

Teaching Reform of Mechatronics Technology Major in Higher Vocational Colleges under the Vision of Information Technology

Yan Ming, Sun Peng

Xuchang Vocational Technical College, Xuchang, Henan, 461000, China

Keywords: Information technology, higher vocational education, mechatronics technology, teaching reform

Abstract: For higher vocational students majoring in mechatronics technology, the professional courses of mechatronics technology require students to fully master the relevant skills. And in order to be able to effectively improve the electromechanical teaching quality of higher vocational schools in China, this paper mainly analyzes the information technology horizon, the importance of the electromechanical integration of higher vocational technology professional teaching reform, and to explore the current teaching situation, finally put forward some effective reform countermeasures, aims to provide some reference for relevant teachers.

1. Introduction

As a key subject in higher vocational schools in China, it can enable students to have good professional skills in electromechanical technology, so as to provide students for students to leave the campus and enter the society and create a good foundation. However, from the current teaching situation of higher vocational schools in China, some teachers are seriously bound by the previous concept of exam-oriented teaching, and still use lagging teaching means to carry out knowledge teaching, which makes it difficult to effectively improve the teaching efficiency. Therefore, teachers should carry out teaching reform reasonably under the perspective of information technology, combine with students' actual learning situation, optimize and improve their own teaching methods and contents, so that students' mechanical and electrical professional skills can be significantly improved.

2. The importance of teaching reform of electromechanical integration technology in higher vocational colleges under the perspective of informatization

For higher vocational electromechanical integration technology, is the previous mechanical manufacturing and automation professional as the basic premise, the evolution of a professional discipline, it can put many different mechanical knowledge comprehensive summary and perfect, make it more conform to the needs of higher vocational students learning today, make higher vocational students after learning of knowledge content, can fully meet the demand of the social market for talents^[1]. therefore, In today's information city area, The course teacher needs to

combine the content of the teaching material and the students' actual learning situation, To carry out the teaching reform of mechatronics technology major, Its great importance, It is mainly manifested in the following two aspects: First, Due to the previous boring and lagging teaching form, Unable to fully meet the actual development needs of higher vocational students, Therefore, teachers need to teach their own teaching forms and classroom teaching content, Develop a scientific and reasonable improvement and optimization; second, Because the previous classroom teaching form is relatively boring, If teachers blindly use traditional teaching methods, To explain the knowledge to the students, Then it will cause the professional and technical personnel cultivated, cannot fully meet the specific needs of the social market. The main goal of higher vocational schools in China is to cultivate more professional and excellent talents, so that they can quickly adapt to and meet the requirements of the social market after leaving the campus and entering the society in the future. In view of this, it is necessary for higher vocational schools and relevant teachers to take the professional teaching reform as the key content, so as to create favorable conditions for the healthy development of students in the future.

3. Analysis of the teaching status of mechatronics technology major in higher vocational colleges

3.1 The construction of the practical training base is insufficient

Because of the constraints of economic conditions, the current most of our country higher vocational school internal training curriculum is not sufficient, complete, teaching equipment is relatively old, compared with the current industry leading equipment, equipment is relatively backward, especially in line with the characteristics of professional teaching experiment equipment is scarce, so the students' PLC training integration is not fully implemented^[2]. But in terms of electromechanical integration technology course education, the role of training teaching is very key, and the equipment is an important guarantee of training teaching efficient and orderly development, can make the students in the first time between theoretical knowledge and practical practice, for higher vocational students to create a good training teaching environment, but if the relevant of the equipment configuration is not perfect, will to the smooth development of teaching practice and the teaching results, bring negative effects.

3.2 Teachers have weak teaching ability and comprehensive quality

As the guide of electromechanical integrated classroom teaching in higher vocational schools, teachers are of key significance to students' knowledge learning. A teacher with strong comprehensive quality and sufficient professional knowledge reserve will significantly improve the quality of classroom teaching when explaining knowledge to students. However, if the teacher's own knowledge system is not perfect and the teaching facilities are relatively old, the classroom teaching effect will be greatly reduced. In higher vocational schools in our country in the past, most teachers lack of basic knowledge, and comprehensive literacy and the relevant provisions of the country, in this case cultivated by the students are generally basic theoretical knowledge is not strong, practical practice operation is not enough, the lack of good innovation ability, this will be the students employment in the future, bring very serious negative impact. In addition, higher vocational echatronics teachers are too young and lack of sufficient classroom teaching experience, which is also very unfavorable to the reform of mechatronics technology courses.

