

Research on Teaching Reform of Sensor Technology and its Applications Course

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Abstract: With the deepening of educational reform, the teaching work of Sensor Technology and its Application course should be further optimized. Teachers should actively introduce new educational concepts and teaching methods to arouse students' interest better, strengthen their understanding and application level of the knowledge they have learned and improve the effectiveness of education. In view of this, this article will analyze the teaching reform of Sensor Technology and its Application course, and propose some strategies for reference.

Keywords: Sensor Technology and its Applications; Course teaching; Reform

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1. Analysis of the current teaching situation of Sensor Technology and its Application course

1.1. Backward teaching philosophy

At present, some teachers adhere to outdated teaching concepts when conducting course on Sensor Technology and its Applications, making it difficult for them to further optimize and innovate the teaching forms and paths of sensor technology. They lack the introduction of new ideas and technologies, which greatly hinders the development of students' comprehensive practical abilities^[1]. In addition, some teachers pay too much attention to students' exam scores. When teaching Sensor Technology and its Applications course, they often use textbooks as the only teaching basis. Introducing new educational resources is insufficient, which can also affect students' understanding and cognitive level of Sensor Technology and its Application course knowledge. Over time, students will find it difficult to achieve effective breakthroughs in their own learning habits, which is not conducive to forming a more comprehensive knowledge system of Sensor Technology and its Application course and hinders their long-term development in the future.

1.2. Unitary teaching format

Although some teachers can try to introduce some new educational forms and methods into the classroom when carrying out the teaching of Sensor Technology and its Applications, a lot of the teachers still use indoctrination

teaching, which is very unitary and rarely introduces information technology and big data technology, thereby affecting the effectiveness of teaching reform in Sensor Technology and its Applications course. The knowledge of Sensor Technology and its Application course is relatively complex, which requires students to form a high level of abstract thinking and analytical ability. However, due to the relatively unitary teaching form of teachers, it is difficult for students to develop their comprehensive abilities in the long run. Some students may even experience negative emotions such as resistance, which will greatly hinder the development of teaching reform in Sensor Technology and its Application course in the future.

1.3. Missing teaching content

In the current teaching of Sensor Technology and its Applications course, there is a certain lack of teaching content and the main factors that lead to this situation can be studied from two aspects ^[2].

- (1) Firstly, there is insufficient extension of the teaching materials for Sensor Technology and its Applications course by teachers. At present, most teachers mainly rely on Sensor Technology and its Application textbooks when carrying out education work. They rarely analyze the actual application situation and market development status of sensor technology and also introduce insufficient excellent cases in some enterprises. This will greatly affect students to form a more complete knowledge system of Sensor Technology and its Application.
- (2) Secondly, the cooperation between schools and enterprises is not comprehensive enough. School-enterprise cooperation is an extremely important component in the teaching reform of Sensor Technology and its Application course. Many enterprises rarely place students in key positions when cooperating with schools, which can lead to limited knowledge of Sensor Technology and its Application course for students, thereby affecting their mastery of new knowledge and hindering the improvement of educational effectiveness.

2. The significance of teaching reform in the course of Sensor Technology and its Applications

2.1. Meet market talent demand

The demand for high-quality sensor technology talents in society is constantly increasing. Traditional teaching methods for Sensor Technology and its Application course can no longer meet the market's expectations for talent. Therefore, educators should actively research new educational concepts and methods to explore new teaching modes and content and further enrich students' knowledge reserves of Sensor Technology and its Application course ^[3]. Moreover, by carrying out teaching reforms in Sensor Technology and its Applications course, students can be promoted to achieve more comprehensive development and better meet the market's demand for talent.

2.2. Relieve employment pressure on students

The relevant technologies and knowledge of sensor technology have also been updated to a certain extent in this era of technology development. Teachers need to use this as a basis to carry out teaching reform work on Sensor Technology and its Applications course, help students better adapt to social changes and lay a solid foundation for their future employment ^[4]. By carrying out teaching reforms on Sensor Technology and its Applications, students can better transform their course knowledge into practical abilities, enabling them to handle various problems in future work better while enhancing their core competitiveness and alleviating employment pressure. Moreover, reforming the teaching of Sensor Technology and its Application course can help students

master richer knowledge and diverse types of knowledge, which also greatly promotes their employment rate.

2.3. Supporting the rapid development of enterprises

In the past, many students did not have a solid grasp of course knowledge in teaching Sensor Technology and its Applications course. Their comprehensive abilities and practical literacy made it difficult to meet the development needs and employment expectations of enterprises. This led to them needing to receive a certain amount of training after entering the enterprise, which would invisibly waste a lot of enterprise resources and hinder the rapid development of enterprises^[5]. By carrying out teaching reforms in the course of Sensor Technology and its Applications, teachers can introduce more targeted and practical knowledge into the classroom, making students' knowledge system of Sensor Technology and its Applications more comprehensive and systematic. This can enhance their match with corresponding positions, reducing labor costs for enterprises and helping them achieve long-term and rapid development.

3. Teaching reform strategies for Sensor Technology and its Applications course

3.1. Clarify teaching objectives and cultivate professional awareness

To improve the effectiveness of teaching reform in Sensor Technology and its Applications course, educators should establish a clear teaching goal when carrying out course teaching work. This can lay a solid foundation for future teaching work and better cultivate students' professional awareness^[6]. Moreover, guided by clear goals, the teaching content of Sensor Technology and its Applications course can better meet market demand, enhance students' practical ability and comprehensive literacy and cultivate more versatile talents for society.

