

A teaching optimization model based on SPOC for communication basic courses of vocational and technical education

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Abstract: With the rise of MOOC, SPOC and other new online education models, information-based education has become an inevitable trend in the development of higher education. In this paper, combining with the characteristics of vocational and technical schools and online education will be integrated into the traditional classroom, study a SPOC based vocational and technical education foundation course teaching optimization model, in order to "communication technology" course as an example to carry on the practice, the results show that can give full play to the guiding role of the teacher, the main body of stimulate students learning motivation, effectively improve the quality of teaching, It can be used as a reference for the promotion of colleges and training units in China.

1. The introduction

Vocational and technical education is the main platform to cultivate high-quality technical talents, with the deepening of the new round of education reform, cultivate the students ability of active learning is a teaching model reform of the trend of The Times, so many schools began to vigorously promote the network teaching application system, network education platform of network courses, such as micro class all-round education resources construction. For example, there are nearly 200 MOOC courses on the "Online Course Learning Platform" of Tianjin Vocational and Technical College, including some basic courses of letter major. However, from the perspective of vocational and technical education itself, the network courses of Dream Classroom are not ideal in terms of course teaching, helping students to learn and stimulating students' interest in independent learning. Meanwhile, it does not have the conditions of resource integration and cross-regional education. How to better study and use advanced teaching means and ideas to improve the teaching quality of vocational and technical education needs constant exploration and practice.

2. Advantages of SPOC teaching optimization model in vocational and technical education

2.1. Disadvantages of traditional network teaching mode

The survey found that the main reasons for the poor teaching effect of the current online education platform include: first, many students are not used to using the online education platform to assist learning, and they reject the new teaching methods to a certain extent; Second, the existing courses of the current network platform are inconsistent with the actual teaching requirements of students. Taking the basic courses of information major as an example, the online courses of other colleges and universities are too difficult, and the content arrangement does not adapt to the teaching level of vocational and technical education, making it difficult for students to learn. Third, the current online learning platform is a public and open platform, which lacks the interaction mechanism with teachers of the major. Therefore, it is impossible for teachers to collect the data of online learning of students of the major and answer questions online. Fourthly, the student management mode of vocational and technical education is still the main obstacle to the realization of network assisted instruction.

2.2. The concept and advantages of SPOC teaching optimization model

In order to enrich teaching methods and solve the problems of web-assisted teaching at the present stage, under the background of our school's efforts to build a smart campus, Combined with the characteristics of vocational education and basic courses of information specialty and the MOOC teaching mode, this paper proposes a research project on the optimization of small-scale restricted Online Course teaching mode based on SPOC(Small Private Online Course). This teaching optimization model can be summarized as a teacher-led, student-centered online and classroom synchronous learning teaching model. The online teaching content is based on the teaching plan of vocational and technical education students of this major, and the learning content of the course is highly condensed into online courses as synchronous learning materials for students. The length of each class is compressed from 45 minutes to 20 minutes, and students use their own fragmented time to complete the re-understanding and re-absorption of classroom knowledge online. At the same time, SPOC optimized teaching mode has the characteristics of small scale of teaching objects, close to the teaching objects and limited access, which can precisely solve the difficulties of vocational and technical education major, such as fewer students in teaching classes, weak cultural foundation, strict daily management and limited access to the Internet. Teachers can rely on the campus Intranet or the military network teaching platform to carry out SPOC optimized teaching mode, students can implement online learning with the help of smart campus terminals, and establish communication channels between teachers and students through technical means. By establishing a forum for course discussion and setting online tests and other forms, teachers can master the acceptance degree of vocational and technical education students through data collection and adjust offline classroom teaching strategies in time. The teaching optimization model can effectively solve the current vocational and technical education information major basic courses difficult to understand, some students can not keep up with the pace of the classroom, lack of repeated learning teaching means, lack of teachers and weak teaching guarantee and other prominent problems.

3. Implementation process of SPOC teaching optimization model

SPOC teaching optimization model is a teacher-led, student-led online and classroom synchronous learning teaching model. SPOC teaching optimization mode cannot continue to use the traditional infusing teaching method. Take the teaching of "Fundamentals of Communication Technology" as an example. Due to the high theoretical depth of "Fundamentals of Communication Technology", the teaching is arranged in class according to the curriculum implementation plan. Mathematical deduction, the original rational strong, dense needs repeated part for classes, students via the SPOC teaching platform, and carefully set up problems in the process of video playback, set aside the answer window, let the student in the online teaching with the dynamic interactive learning, communication, group collaborative learning, video set viewing mode for many times, Students can use fragments of time to learn repeatedly. It through the way of online content through the connection, that teachers in classroom teaching on the one hand can let students acquire offline learning situation, on the other hand also facilitate teachers and students to disabuse face to face, and the network curriculum part into classroom teaching can efficiently save all the lessons, with network resources complement a teacher can be compressed in the class will be complex principle teaching process, Vocational and technical education students who want to master this part of the content can conduct repeated and in-depth study through online courses. SPOC teaching optimization mode enables the whole course to be carried out online and offline simultaneously according to the teaching plan. Meanwhile, teachers can also test students, ask questions and discuss online through the SPOC teaching platform, increasing the interaction between teachers and students.

SPOC teaching platform includes five modules: resource construction, teaching preparation, teaching implementation, learning evaluation, teaching management. Resource construction includes some resource management, such as knowledge management, video, test questions and so on. In the teaching preparation stage, I defined the basic information of the course, sorted out the knowledge

points of each lecture, recorded micro-lesson videos for the key and difficult content, prepared test questions and other information, released the prepared materials on the platform, and completed implementation plan management and teaching content production. In the teaching implementation stage, students flexibly arrange teaching plans according to their free time during a course, and complete video learning, questioning tasks and interactive links.

