Construction of Higher Vocational Computer Practice Teaching Platform Based on Internet of Things

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Abstract: In the teaching process of computer majors in higher vocational education, computers are basic courses and cross-disciplinary content. Computer technology is the foundation of the development of the Internet of Things, and it is also the continuous extension and expansion of computer networks. To meet the Internet of Things era for the demand for talents, higher vocational colleges need to analyze the current lagging of the content of computer courses, and implement teaching reform and exploration. In the process of cultivating students' innovative ability, the integration of practical teaching and theoretical teaching is very important, especially in the teaching of computer specialty, practical teaching belongs to the core curriculum content. This article analyzes the basic characteristics of the Internet of Things technology, explores the main problems existing in computer practical teaching in higher vocational education, and proposes strong measures. Hope that innovation will be for students as the main body of practical teaching system, continuously improve the comprehensive ability of students.

1. Introduction

With the continuous popularization of computer networks, it has had a greater impact on people's daily life and work, and has also been applied to the teaching process of various disciplines. Based on the background of the Internet of Things era, the demand for social network talents has continued to rise. The education of students in higher vocational colleges also puts forward higher requirements. Computer network belongs to the field of information science with many disciplines such as computer technology, communication technology and electronic information technology, and also belongs to a comprehensive and practical course. .It is not only a compulsory course for engineering students, but also the basic core content of the Internet of Things industry. The teaching effect of the course will have an impact on the cultivation of other professional courses and IoT talents. But in the actual course teaching process, it contains a lot of The basic theoretical knowledge has led to more complicated and abstract courses, and it is more difficult for students to get started. Therefore, in order to cultivate more talents for the application of the Internet of things, this article studies the problems of computer network teaching in higher vocational colleges and develops the Internet of Things. In the era of computer network teaching goals, the teaching methods are continuously optimized.

2. Internet of Things Technology

The Internet of Things technology belongs to a new type of information technology.The basic meaning is to combine things and form a complete network.It has the following characteristics: ① The Internet of Things is the core content of the new generation of information technology. Completed the expansion and extension of the Internet application scope. ② The application of Internet of Things technology is to use wireless sensing nodes and achieve communication and information sharing between various items. Using Internet of Things technology, through information communication technologies such as intelligent identification and perception, a wide range of It is used in the process of Internet system integration. It can be seen that, in the context of the rapid development of the Internet and computers, the Internet of Things technology is an emerging development industry.

3. The Main Problems of Computer Teaching in Higher Vocational Education

The rapid development of the Internet of Things has promoted the continuous development of computer courses to a certain extent, which will have a direct impact on the future development of students. However, in the actual teaching process, as network technology is gradually applied to the teaching of various disciplines, but the update of traditional textbooks is slow. the construction of school laboratories cannot meet the needs of the development of the current era, which has a direct impact on the quality of teaching. The specific problems are described as follows:

3.1 Lagging of Teaching Content

With the continuous development of the new technology of the Internet of Things, the curriculum of computer majors in higher vocational colleges needs to be reasonably compiled, and the network teaching materials also need to be continuously updated. However, based on the actual situation of mechanical energy analysis, the updating speed of network teaching materials in various colleges is slow and not timely. Insight into the development characteristics of network technology has the problem of lagging the content of computer teaching courses.

3.2 Traditional Teaching Mode is Boring and Single

In the teaching of computer courses in higher vocational colleges, the number of class hours in each semester is fixed, and the courses offered are relatively wide, resulting in a continuous decrease in the number of single subjects [1]. Due to the short teaching time of teachers, As a result, teachers are more willing to use traditional teaching methods, just to show students ppt courseware, and indoctrinately explain to students. In the process, students are in a passive state of affairs, learning interests cannot be improved, and the teaching network structure is also not complete enough to guarantee the teaching quality of the course.

3.3 Lack of Good Training Conditions

Because the cost of construction of the network training room in higher vocational colleges is relatively high, and the construction funds of the school training room are also limited, resulting in the failure of the student school to complete the construction of the training room, which affects the development of network training courses. The school is a new campus, but due to the rapid update of the network era, although the training room has been built, the computer software and hardware configuration can no longer meet the current development needs. Therefore, the development of network training courses is not effective. There is a problem of disconnection between practice and theory, which is not conducive to the cultivation of applied IoT talents.