In practice, educators can delve deeper into the internal workings of enterprises and industries, analyze the work content, job requirements, and workflow of sensor technology-related enterprises, and work together with industry practitioners and experts to establish a clear curriculum teaching goal. This will enable educators to conduct in-depth discussions on the teaching content of Sensor Technology and its Application course, ensuring that the knowledge of sensor technology is in line with the actual market situation^[7]. With the change of market conditions, educators can actively adjust the course content, so that enterprises can become the wind vane of the teaching reform of Sensor Technology and its Application course and ensure that the content of Sensor Technology and its Application course is progressive, reasonable and scientific. In addition, in the teaching reform of Sensor Technology and its Application course, in addition to emphasizing the explanation of theoretical knowledge, educators should also actively cultivate students' comprehensive vocational skills, help them make career plans, and enhance their comprehensive abilities.

3.2. Integrating practical cases and developing practical abilities

To further enhance the effectiveness of teaching reform in Sensor Technology and its Application course, educators need to exert importance on the integration of practical cases to help students conduct more in-depth analysis and discussion based on cases and promote the further development of their comprehensive abilities and literacy^[8]. Organizing students to combine their knowledge of Sensor Technology and its Application course to conduct case studies can help them gradually form a more comprehensive and scientific knowledge system, which greatly promotes their further learning and exploration of Sensor Technology and its Application course knowledge in the future.

Introducing cases can help students master more skills, equipment and software related to Sensor Technology and its Application course, further clarifying their career development views. This is of great significance for improving students' understanding of Sensor Technology and its Application knowledge^[9].

Currently, some students may encounter certain employment problems after graduation, which is why they lack relevant skills and qualities in the industry. By carrying out teaching reforms on Sensor Technology and its Applications, students can gain a deeper understanding of the knowledge they have learned through practical cases, enhance their practical abilities and lay a solid foundation for their future employment.

3.3. Carry out blended learning to improve understanding level

The content of the course on Sensor Technology and its Applications is relatively complex. Many students often encounter difficulties and misunderstandings when learning course knowledge, which greatly affects their mastery of Sensor Technology and its Application course knowledge and is not conducive to solving various practical problems in the future. Therefore, when conducting the teaching reform, educators can try to introduce blended learning methods into course teaching to expand the teaching content and educational path of the course further^[10]. When carrying out blended learning, educators can use micro lessons to carry out teaching reforms to achieve breakthroughs in key knowledge content and improve students' understanding levels. When introducing micro lessons into Sensor Technology and its Applications course, it is best to control the duration of micro lessons to around 5–10 minutes, which can help students better concentrate. If the micro lessons are too short, it will be difficult for teachers to integrate key knowledge points of Sensor Technology and its Applications into the micro lessons, thereby affecting the educational value of micro lessons^[11].

3.4. Building an online platform and improving the knowledge system

To enhance the effectiveness of teaching reform in Sensor Technology and its Application course, educators should exert importance on cultivating students' self-learning ability when carrying out education work. By helping them form good self-learning habits, they can more effectively carry out preview and review activities of Sensor Technology and its Application course knowledge, improve their course knowledge system and enhance their level of knowledge application in the course^[12]. However, in the past, few students were able to engage in high-quality self-learning activities, mainly due to the lack of a comprehensive and reasonable self-learning platform. Some students find it difficult to solve the self-learning problems they encounter when learning Sensor Technology and its Application course, which can greatly hinder their self-learning efficiency and mentality. This is not conducive to creating a more comprehensive knowledge system for Sensor Technology and its Application course.

To this end, educators can create an online self-learning platform for Sensor Technology and its Application course based on the actual situation of our school. When students encounter problems during self-learning, they can combine the self-learning platform to carry out knowledge-learning and problem-solving, which is of great significance for improving their self-learning efficiency^[13]. In daily teaching, teachers can insert a homework submission function into the online self-learning platform, regularly publish some cases and questions related to Sensor Technology and its Application course knowledge, organize students to think based on the problems and cases, and encourage them to share their thinking results on the platform. This is of great significance for improving the effectiveness of teaching reform^[14].

3.5. Optimize evaluation mode and improve teaching quality

To ensure the effectiveness of teaching reform in the course of Sensor Technology and its Applications, in addition to emphasizing the expansion of course content and optimization of teaching forms, teachers should also further innovate the evaluation mode. This can help teachers better identify the shortcomings of their teaching work, help students form a more complete knowledge system and guide future teaching

reform in Sensor Technology and its Applications. In previous evaluation models, teachers usually conducted unilateral evaluations of students, which had significant limitations and hindered the development of students' comprehensive literacy^[15]. Therefore, teachers should attempt to innovate and optimize the teaching evaluation of Sensor Technology and its Application course, actively introduce evaluation subjects such as involving society and enterprises, in order to ensure the comprehensiveness, rationality and scientificity of the teaching evaluation and improve the quality of teaching.

4. Summary

In summary, to further enhance the effectiveness of teaching reform in Sensor Technology and its Application course, educators can clarify teaching objectives and cultivate professional awareness, integrate into practical cases and develop practical abilities, carry out blended learning to enhance understanding level and build an online platform and improving the knowledge system. Besides, educators can also deepen school-enterprise cooperation and enhance application capabilities, starting from optimizing the evaluation mode and improving the quality of teaching. This study invisibly promotes the quality of teaching reform in Sensor Technology and its Application course to a new level.

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