Research on the Teaching Reform of "Student-Centered" Practical Course

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Abstract

This paper mainly analyzes the current situation of sensor technology and application, and describes many deficiencies in the teaching process of the current course. This paper carries out curriculum teaching reform according to the situation of students in our school. This paper describes in detail the reform measures and implementation methods in the teaching process, and finally summarizes the expected results of this reform.

Keywords

Sensor; Practical Course; Teaching Reform.

1. Introduction

Sensor technology involves radio communication, digital electronics, biomedicine, industrial electronics and other technical fields. With the process of informatization, the status and role of sensor technology are becoming more and more important. Sensor technology is a professional course of electronic information engineering and communication engineering. It will have a far-reaching impact on subsequent courses and future employment. With the development of Internet of things technology, sensor technology has attracted much attention. How to deal with the technology development in the environment of Internet of things is also a topic we need to face, that is, how to learn the number sensor technology. To sum up, the sensor technology course must carry out necessary reform on the basis of traditional teaching methods and change the previous traditional teaching methods.

2. Existing Problems

During the teaching process, in order to complete the tasks in the syllabus, each knowledge point involved needs to be mentioned, and most of these knowledge points are given in the form of parameters and tables. The learning process will be boring, so students have no interest points in the acceptance process, so the learning effect is poor.

The content of the textbook focuses on the integrity of theoretical knowledge and the preciseness of knowledge system. For the students of our three colleges and universities, they mainly focus on the cultivation of application skills, so the teachers need to organize the processing of teaching materials, so as to facilitate students' learning other follow-up courses and future employment development.

In the process of practical teaching, most of them are simple confirmatory experiments of sensor performance and use. For most students, it does not arouse students' enthusiasm for active learning. It seems that teachers play a primary role and students play a secondary role in the whole process of practical teaching design.

The examples in the textbook do not make students feel that they are closely related to their own life, and do not make students deeply realize that sensor technology is really an indispensable technology in our life. At the same time, these technologies can be realized and applied by themselves.

In class, teachers are responsible for giving lectures, and students can learn with teachers. In extra-curricular time, students can only complete the homework specified by teachers, and have no idea to expand this course to enrich their knowledge.

The above situation shows that we need to take effective measures to change this situation.

3. Implementation Process

It is decided by the teaching object and content that the sensor technology course needs to carry out necessary teaching reform. The specific reform contents are as follows:

(1) Reform of theoretical teaching methods: the traditional teaching methods take the integrity of knowledge as the starting point. Now we need to break this tradition. We need to consider our students' ability, dilute some cumbersome theoretical derivation and rigorous proof process, replace it with the introduction of simple conclusions, and then carry out practical evidence and Application expansion.

(2) Reform of theoretical teaching means: the traditional teaching means adopts the teaching method of multimedia and blackboard writing. In this way, we can see that blackboard writing mainly undertakes the process of theoretical derivation and proof. Here, blackboard writing is not only used for the process of theoretical derivation and proof, but also has two functions: one is that the teacher directly puts forward complex conclusions and emphasizes them through blackboard writing, and the other is to give students an opportunity to interact, Let students come to the front and practice directly on the blackboard, so that students can understand what they have learned in class.

(3) Reform of practical teaching methods: traditional practical courses are designed and verified by teachers before the experiment. There is no need to modify or make mistakes, so students have no opportunity to participate. In this way, the experimental content may be completed smoothly, but the students have no in-depth experience. Therefore, in the next practical course teaching process, we should add the factors of students' participation, so that students can carry out circuit design and hardware debugging by themselves according to the task. In this process, students can think by themselves and complete the assigned tasks by themselves through practice.

(4) Reform of practical teaching assessment method: the traditional practical assessment is mainly based on the students' attendance in the usual experimental courses, the performance in the classroom and the experimental report book to assess the students' experimental results. In the next practical assessment, in addition to these assessments, students should also be assigned some optional tasks and different parameter indicators. Students find their own methods to demonstrate and design the scheme. Teachers assess through the designed indicators and include them in the results of practical assessment.

(5) Extracurricular homework assessment: the traditional extracurricular assessment method mainly focuses on students completing extracurricular homework. Without the teacher's supervision, some students will copy others directly without completing the task, which will lead to two adverse consequences: first, these students do not need to understand the content to be completed and the real meaning of the copied content, but just do the work of a porter, Move words from other people's books to your own. The second is that the students' homework is the same. When the students who have just come into contact with the class do not have a deep understanding of the students, it is difficult to judge which students do it themselves and which students copy it. In this way, the results given will not be objective. Therefore, in the next work, try to avoid this stereotyped way of leaving exercises after class, but use the way of thinking carefully in the direction of interest, so that students can complete their homework with their own understanding.

(6) Reform of teaching achievements: in the traditional assessment, we only seriously complete the requirements and tasks of the syllabus, and do not take some current applications as necessary assessment items. In this way, there will be such a problem at the end of the semester: some students will ask, what is the use of this course? Therefore, in the process of learning this course, let students answer this question independently. In the teaching process, according to the students' personal interests, they choose the direction related to the course, set and complete the teaching tasks, make active preparation in the teaching process, coordinate among teams, and display the results at the end of the term after a long period of debugging and practice. Let students in this process, can independently solve problems, and pre foreign students play space. Through the display at the end of the semester, we can see the students' learning status and their efforts. By adding this link, students are expected to exercise and improve.

4. Summary

The course reform of sensor technology has been carried out in our school, the specific effects are as follows:

(1) The change of teaching style desalinates the complex and cumbersome knowledge points in the book and gives them in a direct and simple way. The focus is to make students understand these contents perceptually through multimedia and on-site demonstration in class. In order to further understand the significance of knowledge, Add some hands-on examples to make learning more targeted and understand the course content. References.

(2) In the process of experimental teaching, we should change the original experimental methods, reduce the proportion of confirmatory experiments, increase the opportunities for students to participate in and design, so that students can make preliminary preparation after class, debug and design during the experiment, and analyze and summarize after class, so as to deepen their understanding of knowledge.

(3) Some practical examples are arranged outside class to let students complete the task in groups and complete the design process of the system from the foundation. So that students can expand their horizons, understand the real meaning of the course, and really contact the development process of the system.

References

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