

Exploration of Teaching Mode of Virtual Live Broadcast Combined with Remote Practical Training in Higher Vocational Education

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Abstract: This paper analyzes and discusses the teaching mode of virtual live broadcasting combined with remote practical training under the background of higher vocational education, and analyzes and expounds the innovative development direction and important construction contents of the teaching mode of higher vocational education from the aspects of high-quality online open course construction, the promotion of teaching based on online simulation and practical training platform, and the construction of teaching atmosphere based on virtual live broadcasting. It aims to combine the physical classroom with the virtual classroom relying on virtual live broadcast and remote practical training, combine the traditional teaching mode with the network teaching mode, and promote the overall improvement of teaching quality.

Keywords: Higher vocational education; Virtual live broadcast; Remote practical training; Teaching mode

Introduction

The continuous development of modern network technology has brought about profound changes in people's learning styles, and the development and innovation trend in the field of education and teaching has been increasingly intensified. Vocational colleges actively explore the teaching mode, combine the physical classroom with the virtual classroom relying on virtual live broadcast and remote practical training, and promote the combination of traditional teaching mode and network teaching mode, so as to realize the comprehensive improvement of teachers' teaching quality and students' learning effect.^[1]

1. Construction of high-quality open online courses

Relying on virtual live broadcast, we will promote the active construction of online open courses. Vocational colleges can try to build online open courses for mechanical and electrical engineering majors based on the pan-ya platform, such as CNC milling processing technology. In this process, the active combination of blended teaching mode and ubiquitous teaching mode is realized, so that the constructed network teaching platform can fully reflect a series of functions such as teaching interaction, quality course construction, resource management and teaching management evaluation. During the course virtual live teaching, we strictly follow the current professional standards for mechanical and electrical engineering, make clear requirements for the operation skills of CNC milling machining centers, strictly follow the basic principle of gradual progress, and carry out teaching activities from shallow to deep to ensure that the teaching work can be carried out in accordance with the cognitive characteristics and psychological characteristics of students, and promote the cultivation of skills. Also taking the course construction of CNC milling processing as an example, under the task-driven background, multiple teaching modules^[2] are set for project development to ensure that each module has relevant micro-class teaching resources as a reserve, and strive to meet the teaching needs with short and concise micro-class teaching materials. Teachers can try to rely on micro-lesson resources to decompose the knowledge points of the project, especially for the numerical control milling processing operation skills to carry out demonstration explanation and operation, the original relatively abstract operation technology application into a more graphic way to present in front of students, and micro-lesson resources can be convenient for students to watch and

review anytime and anywhere, so as to achieve the teaching effect of twice the result with half the effort. In addition, under the effect of virtual live broadcasting and online open course teaching methods, the traditional classroom of mechanical and electrical engineering can be optimized, stratified teaching and one-to-one teaching can be carried out, and the vocational skills examination question bank of mechanical and electrical engineering can be effectively connected, which is convenient for teachers to use the question bank resources to carry out a comprehensive assessment of students' learning. During the teaching of online courses provided by virtual live broadcasting, students majoring in mechanical and electrical engineering need to follow the relevant requirements of the intelligent learning guide system, complete the teaching tasks one by one, and carefully watch the micro-course resources while completing the teaching inspection. The students' mastery of relevant knowledge content is comprehensively evaluated from the two aspects of theoretical knowledge mastery and practical operation skills. During this period, the virtual simulation training platform is used to ensure that the relevant parts programming and processing operations are effectively implemented.

2. Rely on online simulation training platform to promote teaching

Under the background of school-enterprise cooperation, mechanical and electrical engineering majors in higher vocational colleges can try to build a virtual simulation training platform to promote the development and improvement of students' comprehensive practical skills. In the context of school-enterprise cooperation, enterprises and higher vocational colleges can try to cooperate jointly to build a practical training platform in line simulation. Combined with the training needs of mechanical and electrical engineering professionals, the virtual training platform can try to simulate lathe processing and operation with three-dimensional graphics technology and machine tool simulation technology, on this basis to ensure that students can fully simulate the operations of real machine tools, and can intuitively present their own programming results. Help students find problems in programming in time and actively debug. By building a virtual simulation training platform, we can ensure that students majoring in mechanical and electrical engineering can establish a perceptual understanding of CNC machining and repeatedly participate in CNC machining simulation operations. In particular, the system can identify and judge the problems that are prone to CNC machine tool machining, and guide students to correctly deal with a series of problems such as CNC machine tool machining accidents and serious machine tool wear. To achieve the purpose of promoting the quality and level of teaching. At the same time, mechanical and electrical engineering students in the process of operating CNC machine tools, with the help of online open course micro-course resources, follow the teacher's demonstration operation gradually complete the CNC machine tool operation task. If there is still a problem, you can try to find the corresponding troubleshooting micro-lesson resources to effectively simulate the troubleshooting operation. The problem of time-consuming in the real operation of CNC machine tools is solved by means of virtual practical training. At the same time, relying on the online virtual simulation training platform, students can correct mistakes in a timely manner under limited time, and solve the problem that there are fewer teachers and more students in offline practical training, and it is difficult for teachers to achieve one-on-one guidance. At the same time, through the way of simulation training to promote the students' machine tool operation ability to further improve.

3. Build teaching atmosphere based on virtual live broadcast

In the development of online learning activities, how to achieve good interaction between students and students, as well as between students and teachers is a difficult topic. Although the implementation of online courses can facilitate teachers to track students' learning progress and homework completion, teachers can also carry out interactive communication based on teaching content and students' learning characteristics. However, for students in higher vocational colleges, they are still used to learning in classroom activities, and it is difficult to promote the improvement of self-control ability and self-learning ability in open online courses. Therefore, how to use a variety of ways and channels to carry out student-oriented interactive communication has become one of the issues that teachers focus on. The teaching team of higher vocational colleges can try to use Dingding platform as the starting point to carry out live broadcasting and explain the important and difficult knowledge. During this period, students can be supported to actively communicate with teachers through Lianmai, so that the interaction between students and teachers can be closer and smoother, and a very strong teaching atmosphere can be created. At the same time, Dingding platform has the function of live playback. Students can try to solve the problems and difficulties in absorbing knowledge by watching live playback in their spare time. After class, they can listen more to achieve the effect of digestion and absorption. And whether it is chat records, live video, or homework, the system counts the number of students and other details in real time. Teachers do not waste time to arrive and sign in, effectively strengthen teachers' comprehensive understanding of students' learning status, timely adjustment of teaching progress and teaching design.

4. Conclusion

Under the background of information technology, the comprehensive application of teaching means such as virtual live broadcast and remote practical training has become a hot development content in the field of education. In particular, for the teaching content of mechanical and electrical engineering with strong professional requirements, the simple offline teaching mode is difficult to meet the actual teaching needs. The active combination of online teaching means and offline teaching mode can take into account both theoretical and practical teaching content through mixed teaching, which poses a huge challenge for teachers. During this period, teachers need to continuously improve their own teaching ability, actively change traditional teaching concepts based on information technology, so as to better adapt to teaching methods and promote the development of integrated teaching management of online teaching courses. Taking mechanical and electrical engineering major of higher vocational colleges as an example, the construction of an online teaching mode integrating virtual live broadcasting and remote practical training has an important impact on the traditional teaching mode, lays a solid foundation for the follow-up practical training activities, and helps the rapid formation of teaching atmosphere. From this perspective, the teaching effect of this teaching mode plays a very important and precise role. It deserves the attention and attention of teachers and students.

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