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Ideological and Political Curriculum in Practical Teaching Against the Background of New Engineering

—As an example for experiment course in electronic technology

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***Abstract*—The course ideology and politics under the background of new engineering is an important measure for the country to insist on cultivating people by virtue, to put the theory of ideological and political education into practice, and to run through the whole teaching process. Taking the course of electronic technology experiment as an example, this paper explores the cultivation elements in the course according to the characteristics of the course. Explore the ideological and political elements in practical teaching. The ideological and political ideas of curriculum are conveyed to students through teachers' words and deeds. To equip students with correct values. On the basis of training students' professional knowledge ability, further improve students' comprehensive quality. For today's society to transport high-quality application-oriented technical personnel.**

Keywords—Curriculum Ideological and Political; The new engineering; Electronic Technique; Teaching Practice

I. INTRODUCTION

The ideological and political development of higher education curriculum under the background of new engineering depends on the concentrated embodiment of social development trend and the correct decision and strong support of national leaders. General secretary Jinping Xi stressed at the national conference on ideological and political affairs of colleges and universities that the ideological and political work in colleges and universities should insist on moral cultivation as the central link, run the ideological and political work through the whole process of education and teaching, realize the full process of educating people, all-round educating people, and strive to create a new situation in the development of China's higher education[1].In the traditional higher education mode, ideological and political theory courses exist in a relatively independent form, and students have limitations in their understanding of them. Ideological and political education is regarded as a "brainwashing" ideological education and indoctrination theory [2].

For science and engineering students, the practical requirements of ideological and political education theory will be higher, which will play a positive role in improving students' professional technical level and social competitiveness. Therefore, the ideological education is an urgent need to innovative ideas, build efficient education "courses" education teaching system, in all aspects of school education teaching into education theory, in the guarantee the original core of ideological and political theory education status, on the basis of the professional skills and the coordinated development of education theories, insist on strengthening in the improvement, improve the ideological and political education, pertinence, affinity to cultivate students political education ability, professional ability, social ability, achieve all-round education.

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II. THE PRESENT SITUATION OF IDEOLOGICAL AND POLITICAL EDUCATION OF ELECTRONIC TECHNOLOGY EXPERIMENT COURSE

For a long time, mostly science and engineering course in colleges and universities teachers of professional basic course tend to be more focus on imparting professional knowledge and skills. In their own teaching, they mainly taught theory and experiment for teaching. In the link of graduation design and senior into enterprise production internship practice link is more seriously. But seldom pay attention to students in many other aspects of thinking inspiration and guidance, such as values, personal accomplishment, learning attitude and emotion, etc. Some teachers also say that everybody have different professional, different direction, and the focus is different. The specialized courses and professional basic course teachers are different from the education teachers. They are supposed to do their job. They think that student's thought, value, personal quality is not their responsibility. They should be determined by the political education class specialized course teachers and counselors take responsibility. To a large extent, there is a separation between teaching and educating people, becoming only teaching but not educating people. Even some teachers of specialized courses in some schools take up teaching positions without obtaining the teacher qualification certificate after graduation, with strong professional knowledge and skills, but obvious lack of teaching experience, let alone course ideology and politics [2].

A. Students Learning Attitude is not Correct, Learning Effect needs to be Improved

Nowadays students' learning attitude is not correct and the learning effect is not as good as before.The reasons are as follows.Firstly, the particularity of electronic technology experiment course. Secondly, most college students nowadays prefer freedom to restraint.In addition, the team and collectivism are weak, and the ideology is increasingly diversified.Some students with clear goals set the goal of postgraduate entrance examination soon after they enter the university.Thirdly, some students' motivation is not pure, which is very practical and utilitarian.Study for course credit and scholarships.The percentage of people who are really interested in electrical courses of this major is relatively small.Fourth, most students lack interest in class. Currently, the electronic technology experiment courses are usually demonstrated by teachers and imitated by students.Most experimental results are known, students are not interested in learning [3].

B. The Content and Form of Teaching need to be Improved

The above mentioned electronic technology experiment courses are usually demonstrated by teachers and imitated by students.In this way, it is difficult to mobilize the initiative and enthusiasm of students in learning, so that students' innovative thinking and potential cannot be activated.Electronic technology experiment course is a professional basic course, and there are many classes to learn.Almost all engineering majors take this course.Teachers often have a large number of class hours, and one teacher leads several classes in experimental teaching.In the case of heavy teaching tasks, many teachers use multimedia teaching in order to reduce work intensity.What's more, some teachers do not take the initiative to think about teaching methods and content.The teaching materials have not changed for several years, the knowledge is out of date, and there is a lack of vivid and typical cases to enrich the teaching content. Therefore, it is difficult to adjust the teaching content dynamically based on the actual situation of students and the classroom.