4. The teaching reform countermeasures of higher vocational mechatronics technology major under the perspective of information technology

4.1 Strengthen the learning situation analysis

At present, in the information technology environment, in order to make our higher vocational school electromechanical integration technology professional teaching reform work smoothly, teachers should class students actual learning analysis, this is because in the process of classroom teaching work, students occupy the main body of knowledge learning, students can according to their own specific situation and learning characteristics, to independent knowledge learning, thus, if in order to ensure the higher vocational colleges professional teaching reform to meet the actual development of students, we should do the analysis of class students. However, through the current situation of teaching management in higher vocational colleges, Since most students' academic performance is not ideal, And the academic ability and the basic ability are also relatively low, In addition, some school teachers have long been the verbal blame and cold treatment, The students have already had a lack of strong interest in mastering the knowledge, In order to maximize prevent the emergence of this phenomenon, Need to teach teachers in the usual education and teaching work, Conduct in-depth analysis and exploration of students' life situation, learning characteristics and learning situation, In order to develop targeted education and teaching for students, In this way can improve students' interest in knowledge learning. In addition, in today's rapid development of information technology environment, many types of teaching equipment used in higher vocational electromechanical integration professional teaching, at this time, need teachers and the student characteristics, the combination of different teaching facilities and teaching forms of scientific use, clear class students interested in what things, in order to students' interest in learning as the breakthrough point of professional teaching reform, so as to achieve the ideal classroom teaching effect. For example: teachers found in the classroom teaching through the use of multimedia technology can achieve good teaching effect, so in the process of professional knowledge in the future, teachers can put most of the classroom teaching time and energy in multimedia teaching, for students to design a scientific, reasonable and interesting teaching content and way, to achieve the fundamental goal of improving students' professional skills.

4.2 Clear teaching objectives

Higher vocational schools in the process of electromechanical integration technology professional teaching reform, need to clear education teaching objectives as the key, investigate its root, mainly because in the electromechanical integration classroom teaching stage, only teachers themselves have a clear classroom teaching objectives, to maximize to prevent classroom teaching from the theme phenomenon. In clear classroom teaching objectives, need teachers can to teaching content and teaching material content deep analysis and research, and to the class students of the future development job comprehensive analysis, combine the job and classroom teaching content, in order to ensure that students learn in school knowledge content, can obtain comprehensive application in the future work^[3]. In addition, teachers should also combine with professional characteristics and market development characteristics to set scientific and reasonable classroom teaching objectives, which plays a very important role in improving students' professional skills.

4.3 Pay attention to the rational application of information technology

To some extent, the innovation of teaching methods directly affects students' interest in

knowledge learning and determines the quality of classroom teaching. Therefore, teachers should break the constraints of traditional teaching forms and pay attention to the use of information technology to carry out classroom teaching. Because information technology has animation, sound, text, image and other performance, it can build vivid and vivid classroom teaching situations for students, fully mobilize students' interest in knowledge learning, and through the image and interesting video demonstration, it can significantly improve the overall quality and efficiency of electromechanical integration teaching in higher vocational schools. For example: teachers in the daily teaching process, if just use language to explain theoretical knowledge to students, it is difficult to let students to have a full understanding and grasp of relevant knowledge, then if the teacher can make theoretical knowledge into dynamic courseware, not only can make students actively, independent to participate in the classroom learning, but also can let the students have a full knowledge of the knowledge. Again, for example, the teaching teacher in the actual teaching, can abandon the past in the blackboard drawing of teaching means, but using video, PPT, and many other ways, the teaching knowledge clear, intuitive to students, make students in the auditory and visual, active, independent to participate in the classroom learning, deepen the memory of the theoretical knowledge. At this stage, Teachers should clearly master the students' knowledge and learning objectives, Will own pay attention to theoretical knowledge explanation of classroom teaching forms, To focus on cultivating students' professional skills, And to reposition the classroom education and teaching, The fundamental teaching goal is to train more compound excellent talents for the society, Pay attention to the actual needs of the current society and students' future work needs into the classroom teaching, Comprehensive cultivation of students' professional skills, theoretical knowledge and personal attitude, And it is deeply reflected in the teaching content, Targeted classroom teaching for students, Improve students' skills overall, For students to leave the campus at a later date, When entering the society to work, Apply the theoretical knowledge learned to practical practice reasonably, Quickly adapt to your own job position, Thus, for the long-term development of the enterprise, Contribution their own meager strength.

