

To the Workpiece Processing Metaphor of the Road to Success——Research Status and Innovation Exploration of Ideological and Political Theory Course “Fundamentals of Mechanical Manufacturing Technology”

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Abstract: This article briefly introduces the definition, development course and development status of curriculum ideological and political. On the basis of predecessors try to carry out the curriculum ideological and political innovation of this course. Using workpiece processing as a way to become talented, the blank is processed step by step into specific mechanical parts, just as the freshmen are trained to become qualified socialist builders and reliable successors with both virtue and talent. In each chapter of the knowledge explanation in the form of metaphor to insert the ideological education of the growth of students. This paper introduces the new ideological and political content of the curriculum in different chapters, which provides a reference for the teachers of “Foundation of Mechanical Manufacturing Technology” and a new idea for the teachers of other courses. Course education is to establish college students ‘correct outlook on life, professional view, world outlook and the socialist core values, let the students’ professional knowledge and ideological and moral development, cultivate Wuxi, love party patriotic, cultural confidence, innovation, rich spirit, assiduously, with technology, qualified socialist builders with both ability and political integrity and reliable successors.

Keywords: Mechanical manufacturing technology basis; Curriculum ideological and political; The educational reform

1. Research background and status quo

1.1 The concept of ideological and political thinking in the curriculum

Curriculum ideological and political thinking is the great innovation of the socialist education cause in the new era. It is a great practice to integrate the Party’s ideological education cause into curriculum teaching. Curriculum ideological and political education requires every college teacher to carry out ideological and political education in each course, that is, all kinds of courses and ideological and political education should be in the same direction, in order to build a whole-person education, whole-course education. The three-complete education pattern of the whole process of education. As the old saying goes: “Only virtue is called a saint, only virtue and death is called a fool, only virtue is called a gentleman, only virtue is called a villain.” Thus, it can be seen that it is very important to educate students with both virtue and ability, and to design and introduce an appropriate and good curriculum ideology and politics into a course is a crucial part of cultivating college students with both virtue and ability.

1.2 Course ideological and political development

Curriculum Ideological and Political Work originated from the National Ideological and Political Work Conference of Colleges and Universities in 2016, which proposed that “in order to meet the needs of students to grow and become talented, all other courses should also keep a good channel and plant a good field of responsibility”. The course was formed at the National Education Conference in 2018, which pointed out that “moral cultivation should be integrated into all aspects of ideological and moral education, cultural and knowledge education, and social practice education, and run through all fields of basic education, vocational education and higher

education. The discipline system, teaching system, textbook system and management system should be designed around this goal. Teachers should teach around this goal and students should learn around this goal. All practices that are not conducive to this goal must be resolutely reversed.” So far, the ideological and political ideas of the course have taken shape. Today, after more than five years of development, curriculum ideology and politics has been piloted in Beijing, Shanghai and other places to the present Ministry of Education overall planning, unified implementation of colleges and universities across the country, from the initial groping forward to the present preliminary maturity. In recent years, curriculum ideology and politics has always been a hot research topic in the educational circle. After sorting out the existing literature, it is found that the current research results mainly focus on the connotation, characteristics, values, approaches and methods of curriculum ideological and political thinking, which provide rich and important theoretical references for curriculum ideological and political thinking. In spite of this, there is still a lot of room for progress in the study of ideological and political thinking in the curriculum, especially the specific ideological and political elements of each course, which is worth further digging.

1.3 Features of the course Fundamentals of Mechanical Manufacturing Technology

Shenyang Institute of Technology is positioned as an application-oriented university, adhering to the principle of “education first, moral education first, quality first, characteristic development”, practicing the educational philosophy of “application first, learning into practice”, and taking “an application-oriented university that enables students to become talented, parents to rest assured and recognized by the society” as its educational tenet. The course “Fundamentals of Mechanical Manufacturing Technology” offered by Shenyang Institute of Technology is the backbone and core course of mechanical majors, mainly teaching the basic knowledge of metal cutting, including the structure and materials of metal cutting tools, metal cutting principles, including cutting process, cutting force, cutting force, cutting force and cutting force. Cutting heat and tool wear, various machine tool introduction, fixture design, process design and machining quality learning. This course is highly theoretical and practical, with many teaching contents, wide range of knowledge and complex knowledge structure, so it is necessary to learn mechanical drawing, interchangeability and tolerance measurement in advance(LI Lianhui&GAO Yang& WANG Fuwei, et al,2019).