III. APPLICATION OF "CURRICULUM THOUGHTS AND POLITICS" IN ELECTRONIC TECHNOLOGY EXPERIMENT COURSE

As a basic course of engineering students, electronic technology experiment plays a crucial role in cultivating students' professional skills and engineering thinking. This course mainly includes analog electronic technology experiments and digital electronic technology experiments. They are the core basic courses for science and engineering students in our university. Such as Automation, Electronic information engineering, Materials, Robotics, Photoelectric information, Measurement and Control professional. It is a scientific skill course integrating theory and practice. The electronic technology experiment course is mainly studied that applied in many fields, such as communication, automatic control, electronic measurement, computing technology and so on, which constitutes the basic functional circuits of various electronic systems, as well as the basic electronic components that constitute these functional circuits. This course is the cornerstone of various engineering majors and plays a very important role in the professional knowledge structure.

Based on the characteristics of electronic technology experimental course and years of teaching experience, and based on the above purposes, the following thoughts are put forward on how to integrate ideological and political theory into the course:

A. With the Teacher's Own Personality Charm and Rigorous Attitude to Infect Students

"Learn to be a teacher, the body is the model". Teachers' character, knowledge, speech and behavior will exert a subtle influence on college students. Therefore, teachers should infect students with their own personality charm and rigorous attitude towards academic research and play a positive leading role. For example, arrive in the classroom in advance to prepare for class, carefully prepare for class, communicate actively with students after class, and understand students' ideological trends. In this way, teachers lead by example, words and deeds, students will see in the eyes, and then do punctuality, integrity, listen carefully. If teachers not only master the basic theory and skills of this course, but also skillfully deal with the key and difficult knowledge, devote themselves to teaching, and can timely integrate the background of the course and the advanced ideas and methods contained in it into the course, students will be awe-struck. Teachers should improve their moral accomplishment and teaching level unceasingly, actively learn the ideological and political education work conference spirit, from the ideological understanding the significance of education "courses", used to be taught in the usual process in word and deed to practice the concept of "course education", consciously make college students gradually form a good moral character, a positive attitude to life and learning.

B. Update the Curriculum Standards and the Overall Design of Classroom Teaching

- Will course education idea and content into the "electronic technology experiment" course standard, clear political education teaching target, target to build knowledge, ability, quality goals for the ideological system of the trinity, enable students to master the experimental course knowledge of theory and operation, and has good professional personal integrity, professionalism, dedication, unity, cooperation ability, etc." Ideological and political curriculum" is different from "ideological and political curriculum", which does not require teachers to rigidly teach ideological and political knowledge in practical classes, but to subtly integrate ideological and political elements. For example, we can introduce current political contents related to professional knowledge in the classroom, such as the current fierce "sino-us trade war", which involves many core technologies, including China's semiconductor industry. Through this event, students can objectively understand the current situation of chip technology development in China, so that students understand: science and technology prosperity, the national prosperity, science and technology is strong,

the core technology is the country's important. In the face of the current achievements, we should not be the slightest complacent, but also should have a very confident, in a firm self-confidence on the road to constantly improve their own scientific and technological strength.

- The electronic technology experiment course is the research achievement which the older generation scientist and the scholar summarized in the unceasing exploration. Teachers can take this as a starting point to cultivate students' scientific spirit and innovative spirit. The experience of the predecessors in exploring knowledge and pursuing truth, as well as their persistent ideal deeds are introduced into classroom teaching to stimulate the students' fighting spirit.
- Class for the overall design should also with the improvement of curriculum standard, mainly manifests the team cooperation ability, the concrete content in the establishment on collaborative project oriented, guides the student to complete a complete electronic product design process, from conception, design, experiment and evaluation of link layer upon layer, each link has its specific cultivation effect. Firstly, in the conception stage, teachers guide and help students to conduct market analysis on the content of the designed project, understand the existing deficiencies of the product in the market, and define the product design requirements. Secondly, in the design stage, the teacher explains the relevant theoretical knowledge and practical operation skills involved in the project content, and guides the students to master the detection methods of various discrete components and integrated devices, the ability to read diagrams and the design ability of unit circuits. Then, the design, installation and debugging of the project contents are carried out in groups.

