# Research on the Application of Online Teaching in Higher Vocational Colleges During the Epidemic Fighting Period from the Perspective of Information Literacy

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**ABSTRACT.** *According to the requirements of the epidemic prevention and control, to ensure the safety and body health of teachers and students life and fight the virus invasion campus aggregation epidemic,the Ministry of Education on February 4 issued the guidance to the online teaching organization and management of higher learning during the epidemic prevention and control, in order to make relevant online teaching arrangement and instruction to keep teaching classes not been suspended in higher schools.But owing to the suddenness and limit by the objective environment, schools,teachers and students can not adapt to this change in the process of the implementation of online teaching. Due to the training demands, the students' learning characteristics and teaching resource accumulation, the application of online teaching is more complicated in higher vocational colleges.On the basis of the recent teaching feedback and teaching operation preparatory weeks, the paper points the outstanding problems of online teaching in higher vocational colleges during the epidemic period. From the perspective of information literacy training to teachers and students, the paper summarizes and analyses the application of online teaching in higher vocational colleges, then puts forward corresponding proposals.On one hand, it aims at providing relevant reference to the improvement of the subsequent development for online teaching system; On the other hand, the online teaching experience in the special period can be utilized to promote the cultivation and improvement of information literacy of teachers and students.*

**KEYWORDS:** *information literacy, online teaching, higher vocational colleges, epidemic prevention and control*

## 1. Introduction

In order to implement the important instructions of General Secretary Xi Jin Ping on winning the war of controlling the epidemic, and to decrease the impact of the new coronavirus pneumonia on the opening date and teaching curiculum in colleges

and universities, and in accordance with requirments brought up in The Virus-Clearing Plan of the Leading Team of Ministry of Education's (Trial) on the organization and management of online teaching in colleges and universities during the epidemic prevention and control period, the government should guide the work of colleges and universities, and the whole society should participate in the virus-controlling work. This is to ensure the normal teaching agenda of colleges and universities during epidemic prevention and control stage. All colleges and universities should make full use of the online MOOC and the provincial and school-level high-quality online course teaching resources, and with the support of the MOOC platform and experimental resource platform services, with the help of various types of online course platforms and campus networks Learning platforms, etc., actively carry out online activities such as online teaching and online learning, to ensure the teaching schedule and teaching quality during epidemic prevention and control, and to achieve the goal of "no suspension of classes". As of February 2, 2020, the Ministry of Education has organized 22 online course platforms and developed a variety of online teaching solutions. It has opened 1,291 national quality online open courses and 401 national virtual simulation online experimental courses and lots of other courses for free, a total of more than 24,000 courses, covering 12 subject categories in undergraduate education and 18 professional categories in higher vocational education, for colleges to choose and apply [1].

According to the actual situation of the accumulation of existing teaching resources, colleges and universities, combined with its talent training programs and curriculum requirements, quickly formulate corresponding online teaching organizations and implementation programs, which are basically divided into the following situations and corresponding measures: 1. For the situation that course resources can be found in the online course platform, the corresponding course resources are directly selected for online teaching according to the requirements of the course content and the degree of conformity; 2. For the case where the corresponding course resources are not available on the online course platform, teachers make their own Course materials recorded and broadcasted or live broadcasted for online teaching; 3. Explaining key to online questions based on the feedback of online teaching. However, this sudden change in the teaching mode in response to the sudden outbreak of the virus has caused schools, teachers and students to show varying degrees of discomfort at the beginning, showing that the participants of the teaching activities lack the experience of applying the online teaching mode and technologies. As higher vocational education is the main component of online teaching during the epidemic, the problem of applying online teaching mode is more prominent. Higher vocational education takes the cultivation of high-quality skilled professionals in the production, construction, management and service industries as its fundamental task. Its curriculum design and teaching model focus on the cultivation of practical skills. Influenced by factors such as geography, materials, and network conditions, the guarantee of course quality is the challenge faced by the online teaching model during the epidemic. On the other hand, the learning behavior of students in higher vocational education has obvious individual differences, which also increases the difficulty of online teaching management. In order to better implement online teaching, and to optimize the

application of online courses, we carried out a survey and gathered the feedback of actual use of online teaching mode, statistics of students' ideas on hot issues related to online teaching is shown in Figure 1.
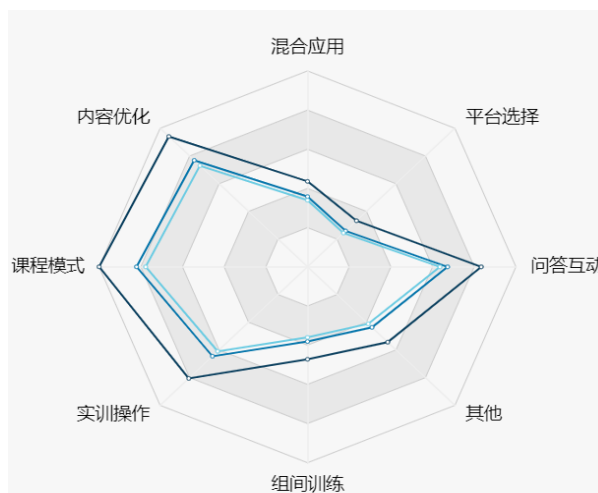


