



Online Education: The Transformation in the Post-epidemic Era

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Abstract. The outbreak of COVID-19 in 2020 has brought about a blowout outbreak of online education, which has greatly promoted the development of online education and accumulated rich experience in online education. With the stabilization of the epidemic and the reflection of a series of pending problems faced by online education in the epidemic, OMO (online-merge-offline) mode, namely the integration of online and offline modes, has become a new trend in the development of online education in the post-epidemic era. Therefore, this paper provides new ideas for OMO mode construction in the epidemic era from three aspects: teaching arrangement, assessment method, and environmental construction, and helps the transformation and development of online education.

Keywords: online education; post-epidemic period; transformation

1 Introduction

Online education is an emerging field that connects distance education, distance computer interaction, instructional technology, and cognitive science [1]. The development of the mobile Internet drives new teaching forms such as MOOC and mobile classrooms. And the application of artificial intelligence and other cutting-edge technologies in the field of education drives the vigorous development of precision teaching and online education platforms. Online education and learning have become an inevitable trend in the future development of education modernization [2]. The value of online education is most evident in the COVID-19 pandemic in 2020, and the application of digital technologies such as 5G, artificial intelligence, and big data has created a broad space for the development of online education.

2 The development of online education in and out of school

The COVID-19 outbreak has led to the mass closure of schools around the world, leaving a large number of students with no school to attend. According to UNESCO, by the end of April 2020, more than 1.5 billion students, or 90.2 percent of the total, from

preschool to higher education in 191 countries and regions had suspended classes, undoubtedly posing a severe challenge to the education sector^[3]. In response to the epidemic, China's Ministry of Education has issued a series of documents about "suspend classes without ceasing classes", released links to electronic versions of teaching materials in a timely manner, made overall arrangements for the national network cloud platform and education TV stations to provide high-quality teaching resources. Various online education activities have been organized and carried out across the country through live streamed classes, online on-demand, online tutoring, and online flipped classrooms. This large-scale online education is an unprecedented social experiment in information-based teaching, which effectively resisted the impact of the epidemic on the education system. By May 11, 2020, the number of online cloud platform for primary and secondary schools in China had reached 2.073 billion, with 1.711 billion visitors. And the audience rating of China Education TV's classroom in the air has jumped significantly, ranking top 10 in the attention of national TV channels^[4].

At the same time, Due to the COVID-19 pandemic, all offline institutions have been suspended. Traditional training institutions accelerate the layout of online businesses to enrich the forms of online education and boost the development of online education. According to the survey, from 2016 to 2019, the online rate of the education industry increased by 5 percentage points from 8%-10% to 13%-15%, with an average annual increase of about 1.7 percentage points. Among them, the rate of K12 subject training and online education for young children increased from 1% to 5%-8%. Catalyzed by the epidemic, the overall online rate in 2020 will be 23%-25%, ushering in a blowout development of the online education industry [5]. In the face of a huge crisis, online education gives us hope to solve the problem and also gives us a deeper understanding of the advantages of online education.

3 Reflections on online education in an epidemic situation

According to the White Paper on Online Education for Chinese Youth (2021), online courses have retained new users to a considerable extent after the stabilization of the epidemic and increased by nearly three times compared to before the epidemic, which also proves that the trend of going online is irreversible. Therefore, online education also needs to face current problems and deficiencies.