C. Mix Online and Offline Teaching

With the development and popularization of multimedia technology and mobile terminal technology, higher education has gradually entered the Internet + teaching mode.Many teaching materials are Shared online.Students can choose the relevant content to study according to their own needs, or study a chapter separately.Teachers carry out teaching activities through the super star learning APP on their mobile phones, such as sharing teaching courseware, conducting in-class tests and even taking exams on their mobile phones.Students and teachers can communicate directly through learning communication, timely reflect their own learning situation and problems encountered, and get the fastest feedback from teachers [4].

For the course of electronic technology experimental , we have begun to explore the teaching link with the help of the network course platform.The platform is used for class attendance, test exercises and in-class exercises.It doesn't take much time, just the best 10 minutes to catch the students' attention, which can reflect the students' mastery of knowledge according to their practice test results.Timely discovery of existing problems, for most students have not mastered the content of the focus on the presentation.Specific examples to explain, to solve the problem.APP is used to issue similar questions for testing, and the learning effect of students is tested in class.This can not only attract the attention of the students who are interested in this course to the greatest extent, but also make the students with mixed attitude have a certain sense of urgency to achieve the best classroom learning effect.

With the advanced teaching design, the ideological and political modules of the curriculum are included in the assessment scheme of electronic technology experiment in the assessment stage, which reflects the unity of "knowledge, skills and attitude", team spirit and innovative spirit. Let students deeply understand the importance of teamwork and innovation spirit in this practical course. The specific course scores are as follows: total course scores = ideological and political assessment *20%+ final assessment *40%+ ordinary times *10%+ assignments and tests *30%.

D. Carry out "Curriculum Thoughts and Politics" with the Teaching Content of Electronic Technology Experiment Course

The author is an ordinary electronic technology experiment course teacher.In her teaching process, she constantly explores how to naturally interspersed some principles about being a human being with professional knowledge.And it can make students empathize and resonate.For example, when teaching the basic amplifier, different types of basic amplifier circuits have different characteristics.Common emitter basic amplifier circuit, the absolute value of the amplification factor is larger, but the input resistance is smaller.The common collector basic amplifier circuit (emitter output), its amplification factor is less than or equal to 1, but its input resistance is relatively large, the output resistance is relatively small.At first glance, these characteristics are the most basic professional knowledge we have learned.But if you put your heart into it, you can find that there are some principles behind these professional knowledge.As the saying goes: god is fair, it gave you beauty, may not give you wisdom, give you wisdom, may not give you a sound body, give you a healthy body, may not give you beauty.A person always has some advantages, but also has some shortcomings, in life should pay attention to be good at giving full play to their due role.

In the teaching process, the author often warns students: learning is to build on some knowledge already mastered.If even the most basic theoretical knowledge and formula do not understand, can not remember, there is no method to solve the problem.In the process of learning, only when students want to learn from the bottom of their hearts, are willing to learn, and internalize in the heart, can they help students improve from pure knowledge to wisdom [5].

E. Use the Advantages of Experts to Encourage Students to Practice More

On weekdays, teachers and students do more spiritual communication.First, teachers encourage students to participate in more electronic technology experts or researchers academic reports.Second, we can create more opportunities to visit enterprises on the spot.Learn practical production cases and

experiences by visiting.Now universities and enterprises vigorously carry out school-enterprise cooperation, so that students can be exposed to practical cases as early as possible, shorten the adaptation period.Third, teachers encourage students to participate in electronic technology-related popular science activities or open elective experiments.For example, participating in college students' innovation and entrepreneurship competition, or even all kinds of college students' competitions at provincial and national levels.The purpose of teaching students knowledge is to benefit mankind, so that they can realize their own value.

IV. SUMMARY

In a word, it is a long and arduous task to integrate thoughts and politics into the practice of basic courses for engineering college students. Of course, in the specific implementation process, each teacher will combine their own advantages and adopt different ways to pass through the ideological and political ideas of the curriculum. In the experiment of electronic technology course, there are many places worth digging, we want to be in daily teaching process to explore unceasingly, the experiment of electronic technology course education also need to develop the graduation requirements of the plan, the teaching goal, curriculum, teaching content and assessment for the combining site, ideological instruction material accumulation, rich teaching methods for teaching, implementing diversification, pervasive and embedded ideological education [6]. The course education to better will be implemented into classroom teaching, to cultivate the technical personnel of having both ability and political integrity.

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