

Application of Computer in Electrical Technology Experiment

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Abstract: With the continuous development of science and technology in China, the electrical technology is becoming more and more mature. Electrical technology is very important for the development of the whole society. Under the background of network information, it is necessary to actively incorporate computer technology into electrical technology experiment, and organically combine computer technology with electrical technology experiment, so as to further improve the experimental accuracy and enhance the operator's electrical technology operation ability. This paper mainly analyzes the application of computer in electrical technology experiment, as follows.

1. Introduction

Electrical technology is the product of the continuous development of science and technology. With the rapid development of science and technology in China, electrical technology is becoming more and more mature. Electrical technology experiment is an indispensable way to cultivate electricians. Incorporating computers into electrical technology experiments actively can further ensure the accuracy of experiments, which is of great significance to improve the skill level of electricians.

2. Analysis of Computer Application in Electrical Technology Experiment under the Background of New Era

2.1 Computer Network Classroom Gradually Replaces Traditional Multimedia Classroom

Improve the configuration of computer teaching facilities in electrician technology laboratory and connect with teachers' computers, so that teachers can control every computer's power and signals, transmit documents and image data to each student at the same time, so as to achieve the purpose of uploading image data and files at the same time. In the teaching of electrical technology theory course, teachers can also carry out teaching tasks with the help of computers, and show teaching content and PPT to students in the network classroom. This teaching mode can replace the traditional classroom teaching mode, and truly realize the computer network teaching. In addition, students can complete their own homework on the test bench, and pass the homework to the teacher in time with the help of computer network, so that the teacher can timely review the completion of students' homework, making the electronic technology experiment teaching more efficient^[1].

2.2 Electrical Technology Laboratory Should Keep Up with the Development Trend of the Times

The traditional electrician technology laboratory left people with the impression that cement test stand and all kinds of instruments. Before each experiment, teachers need to debug various experimental instruments in advance. With the rapid development of science and technology, more and more schools are using the integrated intelligent networking experimental equipment. The test bench can concentrate the voltmeter, computer, power supply and other experimental equipment in the integrated experimental operating system, and teachers can operate the computer to control the whole process of the experiment. This kind of electrical technology experiment teaching mode is more consistent with the development trend of the times, really keeping pace with the times.

2.3 Incorporating Computers Can Enhance the Openness of Electronic Technology Experiments

To incorporate electrical technology experiment into the computer network teaching platform, teachers' teaching courseware, syllabus and training report can be gathered together. Students can make an appointment for relevant experiments with the help of network teaching platform. Teachers can also control various experimental equipment with the help of network system. It can be seen that the introduction of computer makes the electrical technology experiment teaching more open.

3. The Importance of Computer Application in Electrical Technology Experiment

3.1 Stimulate Students' Interest in Electrical Technology Experiment

Influenced by traditional teaching mode, it is difficult to stimulate the enthusiasm of students to participate in the experimental learning even if the school has carried out the electrical technology experiment class. However, the computer-aided network classroom can make the abstract content of electrical technology experiment teaching more intuitive, and can also show the static experiment in a dynamic way. In addition, the actual production scene in the factory can be displayed to students from the screen with the help of intelligent teaching equipment, instead of the original wall chart, chalk and other teaching aids. Therefore, the effective application of computer in electrical technology experiment teaching can make the whole teaching content more diverse, and can significantly stimulate students' interest in electrical technology experiment learning.

3.2 Solve the Problem of Insufficient Electrical Technology Experiment Equipment

Electrical technology experiment teaching needs more experimental equipment. At present, the majority of colleges and universities in China present the problem of equipment shortage in electrical technology experiment teaching. The simulated experimental equipment can effectively solve the problem of insufficient experimental equipment, and can guarantee good experimental teaching effect. In addition, the simulated experimental equipment is easy to save, which can reduce the impact on the next experiment.

3.3 Strengthen the Guidance for Students' Practical Operation

In the practice teaching of electrical specialty, under the influence of the traditional teaching mode, most of the teachers adopt the teaching method of repeated explanation, and the teaching effect under this teaching mode is not ideal. However, if computer technology is actively applied to electrical technology experiment teaching, students can use the computer screen on the test bench to observe the images presented in the experiment, and the whole experimental process is transformed into the form of simulation animation, which is easy for students to understand. In addition, the control motor circuit is connected with the bench side of the test bench, which can record the whole experimental steps and operation process into small videos, so that students can watch with focus according to their own needs, which can reduce the boring feeling caused by repeated explanation of teachers in the traditional teaching mode, and strengthen the guidance for students' experimental operation^[2].