3.1 The limitation of comprehensive education

For online education, online is the means and education is the foundation. However, education is an extremely complex project, and online education cannot support the task of comprehensive education at present. First of all, online education uses technology to deduce and display knowledge in various forms. The convenience and flexibility of learning make online education have great advantages in learning knowledge and skills. But due to the separation of space between teachers and students and between student groups, the implementation of some educational activities in class will be limited to a certain extent, which makes online education have obvious disadvantages in

the shaping of ideological character, cooperation ability, working ability and the cultivation of views on the world, life, and values. At the same time, from the perspective of educational approaches, the main ways of education are curriculum education, cultural education, activity education, practice education, management education, and so on, while online education can provide very limited education ways. As we all know, education has its scientific side, but also its artistic and creative side, which cannot be achieved only by relying on technological means. Therefore, this is a defect that needs to be continuously improved in the future development of online education. What's more, at present, online education in primary and secondary schools mainly focuses on subject education. In particular, the off-campus online education industry mainly provides English, mathematics, and Chinese as the main subjects of teaching and learning, as well as assistance. As a result, the development and application of other types of courses are relatively less, which to some extent is not conducive to the promotion of quality-oriented education and the widening of students' knowledge reserve system.

3.2 The blurring of online and offline teaching boundaries

Offline education is the more familiar traditional education model, that is, teachers and students face-to-face communication, preaching, and teaching. Students interact with teachers by listening to lectures, taking notes, and completing class tasks. Online and offline education has different forms and characteristics. However, the phenomenon of "moving theory" appears in the process of online education practice, that is, online education is just moving offline teaching content to the online, through network broadcast or recording to complete the teaching tasks [6]. The educational model of "information technology + traditional teaching" has not fundamentally changed the structure and ecology of education. Technology-led teachers and machine indoctrination inhibit students' subjectivity, fail to truly build an educational ecology centered on learning and promoting students' personalized development, and the unique advantages of online education are not shown in the teaching process. Therefore, the blurring of the boundary between online and offline continues to occur. This has led to the emergence of the "substitution theory", which holds that with the development of information technology, learning places will evolve into learning centers, and online education will eventually completely replace traditional offline education. Regardless of that view, the homogenization of online and offline education greatly affects the play of online education advantages.

4 The transformation and development of online education

OMO teaching mode is the integration of traditional face-to-face learning and online networked learning [7]. In the second half of online education, offline and online teaching should not be separated from each other, but highly integrated with their own advantages. This needs to clarify the respective responsibilities of online and offline teaching. For the traditional "offline" mode, each professional system should provide

strong online support to ensure its teaching quality, improve its teaching effect and improve the efficiency of business operation. At the same time, it is also ready to prepare to add online support to the offline model based on market demand. The most effective way to improve the efficiency of talent training is to give full play to the radiation effect of online high-quality education resources and the educational function of offline education. The epidemic has led to the transformation of online education, timely promoting of OMO mode, and promoting the transformation and development of online education in the post-epidemic era. Specific ideas are as follows:

4.1 Establish Comprehensive Education Matrix

Education is not the processing equipment of a factory or the communication of commercial logistics. Human ability and the emotional system can not be fully realized through technology and tools. Therefore, in the transformation and development of online education in the post-epidemic era, more attention should be paid to how to innovate and develop online education to promote education, and how meet the requirements of comprehensive education. First of all, teachers should establish the "Internet +" mode of thinking in line with the law of education and cultivate their own information literacy. It is necessary to strengthen the research and study of online teaching methods and enrich the online classroom teaching forms. Teachers should make reasonable use of the advantages of online education to promote emotional communication between teachers and students and online interaction between students and students. The ultimate goal is to overcome the limitation of classroom teaching due to the different time and space between teachers and students in the process of online education. At the same time, in the course content setting and selection, online education should not only pay attention to subject education and teaching but also actively develop diversified online courses. Strive to create a quality-oriented education curriculum section to provide students with a variety of online courses including art, science, and so on.

4.2 Construct Multiple Evaluation Index

The current evaluation system is mainly aimed at offline teaching, and the integration of online and offline also requires a corresponding evaluation system to assess students' online performance. Therefore, it is necessary to build a diversified evaluation system suitable for the integration of online and offline teaching, guarantee the teaching quality and stimulate students' enthusiasm to participate in teaching. In addition to traditional assessment methods such as attendance, class performance, online quizzing, online interaction, group task completion, response times, homework and offline final exam can also be included in the assessment indicators. Pay attention to online and offline comprehensive evaluation and process evaluation, so that students can master the knowledge and promote the development and progress of students' learning attitude, innovative thinking, learning cooperation, communication, and communication ability.