*Figure. 1 Statistical diagram of the focus of students' online courses*

## 2. Outstanding problems of online teaching in vocational colleges during the epidemic prevention and control period (feedback)

(1) The selection of online course platforms are varous

During the beginning trial week of online teaching, the most heated and prominent issue pointed out by teachers and students is that the online resources of different courses were distributed on different network platforms, which mainly include Zhidao, Chinese university MOOC, Xuexitong, UOOC, Zhihui Vocational Education, etc. Teachers who teach more than two courses need to log on to different platforms to prepare lessons, and students need to download a variety of different online platforms to study different courses, resulting in cumbersome operations for teachers and students. It is also easy to cause confusion in the online teaching process.

(2) The operation of online teaching is not smooth

1. Restrictions on hardware conditions

In the traditional offline teaching mode, teachers' teaching activities tend to be timely and interactive. Affected by their habits, for online teaching, teachers and students also hope to use timely and interactive communication methods in the interaction. However, because online teaching is restricted by hardware conditions such as the speed of network speed, the interactive communication in the webcast teaching mode is not timely and smooth. Therefore, in order to solve the problem of

teaching content, teachers also need to establish an online chat group for teacher-student interaction and feedback after class. But at the same time, due to the different usage habits of teachers, the network platforms used to establish online chat groups are also different (mainly including: WeChat, QQ, Dingding and other social software), which increases the operational burden of teachers and students;

2. The repeat of teaching content is inconvenient

In order to ensure the duration and fluency of the course, the online course generally adopts a coherent mode. If the student cannot understand the key and difficult parts of the content at once, the student may try to review the content, which requires students to constantly operate the progress bar of the teaching video. On the one hand, the dragging operation of the progress bar will be affected by the network speed, resulting in unsmooth video playback; on the other hand, in order to prevent students from operating the video progress bar, some platforms have disabled the operation function of the video progress bar. For teachers, whether they choose to use the existing online teaching resources for teaching or live online teaching, when they need to emphasize a certain idea, due to various limitations such as personal experience and platform functions, they cannot timely strengthen the key content or insert independent operation demonstration.

(3) The quality of online teaching is difficult to be guaranteed

Ensuring the quality of teaching is fundamental to all forms of teaching. However, no matter whether it is online teaching resources using online platforms or live teaching online, because of the constraints of internet-lag and space, it is difficult for teachers to grasp the learning status of students, and the teaching management of online courses cannot be effectively implemented [2]. The above problems increase the difficulty of ensuring the quality of teaching.

(4) Practical training courses cannot be carried out

Higher vocational education focuses on strong professionalism and applicability, so when formulating curriculum and talent training programs, more emphasis is placed on the application of professional training. Since the training courses are generally set in the relevant training venues and require corresponding training equipment, affected by the epidemic situation, the teaching of the training courses is still subject to restrictions brought about by various conditions. Because of the strong applicable and practical characteristics of the training courses, the training courses cannot fully copy the online teaching mode of the theoretical courses, and need to be explored and developed according to the characteristics of the training courses on the online teaching mode of the theoretical courses [3].

## 3. Analysis of online teaching applications with information literacy as the starting point

"Information Literacy" means the adaptability to the information society. The concept of information literacy was proposed by Paul Zekos, chairman of the Information Industry Association in the United States in 1974. It covers three levels-

cultural level (knowledge aspect), information awareness (awareness aspect), and information skills (technical aspect) , which can help people judge when information is needed, know how to obtain information, and how to evaluate and effectively use the required Information [4], so the cultivation of information literacy is also a cultivation of comprehensive application ability.

In the state of epidemic prevention and control, colleges and universities should follow the Ministry of Education's online teaching guidance. During this period, how to complete online teaching with high quality is not only the key issue explored in this article, but also the aim for the following important work of the online education system in development. There are many ways to improve the effect of online teaching, and the most effective one is to use problem-oriented teaching stratege. That is to say, the learning of each part of the content should be centered on letting students solve problems or figure out what to do, rather than simply let students learn some part of the subject content through online courses, and use mechanized mode of cognition to form only short-term memories. Online learning emphasizes problem-oriented rather than subject-oriented (Discipline-oriented, Subject-oriented). This teaching concept reflects student-centered and truly stimulates students' attention, speculation, criticism and other learning modes [5]. The motivation and focus of the teaching concept are consistent with the core content of information literacy, and both emphasize the necessity of a clear viewpoint, and secondly, explore and derive solutions and implementation methods for the generation of problems. Based on the consistency of the above two concepts, the application and exploration of online teaching in vocational colleges during the fight against the epidemic will be carried out from the perspective of information literacy.