Tasks students need to complete in the online teaching stage:

(1) Learn the self-study content arranged by the teacher in the online course module, and complete the self-test exercises of each section;

(2) Take notes of learning experience and difficult tasks during self-study;

(3) Record what you don't understand in the learning process and ask the teacher for advice;

(4) Check the questions raised by other students and the answers given by the teacher.

Tasks that students need to complete in the learning stage:

(1) Finish the homework assigned by the teacher;

(2) Ask the teacher questions;

(3) Browse the questions raised by other students and teachers' answers, and put forward their own views;

(4) Browse teaching forums and participate in teaching discussions;

4. Analysis of key problems in the implementation of teaching optimization model

According to student's questionnaire after the feedback and course evaluation of the overall results, there are more than half of the vocational and technical education students think the optimization mode model can effectively stimulate the learning enthusiasm of the students, give students sufficient space, increase the opportunity to ask students and teachers to communicate, discuss, question, the effective complement to classroom teaching content. At the same time, this kind of teaching mode combines the successful teaching experience of online and offline teaching at home and abroad with vocational and technical education and the special environment of military academies, and focuses on students' independent ability learning while solving the problems of cross-regional teaching and teaching interaction. Of course, there is still a long way to go in the implementation and development of the teaching optimization model. In order to effectively combine the teaching optimization model with vocational and technical education, the following points need to be done:

(1) Teachers' awareness and ability

To carry out SPOC teaching optimization mode in the process of vocational and technical education, teachers should have a high sense of responsibility and mission, actively learn new teaching concepts, methods and means in the new environment and new situation, actively adapt to the network teaching mode and explore how to use online teaching to assist classroom teaching. Secondly, in the production of teaching resources, extensive research and careful design should be carried out to cover the key and difficult points of students' classroom learning. When recording the video, students should follow the principle of short and concise, attractive and appropriate difficulty so that they can take the initiative to learn offline and fully absorb it. In addition, efforts must be made in classroom teaching. Traditional teaching methods cannot be separated from online and offline teaching. By using a variety of teaching methods such as flip, discussion and problem driving, online and offline advantages complement each other to achieve better teaching results.

(2) Students' motivation and maintenance

The most critical step in carrying out SPOC teaching optimization mode is to let students complete online learning tasks assigned by teachers independently and with high quality. Due to the lack of effective supervision in online teaching, it is difficult to give play to students' subjective initiative, so it is necessary to cultivate students' strong self-discipline and thirst for knowledge in course teaching. To achieve this goal, you need to do two efforts, on the one hand, by optimizing the online teaching content, the recording is close to the teaching content and have fun teaching video, from two angles of attractive and practical students subjective initiative, in complete online teaching content can be done at the same time learning gains; On the other hand by teachers in the evaluation quality of online

learning task to complete, fully integrated into the students from the perspective of system specifications and system to question interactive online learning quality, test results and statistical data, and data aggregation in the final grade evaluation, thus introducing competition mechanism, by introducing the copying or independent learning mechanism to further stimulate students interest in learning.

(3) Ideological innovation and policy support

SPOC teaching optimization mode adds some teaching links on the basis of traditional classroom teaching, so the classroom content and online content need to be optimized. At the same time, teachers need to master the necessary software editing, video recording and other multimedia means to adapt to the new teaching mode while updating the teaching concept. Therefore, managers should organize teachers to participate in relevant business training, encourage teachers to design and produce more online high-quality courses, and give relevant personnel policy treatment based on the course results, so as to encourage teachers to conduct in-depth research on teaching content innovation and carry out online courses. In addition, in order to vigorously promote online classroom development, school administrators also need to give full support to network facilities and students' self-study time, such as the popularization of military network campus network terminals to students' dormitories, and the opening of teaching buildings and computer rooms during self-study time, so as to ensure that students have enough time to complete online learning tasks.

5. Summary and outlook

By means of this teaching optimization model, new ideas are gradually explored to solve the problems of the existing basic courses of vocational and technical education, such as poor teaching effect, low quality, single form and passive students, forming effective classroom teaching construction theory suitable for vocational and technical education personnel training. This teaching optimization model can provide reference for promoting the teaching mode reform of vocational and technical education colleges and training institutions. On the basis of extensive information construction, it points out the direction for reforming and innovating the classroom teaching mode of vocational and technical education.

References

- [1] Wang Bin, WANG Bingzhong, Hu Xinsheng. Modern Vocational Education,2021(33):152-153. (in Chinese).
- [2] Zhao Wenfei, ZHOU Gang, Liu Xiaolei. Research on the Feasibility of SPOC Hybrid Teaching Mode in Higher Mathematics Classroom of Military Academy [J]. Education and Teaching Forum,2020(12):282-284.].
- [3] Jingjing Chen, Jinqun Wang, Kefeng Huang, Caicai Xu. Research on mixed teaching mode of Military Academy based on SPOC+ Rain Classroom [J]. Science and Education Literature Review (Mid-day),2018(03):60-62.
- [4] Chen Z. Application and thinking of flipped Classroom based on data analysis in College Chinese teaching of military academy -- Taking Army Special Operations College as an example [J]. Chinese Character Culture,2017(18):25-27.].
- [5] Zhang Min, Yuan Tian, Yang Dan. Thinking on the application of micro-lesson in higher mathematics teaching of vocational and technical education [J]. Road to Success,2017(19):50.