

# The Research on Online Teaching in China in Recent 20 Years

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## Abstract

At the turn of the century, information technology, with network technology and multimedia technology as the core, has emerged and developed rapidly, bringing profound changes to the human production model, work model, and lifestyle, and bringing new opportunities and challenges to distance education. Modern information technology has greatly expanded the space and time limit of education, and improved people's interest, efficiency and initiative in learning unprecedentedly. In this context, primary and secondary schools set up a lot of online courses to improve the teaching effect, so that the practice of online teaching in China has developed rapidly. As a revolution in the history of education at the end of the 20th century, online teaching has been carried out in China for 20 years. With the attempt of online teaching in universities and educational institutions, a series of related researches have appeared. Research has not only greatly promoted the wide application of online teaching, but also made online teaching more and more reasonable and scientific. To improve the quality of teaching, let the majority of educators make better use of the online teaching and education model. This paper uses the literature analysis method, through collecting, identifying and sorting out the research on online teaching in the past 20 years, summarizes its advantages, influencing factors and strategies, forms a scientific understanding of online teaching, and puts forward reasonable suggestions for further research in the future.

## Keywords

Online Education, Study, Influencing Factor, Curriculum Resource

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## 1. Introduction

Online learning, also known as distance learning, became popular in international education in the 1970s. With the rapid development of information technology, developed countries and some developing countries in the world have vigorously carried out distance education with the network as the medium. Various online courses are increasingly increasing, and the advantages, influencing factors and methods of carrying out online teaching have entered the research field of education science [1]. Comparing with the traditional teaching method, it has the advantages of flexibility and resource sharing. It can also conduct synchronous and asynchronous teaching, mobilize students' initiative, better implement quality education, and meet the requirements of the new era education

form. Therefore, it represents the direction of future education work [2, 3]. However, there are many models and different functions of online teaching management platforms in the Chinese market, and there is no unified plan for the construction of auxiliary teachers. To better promote the development of online teaching, this paper intends to review and sort out the related researches in the past 20 years and puts forward specific and feasible suggestions for improving the quality of online teaching.

## 2. The Advantages of Online Teaching

### 2.1. Real-time Sharing of Resources

As a new teaching method combining modern information

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technology, it is generally believed that online teaching has many advantages over traditional teaching methods. Li Xianglin believed that online teaching is conducive to the sharing of educational resources, improving the efficiency and effectiveness of education, and enabling more people to obtain high-quality education at the same time. Sun Shuyan also pointed out that distance education, with its advantages of flexibility and resource sharing, can provide lifelong learning opportunities and conditions for people of all social strata. By sharing high-quality resources across time and space, it can reduce costs and improve social benefits [2, 4].

### 2.2. The Realization of Synchronous q&a

Sun Faqin pointed out that remote synchronous answering based on the Internet has become a reality. Through the remote synchronous q&a, although the teacher and the students are not in the same area, the students can get the teacher to answer the questions in person at the same time and can conduct real-time multimedia communication with the teacher. Li Xianglin believed that the q&a system can timely answer students' difficult questions and eliminate students' learning obstacles [4, 5].

### 2.3. The Realization of Asynchronous Interaction

Li Yuanyuan believed the most exciting things for teachers and students about online teaching is that in addition to online readable learning resources, online interactive teaching can be conducted asynchronously [1]. According to Liu Jianqiang, the main feature of online teaching is that teachers and students can interact with each other in real-time or not in real-time across space, which is the most significant difference between modern distance education and traditional education, as well as its advantages [6].

### 2.4. Promoting Students' Independent Learning

Li Yuanyuan, Wang Haidong and Ding Xingfu et al. believed that building an online learning community is the ideal goal of online teaching. It provides a free and open learning environment for teachers and students, which has a lot of digital learning resources, embodies the everyone is equal in front of high-quality resources. Students can choose convenient information, promote knowledge sharing and understanding, enhance the ability of autonomic learning. From passive acceptance to active construction, students can get more targeted and personalized guidance from teachers, form good interpersonal relationships with others and thus overcome loneliness [6, 7].

Li Xianglin pointed out that online teaching has changed from the traditional teaching-oriented teaching method to

learning-oriented teaching. Students are no longer passive learners, but active and active learners [4]. Liu Jianqiang also believed that online teaching focuses on students' self-study, giving full play to students' initiative, enthusiasm, and creativity in independent learning [6].

## 3. Factors Influencing Online Teaching

### 3.1. Learner Factor

Learners are the subjects of online learning and the beneficiaries of online teaching. Zhang Jiahua and Tian Fenhong believed that the success or failure of learning depends largely on learners' behaviors. The characteristics and behaviors of learners will directly affect the quality of learning. At the same time, Zheng Renxing pointed out that students' academic foundation would affect the study of online courses [8-10].