2. Curriculum Ideological and political plan

2.1 Ideological and Political thinking of metal cutting tools

This chapter mainly focuses on the selection of appropriate cutting parameters, appropriate tool angles and reasonable tool materials in the cutting process, such as rough machining using large feed, low cutting speed, finish machining using small feed, high cutting speed. The higher the cobalt content in the alloy, the better the toughness, suitable for rough processing, less cobalt for finishing. Our four-year university study is the same. Our school’s educational purpose is “people-oriented, learning to practice”. In order to cultivate students’ hands-on ability, the school organized many teachers to establish clubs and lead them to do design and manufacturing, so that everyone can play with their hands. Each student can choose the most suitable teacher according to their own interests and hobbies and specialties. Just like choosing the most suitable knife, the most suitable teacher can help you play their own specialties and go better in the professional road. Finally, I wish the students to choose the teacher’s skills to learn all hands, with the skills to join the socialist modernization, with our hands together to create our bright future.

2.2 Ideology and Politics of Metal Cutting Principle Course

In this chapter, we study the causes, effects and changes of chip nodules, cutting force, cutting heat and tool wear phenomena, so as to lay a foundation for reasonable selection of tools and cutting parameters, to ensure quality, reduce costs and improve processing efficiency. In the study we should also think deeply, understand the principle, master the method, so that we can learn twice the result with half the effort.

When cutting plastic materials at low speed and continuously, a hard block will appear at the front tool surface out of control due to the extrusion of the material. This hard block goes along with the tool and exists in the whole process. Its advantage is to protect the blade, increase the actual working front Angle, reduce cutting heat and cutting deformation, the harm is to increase the front tool surface wear, resulting in uneven cutting force, affecting the quality of processing. Knowing its advantages and disadvantages, we can use its advantages and avoid its disadvantages as much as possible. Students in the process of success must not be smooth sailing, there are always such difficulties and accidents appear in our life, we should face these difficulties and accidents, understand the coexistence of challenges and opportunities, some people are down by challenges, mediocre, some people grasp the opportunity, towards success.

2.3 Ideological and Political Thinking of metal cutting machine tools

Different workpiece to choose different machine tools, such as according to the size of the workpiece, hardness, processing

requirements to choose the right power, the right size, the right form of machine tools. Our learning is the same, everyone is suitable for different learning methods, we should according to their own characteristics in many successful learning methods to choose the most suitable for their own, so that their road to success faster, better. Lay a solid foundation for taking part in socialist modernization and become a qualified successor of socialism(YU Aibing&WU Ke&LI Jinbao,2022).

2.4 Ideology and Politics of Special fixture design course for machine tools

This chapter introduces the design of the special fixture of machine tool and introduces the concepts related to the fixture. The fixture is the device that ensures the connection between the machine tool and the workpiece. Positioning is to ensure that the workpiece has the correct position relative to the machine or tool. Clamping is to maintain this correct position throughout the machining process through the fixture. How similar are our paths to success? What do we see ourselves as? How do we stick to our life orientation? The workpiece positioning deviation, the size of the processing out of the deviation, our life is often in accordance with our positioning to develop. Whether our positioning is accurate or not is the key factor to whether we can become both virtuous and talented, useful to the country.

3. Summary

This paper summarizes the current research status of ideological and political thinking in the course Foundation of Mechanical Manufacturing Technology, and based on this, proposes a new ideological and political thinking scheme for the course, which makes the course more systematic and complete. Meanwhile, with the help of the relevant knowledge of this course, the ideological and political thinking of the course can be integrated into the course more naturally and vividly in a metaphorical way. Let the students in the study of professional courses at the same time more deeply think about their own life road, how to become talented road should go, but also to the peer teachers to provide a certain reference.

References:

- [1] LI Lianhui, GAO Yang, WANG Fuwei, et al. Research on Ideological and Political Construction of the Course Foundation of Mechanical Manufacturing Technology: From Path Exploration to Preliminary Implementation [J]. Bohai Rim Economic Outlook,2019,(10):195.
- [2]YU Aibing, WU Ke, LI Jinbao. Teaching Design and Practice of Ideological and Political Thinking in the Course of“Fundamentals of Mechanical Manufacturing Technology” [J]. Equipment Manufacturing Technology,2022, (3) :243,244,248.

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