

Research and Practice on Micro-course Teaching of Computer Courses in Vocational Colleges

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Abstract: With the advent of the information technology era, all walks of life are undergoing reform and innovation under the impetus of "Internet +". Education reform in the Internet+ era is also imperative. With its "short and fine" characteristics, the micro-course has quickly become the darling of teaching reform and resource construction. As a new form of teaching, micro-curriculum can stimulate students' motivation. Therefore, for the characteristics of vocational school students, vocational schools pay great attention to micro-courses. The micro-course is in line with the trend of teaching reform in vocational schools. The use of micro-courses in vocational colleges can improve students' interest in learning, encourage students to learn actively, and ultimately improve learning efficiency. Although the micro-curriculum contributes to the improvement of students' self-learning ability, for the characteristics of vocational students, the classrooms that use micro-curricular learning still need teachers to supervise the progress of learning.

1. Introduction

The integration of micro-courses and professional computer courses also caters to the reform needs of secondary vocational schools in computer courses, and is a promotion of the development of vocational school education. The "Thirteenth Five-Year Plan for Education Information" attaches great importance to the integration and innovation of information technology and education and teaching, paying particular attention to the effectiveness of information technology in the transformation of teaching models and the transformation of learning styles, with special emphasis on promoting students of all types. The comprehensive development and vigorous training of innovative talents. As early as the computer course reform process of secondary vocational schools in 2009, the information technology teachers put forward the teaching method of "changing the traditional teaching concept, innovating the teaching mode, changing the traditional teaching-oriented" and demanding information technology. Teachers are student-centered, giving full play to the main role of students in the process of learning activities, and fully mobilizing students' initiative and creativity in the design of classroom activities.

Enable students to develop internalization and comprehensive quality in the experience. To meet the needs of talents in today's enterprises and society. At present, in the professional computer teaching, there are still some teachers who mainly use the "teacher-centered" teaching mode. The teaching methods and methods are too singular, and the teaching content is out of line with the students' cognitive level, ideological reality and social reality. The problem is obvious. This is contrary to the spirit of the new curriculum reform. The introduction of micro-courses for vocational computer classroom teaching is an effective way to improve the quality of professional computer courses and meet the learning needs of students at different levels.

2. Problem in Computer Teaching

Non-computer major computer teaching is not worthy of attention. Vocational colleges have specialized computer majors. Their usual learning content is built around computer knowledge.

Computer technology is the focus of students' learning, so computer teaching is relatively advanced. However, most of the computer teaching in vocational colleges is faced by non-computer majors. Therefore, most vocational colleges pay less attention to computer teaching. Teachers explain computer knowledge in a step-by-step manner. They still follow the traditional single teaching mode. Paying attention to the students' practical application ability, most of them only teach some theoretical knowledge. The operation course is only a simple explanation and then the students are free to operate. They will not check the students' practical ability. The students show negative and slow computer teaching, which makes computer teaching the quality is not high.

Most of the vocational colleges have not changed their computer teaching concepts. They use traditional computer teaching methods. There are two main forms of computer teaching. One is a specialized computer theory course, which does not involve practical operations. Ordinary teachers instill the computer knowledge in the whole class; the other is the combination of explanation and operation. Generally, the teaching is carried out in the computer room. The teacher performs the actual demonstration in the process of explaining the computer knowledge. The rest of the time is the student freedom. Learn and complete the operation. There are problems in these two methods. The first pure knowledge explanation is not conducive to the students' digestion and understanding of knowledge. The second is the combination of theory and practice, which enhances the students' practical ability and allows students to have theoretical knowledge through practical operations. There is a deeper understanding, but the content of classroom teaching is too much. A computer class should not only listen to the theory but also the actual operation. The classroom task is too heavy, which often makes the students exhausted, and the boring classroom atmosphere cannot stimulate the initiative of students' computer learning. And enthusiasm, the teacher's explanation ignores the subject status of students' computer teaching, etc., which makes the content of computer teaching content very much but does not reach the ideal teaching effect.

Computer teaching focuses on the practical application and operation ability. It is a discipline that emphasizes practical operation ability. However, in most vocational colleges in China, there is a serious disconnect between computer teaching and practice, because it is not a professional inspection classroom. Teachers rarely study the teaching methods. They all rely on computer textbooks to copy the textbooks. They are the indoctrination of theoretical knowledge. Some of these students may understand this. Because of the lack of practical operations to consolidate, they may forget the next lesson. There are still some students who are in the fog and look at the flowers. I don't know what the teacher is talking about. Even when it comes to the actual operation of the course, most of the teachers will give students the homework of the practice class, the students are eager to complete the homework, and rarely practice the ability to operate. This makes the computer teaching in vocational colleges flow in the form, most of the students hold the purpose of completing the credits, and the computer level is not improved in computer teaching.