4. The Construction Path of Higher Vocational Computer Practical Teaching Platform Based on Internet of Things

4.1 Design Platform Framework

The main goal of conducting computer skills training for vocational college students is to expand students' professional capabilities. In the process of practical teaching, teachers will use the combination of internal and external forms to extend the knowledge points in the curriculum, and Students provide more development-oriented topics. Students can combine their own interests and teaching goals to choose a reasonable teaching direction. In this process, the teacher's most important guide can continuously improve the students' practical ability, which mainly includes Courses in network design, practice, and application system development.

The basic goal of innovation practice is to cultivate students' innovation ability, and use the network experimental teaching in higher vocational colleges as the basis, and use the integration of various projects of production, learning, and research to create a personalized development education platform for students, combining students the basic characteristics of the project are to determine scientific research and innovation projects, and to encourage students to actively participate in innovation plans and participate in various scientific research projects. Only by

subdividing the project and arranging students into different modules, and arranging Specialized teaching manages teaching progress and gives students appropriate help. At this stage, the classroom provided by the experimental center to students is mainly the design of network systems and the development of mobile systems. The innovative and practical teaching platform architecture is shown in Figure 1.
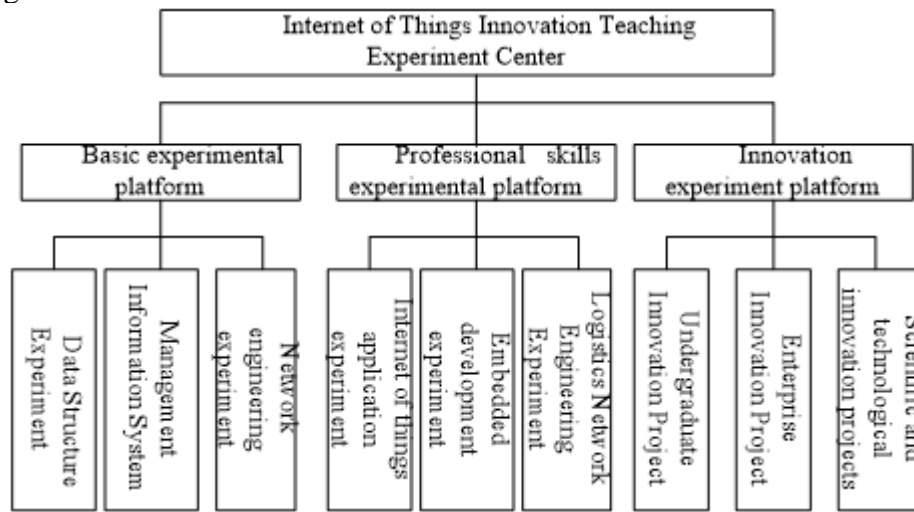

Fig.1 Computer Practical Teaching Platform for the Internet of Things

In the course of teaching professional courses, it is very important to build a professional skills training platform. The basic purpose is to cultivate and train students' comprehensive application ability and improve the ability of students to cooperate with others. the use of laboratory development project forms to enable students to carry out independent professional skills practice activities based on his own interests. The scientific research and innovation practice platform is mainly set up to cultivate students' innovation ability, and uses the form of cooperation of production, learning, and research to establish an open management platform. Among them, teaching the content is open, students can actively participate in the process of scientific research practice and engineering application through project establishment and application projects, and gradually realize the reasonable allocation of teaching resources [2]. On this basis, establish guidance teachers and enterprises Participate in a practical teaching evaluation system to continuously enhance the assessment and training of students' innovative qualities.