4.4 Establish a scientific and comprehensive practical training and teaching mode

First of all, in the process of students' future work, mechatronics puts very strict requirements on the student team cooperation. In specific work links, mechatronics projects usually require one or more teams to complete. In this case, in the teacher in the daily teaching process, the class students can be divided into several learning groups, requiring students to complete the classroom learning tasks. Among them, the teaching teacher should be combined with the specific situation of the students in the class to divide the students into groups, so that the students and the students can cooperate with each other, and complete the relevant tasks in tacit understanding and efficiency. At the same time, in the process of group cooperation, teachers should also add some real projects of social enterprises, so that students can have certain work experience when learning in school, and find their own technical shortcomings and advantages through practical projects. Through a large number of investigation and analysis, it can be found that through the application of group cooperation teaching method, it can significantly enhance the sense of team cooperation of higher vocational students, let the students have a consistent learning goal, form a good learning environment of mutual cooperation, mutual promotion and mutual supervision in the group, and further improve the students' knowledge learning efficiency^[4]. in addition, In the process of teaching reform by teachers, stratified teaching methods can also be used to explain knowledge to students, This is because students have different life experience and growth backgrounds, It leads to obvious individual differences between students and students, Therefore, the efficiency with which students can absorb internalization when learning knowledge is different, The existence of such

conditions, In a class of students with excellent academic performance, There are also students with poor academic performance, Therefore, teachers should fully understand and master the actual learning situation of each class in daily teaching, According to the personal characteristics of the students, To develop a targeted classroom teaching, And the reasonable use of stratified teaching method to make so that all students in the class can make some progress, So as to promote the healthy development of students, Build a good foundation.

4.5 Improve the comprehensive quality of the teachers

In the process of carrying out the teaching reform of mechatronics technology major, if higher vocational schools want to achieve the most ideal results, the necessary conditions are a faculty team with strong comprehensive quality. In the integration of teaching reform stage, the role of teachers were given more connotation and challenges, the teacher as the student knowledge learning promoters, organizers and instructors, in the actual classroom teaching process, is no longer by the teacher to students explain basic theoretical knowledge, but promote and guide students to rediscover knowledge and comprehensively solve the problem. Therefore, in the current mechatronics classroom teaching in higher vocational colleges, teachers should carry out independent inquiry and independent learning on the course content, so as to become the brilliant instructor, effective organizer and powerful promoter of the relevant knowledge learning of the class students^[5]. among, As a mentor, Need teachers should not only have sufficient professional theoretical knowledge and strong professional skills, At the same time, it is also necessary to accurately guide students to develop knowledge learning; As an organizer, Teachers are required that in the actual teaching process, Maintain good classroom teaching discipline, Can be used for the orderly implementation of classroom teaching, create favorable conditions; As a facilitator, Not only need teachers to have good professional skills and sufficient professional knowledge, It should also have a professional affection, This mainly refers to the beliefs and ideals related to the value and the essence of education formed in the long period of work, Education and teaching work can be carried out efficiently and orderly. It can be seen that, under the perspective of today's information technology, teachers need the teaching reform of mechanical and electrical integration technology majors in higher vocational schools to actively change and improve their lagging education and teaching concepts, and continue to innovate, so as to create a good foundation for students in the future.

5. Conclusion

In a word, the previous teaching of mechatronics technology in higher vocational colleges has long been unable to fully meet the actual needs of students, and optimizing the teaching strategy of higher vocational colleges has become an important work content. Therefore, in order to further improve students' comprehensive quality and professional skills, relevant teachers need to actively improve and reform the teaching of mechatronics technology in the process of daily engineering development. At this stage, teachers should carry out under the perspective of information technology, so as to create a good foundation for students' future development in the future.

References

- [1] Li Ren. *The Reform and Exploration of the Practical Teaching Mode of Mechatronics Major in Higher Vocational Colleges* [J]. *Equipment Manufacturing technology*, 2020 (08): 179-181.
- [2] Zhu Ming Yi. *The Construction and Implementation of the Practice Teaching System of Mechatronics Technology in Higher Vocational College* [J]. *Southern Agricultural Machinery*, 2020,51 (10): 83 + 206.
- [3] Hu Chengxi. *In the era of Industry 4.0, research and practice exploration of education and teaching reform in*

- higher vocational 4.0 [J]. Contemporary Educational Practice and Teaching Research, 2019 (15): 57-58 + 167.*
- [4] Fang Xiaojun, Jiang Sizhong, Nong Junlin. *Research and practice of innovation and Entrepreneurship Practice Teaching of mechatronics Technology major in Higher Vocational colleges under the background of "Made in China 2025" [J]. Light Industry Technology, 2019,35 (06): 151-152.*
- [5] Liu Liping, Zhang Jiyuan. *The Construction and Implementation of the Practice Teaching System of Mechatronics Technology in Higher Vocational College [J]. Industry and Technology Forum, 2019,18 (11): 271-272.*