3.4 Teachers and Students Can Be Exposed to the Most Advanced Knowledge in Time

With the continuous development of science and technology, the content of electronic engineering is more perfect. At present, computer has been widely used in circuit drawing. There are many software that can be used in circuit drawing, such as CAD, AutoCAD, Multisim, etc. The effective application of computer in electronic technology experiment teaching can make the majority of teachers and students contact the most advanced technology in time, which is of great significance for the cultivation of electrical professionals.

3.5 Improve Teaching Efficiency of Electrical Technology Experiment Significantly

The teaching function of computer is various, including playing CD, displaying courseware,

building simulation experiment platform, etc. In the traditional teaching mode of electrical technology, teachers often copy experimental reports and draw pictures on the blackboard in the classroom. Some special graphics are difficult to draw on the blackboard due to the limitation of teaching conditions, so the teaching mode has strong closure. But actively applying computer can simulate the experimental scenes that classroom teaching can not provide, such as lightning strike scene, electric shock accident and short circuit problem, which can bring students more real feelings, which is of great significance to improve the effectiveness of electrical technology experimental teaching^[3].

4. Measures to Further Promote the Effective Application of Computer in Electrical Technology Experiment

4.1 Improve the Rationality of Computer Technology Application

In electrical technology experiment teaching, CDA, circuit, simulation, motor drive and other courses are inseparable from the computer. In the experimental teaching of the above courses, with the help of computers, the difficulty of courseware making can be reduced and students can understand and master the content easily. Therefore, teachers of the major need to establish a new teaching style, regard the computer as their own teaching tools, and innovate teaching methods in the process of proper and reasonable use of computers. For example, in the electrical wiring technology experiment teaching, device disassembly teaching, welding technology teaching, motor installation and troubleshooting teaching, they can not rely on the computer to carry out simulation teaching, but provide students with real experimental equipment to carry out teaching tasks.

4.2 Innovate the Experimental Teaching of Electrical Technology with the Help of Software and Courseware

Drawing software and simulation software are indispensable learning contents of electrical engineering specialty, and the above contents are difficult to learn. Therefore, in order to further improve the teaching effect, it is necessary for teachers to make courseware with the help of computer software, rely on new courseware to innovate the original teaching mode, organically combine the new technology with the experimental teaching of electrical technology, so as to further improve the application effect of software and courseware, and innovate the experimental teaching mode of electrical technology^[4].

4.3 Focus on Cultivating Students' Autonomous Learning and Practical Ability

The application of computer in electrical technology experiment teaching needs to focus on cultivating students' autonomous learning and practical ability. When guiding students to carry out electrical technology experiment with the help of computer, teachers need to play their role as a guide, fully reflect the dominant role of students in teaching, strengthen the cultivation of students' subjective initiative, and enhance students' consciousness of participating in electrical technology experiment. The active application of modern teaching technology to electrical technology experiment teaching can change the previous closed teaching problems, which is of great significance to enhance the practicality and openness of theoretical teaching. Therefore, under the new situation, electrical technology experiment teachers need to establish a new educational concept, constantly improve their teaching skills, strive to learn new computer technology, and actively integrate the computer into the electrical technology experiment teaching.

4.4 Adopt the Teaching Mode of Teaching Students in Accordance with Their Aptitude to Enhance Their Post Adaptability

In order to apply the computer to the electrical technology experiment teaching actively, it is necessary for the teachers to formulate the teaching mode of teaching students in accordance with their aptitude according to their learning characteristics. In electrical technology experiment teaching, teachers can use discussion method, lecture method, project inquiry method and practice method to carry out experimental tasks, so as to enhance students' post adaptability in the future.

For example, in the project inquiry teaching mode, students can draw, calculate, watch videos and consult materials with the help of computer, finally get the overall design and discussion scheme, and summarize the experimental report. Under this teaching method, students can know how to control the circuit with the help of computer, and further understand the method of signal acquisition and processing, which is of great significance for mastering their own experimental skills^[5-6].

5. Conclusion

To sum up, under the background of the new era, the electrical technology experiment teaching needs to innovate the original teaching mode, actively absorb the computer technology, and build an intelligent network teaching platform, which can improve the efficiency of electrical technology experiment teaching on the basis of stimulating students' interest in learning. Therefore, the integration of the two is inevitable.

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