4.2 Improve Related Platform Technologies

By perfecting practical training and practical technology, we can complete the dual teaching tasks, meet the computer professional curriculum design, carry out in-class experimental activities, and clarify the needs of students' graduation design and other links. It is not only necessary to simulate comprehensive practical training such as corporate internships the project also needs to meet the student subject competition. relevant educators should pay more attention to the upgrading and newness of the learning platform. In the design process, use the modular idea to fully consider the function of the product. not only can it meet the requirements of the theory the employment needs can also meet the needs of other students' extracurricular and extracurricular experiments. For the experimental design of the teaching platform, the research results need to be integrated into the Internet of Things teaching plan, and the teaching cases of the experimental center of gravity should be used to carry out the computer professional teaching courses. Integration to achieve good teaching results.

4.3 Making Use of Platform Information Storage

In the process of developing a comprehensive platform, the use of big data analysis technology and mining technology is reasonable to meet the core curriculum learning goals of computer major students. By introducing competition and practice, teachers can obtain students' data from the platform's data.

The use of massive storage systems can provide more powerful data analysis and decision-making functions for the Internet of Things training platform. Teachers can use their own decision-making algorithms to analyze the learning situation of students in the system, and then provide learning management departments and teachers Provide corresponding evidence, accurately reflect the learning situation, predict the difficulties that students may face in the learning process, do timely guidance and intervention, and evaluate the employability of students.

Utilize a comprehensive platform to record the learning data of students in various links, and use internal algorithms to model the knowledge that learners have mastered. On the basis of clarifying the inherent relationship between teaching goals and learning activities, predict the learning effect of the course and analyze the learner's performance in the practical training process. Finally, combined with the data analysis of the integrated platform, learn about the student's learning situation, and get a study report and academic analysis, so that students can discover the problems hidden in each link in time and stimulate Students' desire to learn. In addition, the use of integrated platforms will provide students with procedural data in conjunction with the learning situation of the students, and help teachers adjust the content of the curriculum, as well as provide an important basis for the reform of the teaching curriculum.

4.4 Design Practical Teaching Content

(1) Do basic practice teaching well

In the practice teaching of computer major, it mainly includes professional skills, basic experiments and innovation experiments. Basic experiments mainly include management information system design, data structure experiments, etc. Generally, the experimental questions are more than the topics in the textbook. It is more complicated and closer to the actual situation of students. Teachers should pay more attention to the integration of theory and practical applications, and cultivate students' basic skills in software development and IoT design. Through the integration of mathematical structure experiments and IoT, carry out network optimization Design training of algorithms.

(2) Focus on professional skills practice

In the practice teaching of computer major, more attention should be paid to the practice of professional skills, including embedded development experiments, IoT technology application practices, etc. [3]. The IoT application experiments mainly include sensor experiments and IoT design experiments. .Sensor experiments are mainly to cultivate students' ability to apply sensor technology, and use sensor networks to design information networks and carry out corresponding information processing work. Only reasonable use of wireless networks and big data technologies can transfer big data to servers for storage then, use the pc to implement the database management work and do a good job of network maintenance. Based on this, it can meet the learning needs of most students, so that they can control the software development system and the reasonable application of the control system.

(3) Innovation Project Practice

In the process of innovation experiments, it includes students 'innovation projects in higher vocational colleges, and enterprise innovation projects. College students' innovation projects mainly refer to students combining their own interest propositions and laboratory equipment to develop corresponding application products. Enterprise innovation the project mainly refers to students after participating in production, learning, and research activities. Using the advantages of school-enterprise cooperation, closer the relationship between enterprises and universities, and the sharing of talent and equipment resources, to create higher benefits for both parties. In the process of carrying out technological innovation projects, effective teaching measures are adopted to help students consolidate weak knowledge points.

5. Conclusion

Based on the background of the Internet of Things, higher vocational colleges carry out the construction of computer-based practical teaching platforms, which can achieve the integration of

knowledge in various disciplines. This article uses the Internet of Things innovative teaching practice concept as the basic content to analyze and study the construction of the Internet of Things Center, and combining the basic characteristics of computer majors, a practical teaching system with teachers as important assistants and students as the main body is proposed. Only by integrating the knowledge system with modern technology can we continuously innovate the consciousness of students and cultivate more outstanding it talents. Maximize student value.

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