## 4. Measures for improving online teaching in vocational colleges during the epidemic situation from the perspective of information literacy

(1) Unified online course platform

In view of the above-mentioned online teaching courses, the selection of too many platforms leads to the problem of cumbersome operations. In the follow-up improvement stage, as much as possible to combine the school's online teaching conditions and the teachers' online teaching platform experience, a unified online platform for course development and production should be recommended. When choosing such a recording or live broadcast platform, three functions must be taken into consideration: 1. Whether the platform has sufficient capacity, can it solve the problem of interactive lag caused by internet lag, so as to answer students' questions about the given content in time, and avoid teachers the increased management difficulty due to the establishment of too many online chatting groups; 2. Whether there is an "insert" function in the online teaching process, such as: litchi micro-class platform. The platform can insert a video into the mian window to explain the key knowledge in detail while students watch the video of the main window of the teaching. If students encounter some difficult key knowledge that they fail to conprehend at once during the learning process, they can repeatedly watch the

inserted video while the teaching video in the main window will be automatically paused, without affecting the overall progress of the given content; 3. Whether it has a message function, mainly for after-class Q&A section and classroom teaching to fill in the gaps.

(2) Adopt question-based and task-based teaching strategies

In order to better cooperate with off-line teaching, the selection of online teaching content in the normal period should be biased towards extracting the major and difficult points of the course, to provide assistance for each learning period before, during and after the classroom. Facing the sudden situation of epidemic situation, the possibility of producing corresponding comprehensive teaching resources in a short time is not high. At this time, you can refer to the daily online resources to produce online resources, starting from the difficult points of the teaching content, adopting the question-based and interactive teaching strategy to capture the students' attention and strengthen the frequency of online classroom interaction at the same time. Combining the requirements for the judgment, acquisition and application of the required information in the content of information literacy, relevant topics and projects are presented in the content of each lesson, and students are encouraged to complete these tasks independently or in group cooperation. This allows students to experience the information acquisition process, think about the way to solve the problem, and advance the teaching according to the students' completion of the tasks [6]. Question-based and task-based teaching can connect teaching and learning more closely, and can stimulate students' online learning to a certain extent while taking into account online teaching classroom management.

(3) Practical training courses: mindmap training and coach-style review

Due to the epidemic situation, the training site and the school-enterprise cooperation base are in a state of suspension. Except for small daily manual tools and practical equipment, large-scale machinery and equipment cannot be easily accessed by students. For this reason, the teaching of practical training courses still needs to be compensated by using offline courses after the outbreak. The online teaching mode of practical training courses is different from that of theoretical courses. Teachers should pay attention to both students' training ideas and the key steps of students' operation. From the perspective of information consciousness and information skills in information literacy—use information acquisition for organic integration, review evaluation and effective use of required information, teachers should guide students to use network platform resources such as X-mind, WPS, etc. To mind map the training process, in the process of making the mind map, students can analyze and sort out the actual training process to help students strengthen ideas for the operation process [7]. Teachers can interact with the student in the online teaching. Offering stutents guidance during their training process, which can deepen the students' impression of the training content and help students map out the training ideas. On the one hand, the interactive process can exercise students' ability to analyze and use information, on the other hand, it can help cultivate and improve students' information literacy.

## 5. Conclusion

The practice of information technology to promote the reform of education has gradually taken shape and reached a new critical point. In the face of the outbreak of the new coronavirus, the application and upgrade of online teaching information technology brings both challenges and new breakthrough opportunities. The development of online teaching will not only promote the improvement of teachers 'skills, but also promote the development of education methods and promote the reform of education itself [8]. Judging from the current achievements, the conditions for promoting the technological foundation of education with the transformation of information technology are basically available, but the thinking patterns of teaching and learning of the participants in online teaching and their ability to apply and process information and use information technology need to be improved simultaneously. The cultivation of information literacy of teachers and students is particularly important at this time. Therefore, from the perspective of information literacy, with the help of multi-dimensional forces during the epidemic prevention and control period, teachers should improve the quality of their online courses under such an unprecedented opportunity. At the same time, teachers must adapt to the current situation of online teaching in the epidemic stage and promote the construction and improvement of teaching resource database of school of all levels.

**Brief introduction:**

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