Kuang Shanyun, Wang Feng and An Zhefeng et al. believed that gender differences and age differences have a certain influence on students' choice of teaching methods. To some extent, learners' personality, interest in the course, expected grades and other important factors determine learners' interactive behaviors in online learning [11-13].

Li Haiyan and Mi Li believed that learning motivation is the most direct factor that affects students' enthusiasm [14, 15]. On this basis, Gao Chunli, Gu Yueguo and Lv Yuan et al. pointed out that learners' desire to communicate with others online, their cultural background, and the importance they attached to the course determine their learning motivation and thus affect their participation [16, 17].

### 3.2. Pedagogical Factor

Network teachers are the organizers and guides of online teaching. Luo Dan found that the timeliness of teachers' support is the fundamental guarantee for students' extensive participation in online learning and discussion, and the emotional interaction between teachers and students is an important factor to promote students' active participation [18]. Wang Feng and Wang Weiyu et al. pointed out that the quality of online teaching is directly affected by factors such as teachers' qualifications and levels, teachers' leniency towards students, teachers' popularity, and the frequency and depth of teachers' contact with students [12, 19]. Zhang Jiahua believed that the success of online teaching depends largely on teachers' understanding of online education and their grasp of the rules of online teaching, and teachers' teaching style will have an impact on the results of online learning [8]. Kuang Shanyun, Gao Chunli and Gu Yueguo et al. put forward that an important factor influencing the degree of teaching activity in online

courses is the participation of teachers, whose involvement greatly affects the degree of forum activity [11, 16].

### 3.3. Online Courses Factor

Zhang Jiahua, Lv Yuan and Wang Feng et al. believed that the content and presentation of online courses are in line with learners' expectations and learning styles, which is one of the important factors influencing the quality of online teaching. The difficulty of the courses, the academic nature of the courses, and whether the courses are compulsory or optional are crucial [8, 12, 17]. In Kuang Shanyun's opinion, the richness and accessibility of course materials in the network environment will affect the construction of the course forum [11]. Li Haiyan pointed out that the design and development of course resources is the premise and foundation of distance teaching and learning, and the online resource environment is an important guarantee of effective online learning for distance learners [14]. At the same time, Wang Weiyu pointed out that the design and construction of network courses is an important part of the implementation of modern distance and open education, which is a part of the support service system of distance education, which is the specific embodiment of network education resources. The quality of curriculum design directly affects the learning effect of learners and further affects the development of online teaching [19].

### 3.4. Network Environment Factor

The network learning environment plays an important role in the effect of online teaching. Li Haiyan proposed that the network environment is the foundation of online learning. When distance learners log on the online teaching platform, whether the interface is clear and beautiful, whether the module setting is reasonable and orderly, whether the streaming media is coherent and clear, whether the transmission such as upload and download as well as the interaction and communication are stable and fast will affect the online learning psychology and behavior of distance learners [14].

Zhang Jiahua, Wang Dandi, Mi Li, Tian Fenhong, et al. believed that a stable and smooth network environment is the foundation of online learning. When learners study online, their learning efficiency will be limited due to network bandwidth, resource transmission mode, resource format, and stability, resulting in loss of enthusiasm and learning mood, resulting in frustration, and thus affecting their learning [8, 9, 15, 20]. Kuang Shanyun also proposed that unstable system functions or poor network access to operators, slow network speed and complex platform would largely inhibit the construction of course forum, making learners turn to other methods for interaction [11].

## 4. Measures to Improve the Quality of Online Teaching

### 4.1. Create a Good Online Learning Environment

Xiao Aiping proposed to add important information to remind. The system should allow each student to get personalized reminders after logging in, such as reminders of emails, messages, course selection, textbooks, and other information, as well as early warning of homework submission, online synchronous q&a arrangements, exam information, and other informations, so as to prevent students from missing important information, and also facilitate students to identify their learning tasks. Wang Lihua believed that we need to work hard to create an online teaching environment for students, enrich teaching resources, enhance the interest and initiative of teaching resources, attract students and improve students' learning initiative. Li Qian believed that schools should guide students to change their learning concept, abandon the traditional educational concept, establish a new concept of online independent learning, fully emphasize the role of individual initiative, and change "passive" learning into "active" exploration [21-23].

### 4.2. Write an Online Study Guide

Wang Weiyu suggested that some courses should be offered for students to learn about the Internet and to popularize the Internet education so that students can know what online learning is and make full use of the abundant Internet resources [19]. Li Yuanyuan believed that common problems encountered by students in the learning process should be systematically integrated into study instruction books and bound into books for students' reference at any time during the learning process [1]. Wang Lihua pointed out that teachers should make necessary explanations on how students use online resources during class and correct any mistakes they find in the way of learning [22].