In addition to professional courses, non-professional courses have different computer operation requirements for each major, but teachers often do not consider these issues. As long as they are non-professional students, the content of the explanations is the same, and the computer level of students in high school is high or low. This level of teaching method makes the computer operation ability of students not significantly improved. For students with high computer skills, the computer knowledge that teachers explain can make them feel too simple, and computer classes are a waste of time for them.

3. Innovation of Computer Teaching Mode in Colleges Based on Micro-courses

Designing different micro-courses for different students the micro-course emphasizes students' independent learning ability. Therefore, in the computer teaching of colleges and universities, micro-course teaching should be combined with students' computer learning interest. Due to the uneven computer operation level of college students, the difference in students' interest in computer learning is also very large. Based on the above mentioned questions, the application of micro-courses in computer teaching in colleges and universities should be carried out in different levels, that is, the

design of micro-course videos In the process of the process, the content is avoided in the same way, so the micro-course teaching loses the practical significance, and the traditional computer teaching is not very different, but changes a form. Computer teaching based on micro-courses should be based on the interest of different students in learning computers, and the design of micro-courses for students of different levels to learn computers. It is possible to design multiple teaching contents for students of various basic levels so that students can free choice of teaching content for your own hobbies and the need for computer learning. The micro-course video can be divided into multiple sections, such as basic knowledge and knowledge expansion. Teachers should combine the students' interest in learning and use the micro-course video to display the computer content that students are interested in so that they can stimulate their learning enthusiasm. Let students be more active and active in the process of computer teaching.

Traditional computer teaching is the combing of computer knowledge, focusing on the integration and comprehensiveness of knowledge. The micro-course video is a description of a certain knowledge point, and the learning is fragmentary knowledge. Therefore, the teaching of computer micro-teaching in colleges and universities should be the content of micro-courses is related to conventional computer teaching. For example, students have difficulty understanding certain knowledge in regular computer teaching. Teachers can make this part of the knowledge into a micro-course video, so that students can focus on consolidating this part. Content, micro-course is a supplement to the content of conventional computer teaching, which is conducive to students to deepen the mastery of computer knowledge.

The micro-course video is relatively short, usually under 10 minutes, so this determines that the content of the micro-class cannot be too much, the micro-course video pays attention to the students' self-learning ability, so in the computer micro-teaching teaching in colleges and universities, The main task of the micro-course video is to give students a clear understanding of their computer level and to understand their need for computer teaching so that students can choose the video content that suits them. In addition, the micro-course video mainly bears the purpose of answering questions for students, through communication with students, to find out the problems encountered in students' computer learning, and then use the micro-course video to answer questions for students, or Before the class, let the students learn the micro-course video independently, check the students' learning during the course of the class, and then carry out the micro-teaching in a targeted manner.

The practicality of computer teaching is very strong. It is the actual operation ability of the students. Therefore, no matter how little theoretical study, the operation ability is not good. The micro-course video has the characteristics of intuitive and visual, so in the micro-course video. It can also simulate the actual operation process, so that the teacher's computer knowledge can be explained more stereoscopically, so that students can watch the actual operation during the process of listening to computer knowledge, which will deepen the understanding of knowledge and it will not be easy to forget the knowledge.

Introducing micro-classes in computer teaching in colleges and universities is actually an innovation of computer teaching, but micro-courses cannot be limited to one form, but to achieve diversified micro-teaching. The general micro-course videos are all teachers' a certain knowledge point of the explanation is made into a micro-course video for students to watch in the classroom, but the micro-course form cannot be changed. The teacher can let the computer experts solve the questions and solve the questions for the students by video live broadcast. In the form of animation, it can attract students' attention and improve the quality of computer teaching in colleges and universities.

After the completion of the micro-teaching, the teacher should let the students summarize the key points of the micro-course involving computer knowledge and exchange their opinions and opinions. In addition to the establishment of the evaluation system, this is also an important part of the computer micro-teaching teaching, what is the student's learning situation, by learning the actual level of computer operation, this is the need for teachers to test, so in the computer in each period of teaching, teachers should strengthen the detection of students. On the one hand, students can discover their own deficiencies, and then select the video content of computer micro-courses to enhance their

own ability. On the other hand, teachers can pass the test results understand the computer learning results of students during this period, find the difficulties of students' learning, and can appropriately adjust the teaching plan to teach students the computer knowledge and the weak links of operation.