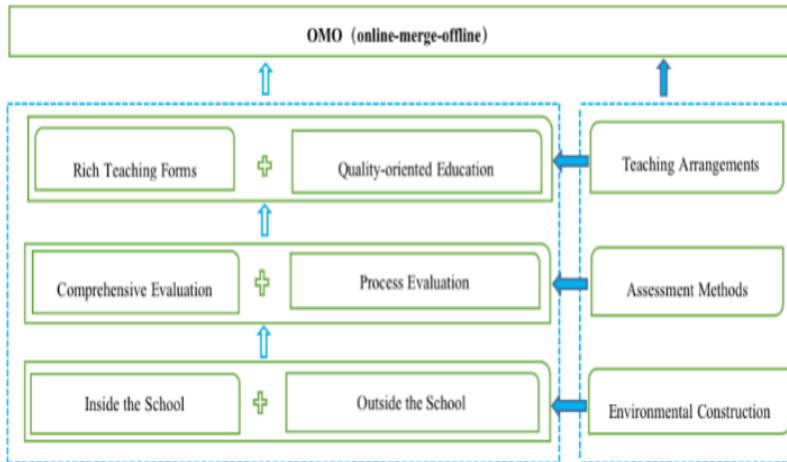


Fig. 1. The Construction of OMO Pattern [owner-draw picture]

4.3 Strengthen the Coordination of Resources Inside and Outside the School

On-campus online education has high-quality teachers and high-quality teaching, while off-campus online education has advanced technology equipment as well as a research and development team. In view of the existing problems, the model of OMO has become the general trend of complementing the advantages of both inside and outside the school to jointly promote the progress of online education. On the one hand, the administrative departments of education guide, supervise, and categorize off-campus online education. In combination with the real needs of students, parents, and society, the school shall introduce online education platforms or courses provided by off-campus education and training institutions appropriately through a market competition mechanism with counties and districts as units. Meanwhile, it is necessary to increase the supervision and management channels of training institutions and related enterprises, improve the modern level of education governance, crack down on the chaos existing in the off-campus online education industry, and ensure the orderly progress of education. Off-campus online education platforms, on the other hand, also need to play their own advantages to take the initiative to push high-quality teaching resources to schools. Enterprises can meet the new demand for online education in schools by developing intelligent lesson preparation systems and intelligent classroom systems, constructing intelligent education assistants, intelligent learning engines, 5G network interactive situation education mode, and other ways. In this way, the whole scene of "AI+ education" that connects schools, teachers, and students can be integrated. It can help teachers realize wisdom and innovative education and teaching so that teachers and students can reduce the burden and increase efficiency. With the deep integration of artificial intel-

ligence, big data, and education, the enterprise continues to increase its product technology, improve educational informatization services, and develop off-campus online education into school services.

5 Conclusion

As an important service form of future education, the high-quality development of online education should not only focus on solving the current key problems, but also adapt to the future-oriented education system [8]. OMO mode integrates online and offline advantages and becomes a new direction of the development of online education. Combined with the current background, explore new ideas to build OMO mode. Firstly, innovate the arrangement of teaching methods and content, and strengthen the overall education with students as the center through teachers' active guidance and scientific content arrangement. Secondly, a comprehensive evaluation system should be established to adapt to the OMO teaching mode. Online and offline assessments should be integrated to comprehensively assess students' abilities and ensure the quality and effect of teaching. Finally, the school actively seeks cooperation with external institutions, which actively play their advantages to provide technical support and services for the school. Integrate excellent resources to provide a good environment and platform for OMO mode. In the face of the development of the post-epidemic era, the construction of OMO mode should be promoted from the above three aspects to deepen the development of OMO teaching mode and constantly promote the reform and innovation of online education.

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