students' enthusiasm and initiative.

This is manifested in actively participating in teachers' teaching activities, completing all kinds of homework, but also independently expanding learning. It is not enough to rely only on the students themselves, but also need the patient guidance and effective supervision of families, and even the participation of social forces. Therefore, in order to improve the current stage of online teaching, teachers should not only further stimulate the role of leading students, but also need the active participation of family and even social forces. Through the joint efforts of all parties, the mechanism of timely communication and exchange should be established, and various effective methods and methods different from offline classes should be adopted to rebuild the teacher-student relationship, ultimately reducing the impact of the epidemic and maximizing the realization of the goal of "school suspension without suspension".

REFERENCES

- [1] Fu Weidong, ZHOU Hongyu. Challenges brought by COVID-19 to online education in China and countermeasures [J] journal of hebei normal university (education science edition), 2020,22 (2) : 14 ~ 18
- [2] ChuFeng. [J]. Internet Weekly, 2021(07) : 14-15.]
- [3] Tao Xiping. Actively promote the deep integration of artificial intelligence and education [N]. China Education News, 2019-06-15.
- [4] Zhang Xiaofeng. Multiple impacts of COVID-19 prevention and control on Higher education in China [J]. Beijing Education (Higher Education),2020(4):29-31.
- [5] Wan Kun, Zheng Xudong, Ren Youqun. Ready for scale-up Online Learning? Online learning and intelligent technology application in the post-epidemic era [J]. Journal of distance education,2020,38(3):105-112.
- [6] WU Di, YU Liqin, RAO Jingyang, et al. The Challenge and Improvement strategy of Information Literacy in Large-scale and long-term online teaching [J]. Electronic education research, 2020,41(5):12-17,26.
- [7] Liang Yingli, Liu Chen. Current situation analysis, Typical Characteristics and Development Trend of artificial intelligence education application [J]. China Electronic Education,2018(3):24-30.
- [8] Yan Wei, Lu Yujiang. SWOT analysis and strategy selection of online teaching in colleges and universities in post-epidemic period [J]. Guangxi Education, 2020, 23:6 ~ 9
- [9] Chen Ying, Zana, Yang Jun, et al. Opportunities, Challenges and Countermeasures of Regional Teacher Education under the "Internet +" Environment [J]. Information Technology Education in Primary and Secondary Schools, 2018, Z1: 33-36.
- [10] Fu Hongzhen. Application and Thinking of Online Teaching in intelligent Environment [J]. Principal of Primary and Secondary Schools, 2021(07) : 66-67.]

- [11] Li Biwu. Cold Thinking about "Internet + Education" [J]. China Information Technology Education, 2015(17) : 96-99.]
- [12] Zheng Yanlin, ZHAO Changming. Teaching online: Are We Really Online -- A New Understanding of the Connotation of Online Teaching [J]. Education Informatization in China, 2020, 19:24-26.
- [13] Dong Lixin. Research on the Problems and Strategies of online education development under the Background of "Internet +" [J]. Shanxi Youth, 2021(07) : 36-37.]
- [14] Ho K K. E-lesrning and the Deepening reform of higher teaching (PART I). China Electronic Education,2002(2):8-11
- [15] HongYan. Open Resource from Elite to Public: The evolution and Implications of TED. Modern Educational Technology,2013(4):12
- [16] Wang Wenquan. Online teaching practice based on Tencent Classroom. Journal of Shenzhen College of Information Technology,2020(5):56