4. Design Principles of Microteaching in Vocational Colleges

“Short and fine” is the most prominent feature of the micro-course. The teaching content selected for micro-teaching should be clearly defined and targeted, and should be explained in detail around a specific knowledge point or teaching activity. Although the content of micro-teaching is small, each micro-course should have its complete teaching system. Teachers need to carefully design the teaching content. Psychologists have shown that any intentional attention cannot last more than 20 minutes. In order to maintain intentional attention, the micro-classes that modularize knowledge are more conducive to students' absorption of knowledge. The micro-course video is generally controlled within 10 minutes, and the time setting of the micro-course video is more in line with the attention of students in secondary vocational schools. The micro-curricular modularization of knowledge is more conducive to the understanding and absorption of knowledge by students in secondary vocational schools. The students in secondary vocational schools are in adolescence, lively and active, and it is difficult to maintain a high degree of attention for a long time. The micro-courses meet the learning characteristics of students in secondary vocational schools and can meet the learning needs of students of different levels.

Psychologists have confirmed that the combination of audiovisual and audio can expand the information processing capacity of working memory and enhance the working memory efficiency, reducing the cognitive load of working memory. Therefore, in the teaching design of micro-courses, the information transmission method combining audio-visual should be adopted. The information should be transmitted by means of special symbols, sounds, animation effects, mind maps, etc. For more important knowledge points, it should be adopted. The refinement of the prompt text and the vivid animated image simultaneously explain the content of the voice-over, which helps the professional students to understand the abstract content, and has a certain help for the professional students to master the computer-related knowledge. In the micro-course teaching design, some simple problem-related interactive links should be set up, which is conducive to improving students' attention and mobilizing students' enthusiasm. It can better mobilize students to participate in teaching, which helps to improve students' interest in independent learning. Micro-teaching using the principle of interactivity can improve the learning interest of students in secondary vocational schools and stimulate students' inner learning potential.

5. Design of Teaching Methods for Computer Courses in Vocational Colleges

According to the characteristics of vocational students, the author uses the anchored teaching strategy to carry out the teaching of professional computer courses. The anchored teaching strategy based on constructivism emphasizes that students should construct meanings of the knowledge they have learned. The main purpose of the anchored teaching strategy is to enable students to generate learning needs in a complete and real problem background, and to learn through group learning, with their own active learning, inquiry, and personal experience from identifying the target to raising and reaching the goal. The whole process. The use of anchored teaching strategies is conducive to cultivating students' ability to learn independently and to think independently. It is conducive to cultivating the ability of students to collaborate and learn to solve problems; it is conducive to cultivating students' information literacy. The anchored teaching strategy includes five parts: creating situation, identifying problem, self-learning, collaborative learning and effect evaluation.

Classes that use micro-courses to assist in computer teaching should focus on problem setting. The problem setting should follow the principles of the recent development zone to ensure the initiative and enthusiasm of the students. Avoiding the difficulty of setting up the problem, causing the professional students to fear the learning content, thus losing the interest of learning, resulting in the

weakening of learning motivation. Creating problem situations and implementing heuristic teaching for students is conducive to stimulating the motivation of vocational students and improving the enthusiasm of vocational students.

In the process of using micro-class assisted computer classroom teaching in vocational colleges, teachers should design learning task books that are compatible with micro-class learning. Students are provided with detailed task lists when they are learning micro-study so that students can clearly understand their learning goals, know what to learn, and what level of learning. The study task book provides students with a clear learning task, and learning with tasks will make learning more efficient. Without a clear learning task, many professional students will face not knowing what to learn, which will reduce learning efficiency. If there is no task book, the teaching method of using the micro-course for self-learning will not achieve the expected teaching effect.

In the class, teachers provide students with micro-course videos to assist students in computer classroom teaching, as well as matching learning tasks. Let students learn independently by watching the video of the micro-course, and complete the corresponding questions in the study task book. For unsolved problems and confused knowledge points, you can repeat the micro-course video viewing and learning according to your own needs. Students can control the progress of the micro-course content according to their own learning progress, and the auxiliary learning of the micro-course video will be there is no inconsistency between the students and the teachers in the traditional classroom.

In the computer classroom that uses micro-courses to assist teaching, students are divided into several groups. Each group has a fixed group name, which forms a learning relationship of “mutual assistance within the group and competition among groups”. After the teacher issues the study task book, the students first complete the matching task book by watching the micro-course video on their own, and carry out the study task book for the inter-group discussion and mutual help for the problems that have not been solved after repeatedly watching the micro-course video. Through this group collaboration, students can develop collaborative learning skills and develop students' team awareness.

After observing the students to watch the video teaching of the micro-course, the students independently judge the speed of the learning task book to judge the mastery of the teaching content; through the teacher question group to observe the part of the knowledge of the students, which part of the knowledge The mastery is still not in place and needs to be consolidated. To solve the problem of teachers who have common problems with each other.

