

Analysis on Teaching Innovation of Machine Manufacturing and Automation Major in Universities

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Abstract: The paper discusses how to promote the improvement of machine manufacturing and automation teaching in colleges and how to implement innovation teaching.

Keywords: Colleges and universities; Machine manufacturing; Automation; Innovation

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1. Introduction

In China's ever-lasting industrialization, machine manufacturing and automation technologies have played extraordinary roles and made great differences in the sustainable development of China's industrialization. Colleges and universities all over the country should realize this point and acutely catch the urgent need of our country for relevant technological personnel. In daily teaching, college teachers need to further stress on profession and innovation, proactively analyze the actual demands in our society, and cultivate professional personnel that conform with the trend of the times.

2. Stress on the Significance of Teaching Innovation in Machine Manufacturing and Automation Major

Currently, China's comprehensive national strength has been developing by leaps and bounds. In order to consolidate China's status in international market

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of the manufacturing industry, colleges should pay more attention to improving machine manufacturing and automation technologies, train more professional personnel, and realize the innovative development of machine manufacturing and automation technologies. Colleges and universities are the primary fields to cultivate machine manufacturing and automation personnel and they are also the key factors to determine the overall level of China's machine manufacturing and automation technologies. The innovative development of college teaching will greatly impact on training personnel.

China has already grown into a relatively mature commodity exporting country, but at the current stage, most of the products exported by China are still some light industrial products, which are not irreplaceable in the international market, which makes it difficult to effectively improve China's comprehensive national strength in the international market. The root cause of this problem is that China's machinery manufacturing and automation technology application level is insufficient, the product production efficiency is low, and can not meet the actual needs of the market. The relevant responsible personnel of colleges and universities should correctly recognize the seriousness of this problem and their responsibilities, and achieve comprehensive and innovative reform from the aspects of teaching content and form, so as to further improve the teaching level of machine manufacturing and automation major in colleges and universities and cultivate more professional talents for the country.

3. Discussion on the Innovative Development of Machine Manufacturing and Automation Major

Nowadays, there still exists many colleges not recognizing the importance of machine manufacturing and automation major. In daily teaching, these colleges blindly adopt to traditional teaching methods and contents and they do not actively combine professional skills with the actual social needs, which will not only have a negative impact on college students, but seriously hinder the further development of China's machine manufacturing and automation technologies. Therefore, it is noteworthy to pay more attention to the innovative development of college machine manufacturing and automation at the current stage.

(1) Focus on the Combination of Theory and Practice

At present, colleges and universities are used to excessively relying on theoretical teaching, but neglect practical learning in their machine manufacturing and automation teaching. Students do not practice timely, while they studying theoretical knowledge, which leads to the separation of theory and practice. Many students have learned a lot theories, but they don't know how to apply them into

their actual work and can't judge some existed problems in practice, reducing work's quality and efficiency. In order to solve this problem, teachers need to stress on the holistic view of students at the beginning of teaching. In the process of learning theories, students should regard theory and practice as a whole and carry out active thinking in practice. At the same time, we should also contact the relevant institutions around us, provide good practice training bases for students, help students improve their own working ability in the process of practice learning, strengthen the understanding of theoretical knowledge, and timely discover their own problems, so as to improve the quality and efficiency of mechanical manufacturing and its automation technology teaching in an all-round way.

(2) Pay Attention to Training Students' Innovative Awareness and Ability

In order to achieve sustained and stable development of an industry, it is necessary to keep up with the trend of the times and constantly innovate, and develop the machine manufacturing and automation major. In the actual teaching, colleges and universities can not blindly adhere to the original teaching content, they need to actively guide students to diverge their thinking, and continue to expand on the basis of the existing theoretical system, so as to achieve the continuous updating and development of the theoretical system. The teaching of machine manufacturing and automation also has a high requirement on the creativity and design ability of students. In the actual teaching process, teachers can explain more design principles and design skills for students on the basis of the basic principles of their related professional knowledge. At the same time, they can actively introduce some advanced cases at home and abroad into the classroom. With the analysis of the essence part, not only can we further expand the professional vision of students, but also can better cultivate the creativity of students. In the assessment of academic level, we can not only investigate students' mastery of theoretical knowledge, but also add students' design ability into it as part of the assessment. This will not only test students' learning results better, but also more effectively promote students to carry out innovative thinking and lay a good foundation for the sustainable development of the machine manufacturing and automation major.

(3) Improve the Comprehensive Quality of Teachers and Provide Good Hardware Teaching Facilities

If colleges and universities want to achieve the overall innovation of the teaching system of machine manufacturing and automation major, the first and necessary thing is to set up a high-quality and high-level team of teachers, which have advanced teaching ideas and higher teaching levels, and strive to cultivate high-level professional personnel in mechanical manufacturing and automation major. In order to achieve this goal, teachers in colleges and universities should set up a positive awareness of self-promotion, increase more technical training of

relevant professional knowledge in daily teaching training, and actively contact with the teachers' team in other colleges and universities. College teachers should also learn modestly from the seniors with rich teaching and practical experience, expand exchanges and communication to get common progress and to create more advanced machine manufacturing and automation teaching modes and teaching concepts.

Besides, because of the high requirements for practice in the teaching process of mechanical manufacturing and automation, colleges and universities also need to give more financial support to provide some related equipment for students to carry out practical training. In the face of the problem of students' practical operation exercises, universities in our country usually choose to cooperate with enterprises near colleges and universities in teaching of machine manufacturing and automation to provide places for students to practice and to solve the problem of lack of related hardware equipment in universities. However, such a teaching mode can easily make students excessively pursue practical experience and neglect school work. In order to avoid this problem, colleges and universities can contact surrounding enterprises, purchase enterprise equipment at a relatively low price, and provide students with practical operation. At the same time, colleges and universities can also cooperate with other colleges to realize the common sharing of hardware teaching equipment among colleges and universities, which can not only alleviate the financial pressure of colleges and universities to a great extent, but also provide students with a better practice environment, and effectively promote the interaction and exchange of students among colleges and universities, providing a powerful guarantee for the teaching quality of machine manufacturing and automation major in colleges and universities.

4. Conclusion

As the largest developing country in the world, in order to realize its further development, we can not ignore the research on machine manufacturing and automation technologies. To cultivate more high-quality technical talents, colleges and universities should correctly understand this problem, carry out positive innovation in teaching, constantly improve the existing theoretical system in the practice, and comprehensively improve the quality and efficiency of the teaching of machine manufacturing and automation major in colleges and universities. At the same time, universities need to pay attention to students' practical training, create good training conditions for students through various ways, help students better combine theoretical knowledge with practical work, meet the needs of society, and lay a solid foundation for the development of machine manufacturing and automation major in China.

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