### 4.3. Strengthen the Management of All Kinds of Teachers

Ding Xingfu pointed out that it is very important to improve the training, assessment and incentive mechanism of online tutoring teachers, which can stimulate teachers' enthusiasm and promote the effectiveness and standardization of online teaching [22]. In the design of the online teaching system, Luan Yufei also attached importance to the realization of the function of the teacher module and designed the functions including course announcement, homework management, test management, test questions management, answer management, student management, information management, online discussion, and student data management. Niu Lina put

forward scientific principle, pertinence principle, purposive principle and demand principle in the training of teachers, and emphasized the importance of the construction of teachers. Wang Lihua proposed to open up the status of education tutor, let teachers guide students to study well [24-26].

Liang Yujuan pointed out that teachers, as learning partners, should actively participate in students' discussions, and at the same time encourage "onlookers" to bravely come forward from "behind the scenes" to express their opinions [27]. Li Cizhang pointed out that it is necessary to improve the construction, supplement, and design of teaching resources for online courses with the support of teaching teams [28].

#### 4.4. Design Network Resources Efficiently

Tang Ping believed that to stimulate students' initiative in learning, online learning resources should be built for practical problems and hot social issues, and these resources should be integrated through teaching objectives and teaching strategies to provide strong support for cultivating students' ability to solve problems and link theory with practice [29]. Wang Lihua pointed out that given the simplicity of online teaching in the past, in addition to resources in the form of text, online resources in the form of video, audio, streaming media courseware and teaching cases can be appropriately added to avoid monotonous learning process of students and increase the fun of learning [22].

#### 4.5. Establish a Reasonable Student Evaluation System

To test the effect of learners, learners need to be evaluated. Liang Yujuan pointed out that the content of the evaluation involves whether the expected goal has been achieved, the degree of participation and involvement of learners in the whole process, the attitude of learners and so on [27]. Xiao Aiping pointed out that we can increase rewards and praise to stimulate learners' external learning motivation and sense of attention and as a result of ordinary performance to rich evaluation form [21]. Li Cizhang pointed out that course teaching evaluation should be an organic part of the whole teaching system, not just as a "teaching link", and should focus on the practicality, practicality, and operability of course teaching [28].

## 5. Conclusion

In summary, the current research on the application of online teaching involves three aspects: advantages, influencing factors, and strategies. In terms of teaching advantages, previous studies have concluded that resources can be shared across time and space, synchronous and asynchronous teaching can be carried out, and students' autonomous learning

ability can be improved. In terms of influencing factors, previous studies have agreed that learners themselves, teachers, course resources and network environment are crucial. As for the measures to improve the teaching quality, predecessors mainly proposed to create a good learning environment, write online guidance, improve the quality of teachers, design network resources and improve the evaluation system. The research results make online teaching stand out in the form of education, and its position has been established and consolidated. People's attention to online teaching and sense of identity have also been improved unprecedentedly. It also plays an important role in the transformation of people's concept of distance learning. Based on the summary of previous studies, while recognizing the significance of the research, the author also found some deficiencies, mainly in the following points.

Firstly, the construction of teachers is incomplete. Current online teaching can be divided into school organization and teaching methods based on different apps. The teachers in the school education system are mostly scientific researchers such as professors and lecturers, who do not have too much energy to participate in curriculum development and construction. At the same time, the present education in the education market mechanism can not establish a powerful teacher team. Most of the team members are fresh graduates and part-time college students with weak knowledge of educational theories. They are characterized by a small amount of knowledge, great mobility and lack of professional ethics of teachers, which will undoubtedly greatly reduce the quality of teaching and affect the development of online education in China. Therefore, the future needs to be based on the knowledge, stability, good professional quality of teachers, vigorously carry out the construction of online teaching faculty, promote the reform and improvement of online teaching.

Secondly, online course resources need to be developed urgently. Driven by the concept of lifelong learning, there are numerous online teaching software developed at home and abroad, but there are no universal course resources. However, most educational platforms only provide word, PPT and other text materials, while few platforms properly add visual teaching materials such as pictures, tables, audio and so on. Therefore, based on the current emphasis and expectations of online teaching, it is necessary to take the development of teaching resources as one of the research focuses on the future research of online teaching.

Thirdly, the research method is single. As for the research on online teaching, although supported by some survey data, it mostly adopts the methods of literature and theoretical research, and survey research accounts for a minority. But online education is a teaching organization form which based on the practice, empirical studies carried out to improve the

objectivity and accuracy of the research, the research methods of quantitative analysis of data and conclusions will also study more convincing than in the past, at the same time, it can determine if previous suggestions obtained effect and improve the degree of trust. Therefore, the future should be combined with the actual, based on the theory of more research to promote the development of online teaching.

Therefore, future research must strengthen the development of curriculum resources, enrich research methods and improve the quality of the teacher team. Only in this way can online teaching get on the right track and become an indispensable form of auxiliary education in the education industry.

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