6. Strategies for Teaching Micro-Courses in Vocational Colleges

According to the survey, most of the teachers of the Digital Media College of Changchun Vocational and Technical School have played the role of the class teacher. The class of the class taught by the class teacher is more, and the workload of teaching is relatively large. Coupled with the role of the class teacher, the teacher has to deal with some trivial problems in the class every day, and the task is heavy. The school's teachers rarely use micro-courses to assist classroom teaching. Because it seems that a micro-course video of about 10 minutes is simple to produce, in fact, it takes a lot of energy and time to produce a high-quality micro-course video. The pre-production of the micro-course video requires a complete instructional design, video recording, and post-production video editing. In view of the current situation of professional teachers, heavy work tasks, and lack of micro-course production techniques, it will take a lot of time to produce high-quality micro-course videos. Professional teachers have heavy work tasks and do not have sufficient time and energy to study the design and production of micro-courses, which will restrict the development of micro-courses in vocational colleges. In today's Internet age, high-quality micro-course teaching video resources of various colleges and universities, as well as excellent micro-class works of various competitions, can be searched on the Internet. If the selected high-quality micro-courses are related to the teaching design, the teacher will save the time of micro-class design and production, and there will be sufficient time for the design of the teaching links, which will definitely help the development of micro-courses in vocational schools. .

Due to the poor self-discipline of vocational students, if they only provide micro-course teaching videos, it will be difficult for students to complete the micro-course video independently. Students should be provided with a matching study task book, telling students what knowledge they should master by watching the video and how much knowledge should be used. Giving students a clear learning goal is more conducive to the completion of students' self-learning. The study task book can play a guiding role for students to watch the video of the micro-course, let the students know what to learn and to what extent. And the teacher can understand the mastery of the knowledge of the students through the micro-class self-learning by observing the completion speed of the study task book and the completion of the task book. If the completion of the task book is good, the micro-class assisted teaching achieves the expected effect; if the task book is not completed well, the teacher should redesign the micro-course teaching video and the teaching design link using the micro-course assisted teaching, thus making the micro The teaching video of the class is better for the teaching of computer courses in vocational colleges.

7. Summary

At present, most of the researches on micro-courses in China are aimed at the theoretical research of micro-courses and the research on the production skills of micro-courses. However, there are few studies on micro-courses in teaching practice, and there are fewer studies on teaching practice in secondary vocational schools. Therefore, the author chose the practical study of micro-courses in vocational colleges as a topic, and added a research object for the study of micro-courses. After investigation, the micro-class has achieved good results in terms of student satisfaction and teaching performance. Through research, it is confirmed that the use of micro-course assisted teaching in the computer classroom of secondary vocational schools can better help students understand problems and solve problems, stimulate students' interest in learning, and cultivate students' ability of independent learning and collaborative learning. The use of micro-courses to assist computer classroom teaching reflects the main status of students, paying attention to the "student-centered" education concept. The process of students completing the teaching task book through self-learning micro-teaching video shows that students pay more attention to students' independent learning and learning. Process, not the process of teacher teaching. Through the teaching of micro-courses, the teaching efficiency of teachers can be improved, and layered teaching can be realized to a certain extent. By screening high-quality micro-teaching resources on the Internet and conducting meticulous teaching design, teachers can help micro-courses serve their actual classroom teaching and effectively solve the problem of insufficient teaching resources. Teachers must design their teaching from the perspective of students. They should design micro-courses from the perspective of students, and design the level of difficulty in micro-courses based on the cognitive level of students. The design of micro-classes should make students have pro Feelings, micro-courses should allow students to feel one-on-one individual tutoring instead of the traditional one-to-many class-level atmosphere. The teaching design of the micro-course should have a certain interest, fully mobilize the enthusiasm of students in secondary vocational schools.

References

- [1] People's Publishing House. Outline of the National Medium- and Long-Term Education Reform and Development Plan: 2010-2020 "M]. Beijing: People's Publishing House, 2010.
- [2] The second part of the development task. Education development ten years development plan (2011-2020). China Education Information, 2012 (8): 9-10.
- [3] Xiaoyang. Deepening the Teaching Reform of Secondary Vocational Education and Improving the Teaching Quality of Secondary Vocational Education - The Ministry of Education issued "Several Opinions on Further Deepening the Teaching Reform of Secondary Vocational Education". China Vocational and Technical Education, 2009 (8) : 8-10.

- [4] Hu Tiesheng. "Micro-class": A new trend in the development of regional educational information resources. *Research on electrification education*, 2011: 61-65.
- [5] Jiao Jianli. Micro-curriculum and its application and influence. *Information Technology Education in Primary and Secondary Schools*, 2013 (4): 13-14.