Thoughts on Ideological and Political Education in Professional Courses of IOT from the Perspective of Students

Yuqi An[✉] and Xiaohui Guan

College of Information Engineering, Zhejiang University of Water Resources and Electric Power, Hangzhou, China
{Anyq,guanxh}@zjweu.edu.cn

Abstract. Ideological and political education of curriculum is an important mean to implement moral education. This paper first analyses the characteristics of college students. Then it presents the understanding, feelings and gains of the educates in ideological and political education of professional courses inside and outside classroom teaching. The consciousness of career development planning and the responsibility for the fate of the country can be established.

Keywords: Ideological and political education of professional courses · Internet of things · coordinated development

1 Introduction

In December 2016, General Secretary Xi Jinping pointed out at the National Conference on Ideological and Political Work in Universities [1]: "We should strengthen and improve ideological and political education to meet the demand of students' development with the main channel of good classroom teaching." In 2020, the Ministry of Education issued the Guiding Outline for Ideological and Political Construction of Curriculum in Colleges and Universities [2], which pointed out that the ideological and political teaching of curriculum should be comprehensively promoted in all colleges and universities and all disciplines and majors, should be optimized focusing on political identity, family feelings, cultural literacy, constitutional awareness of the rule of law, moral cultivation and other key points.

As an engineering major, most courses of Internet of Things (IOT) tend to be practical, which should emphasize the combination of classroom lecture and practice [3]. Students should focus on solve resolving problems in real life or give an appropriate explanation. In the meantime, the ideological and political theories are integrated into the teaching process to promote students' knowledge, technology and moral values, which helps to arouse their patriotic feeling and ambition [4, 5].

2   The Characteristics of Contemporary College Students

2.1   Active Thinking But Not Mature

Contemporary college students have active thinking, ambitious goals and fighting spirit, and are willing to compete with others. Moreover, they like things with personality, such as dress, interests, words and deeds. They have a strong sense of self-independence and do not like their thoughts and behaviours to be bound by parents and teachers. At the same time, they lack maturity and stability when thinking about things. They tend to be misled by wrong idea and pursue the luxury material life and form money worship thought. So, they should be guide to establish a correct outlook on values, life and time.

2.2   Desire for Exploration and Practice But Lack of Teamwork Spirit

With the development of modern science and technology, contemporary college students are familiar with all kinds of intelligent instruments, and have curiosity and exploration thoughts about these intelligent technologies. However, most students are self-centred and lack collective sense of honour and social responsibility, so the ideological and political education are needed to cultivate them responsibility, teamwork, self-awareness, living habits, time management and so on.

2.3   Poor Identification Ability

In the context of Internet, the virtual network world has provided people with all kinds of news information, novel and interesting games. College students also can publish all kinds of mood and communicate with each other by Internet. However, the development of network technology is a double-edged sword, students are easy to sink into the new things and all kinds of information in the network world since they are lack of discrimination ability. Thus, it is necessary to look for an effective action to establish a correct world outlook, values and outlook on life, which will affect students' future development.

3   Ideological and Political Education in Curriculum Learning

New Engineering points out that the practicability, intersectionality and comprehensiveness of discipline are required in the future. That is, the Internet of Things (IoT) should update the existing knowledge and actively integrate with other disciplines. It should focus on cultivating talents with strong innovation, multi-disciplinary knowledge and high comprehensive quality for local industry development [6–8]. Therefore, it is necessary that the ideological and political education is integrated into the whole process of professional teaching. A correct outlook on values, life and time can be unconsciously established for students. They can construct the comprehensive professional abilities, such as learning attitude, teamwork, expression writing, and innovation ability, etc. [9, 10]. The teaching objectives and ability training in ideological and political teaching is shown in Fig. 1.
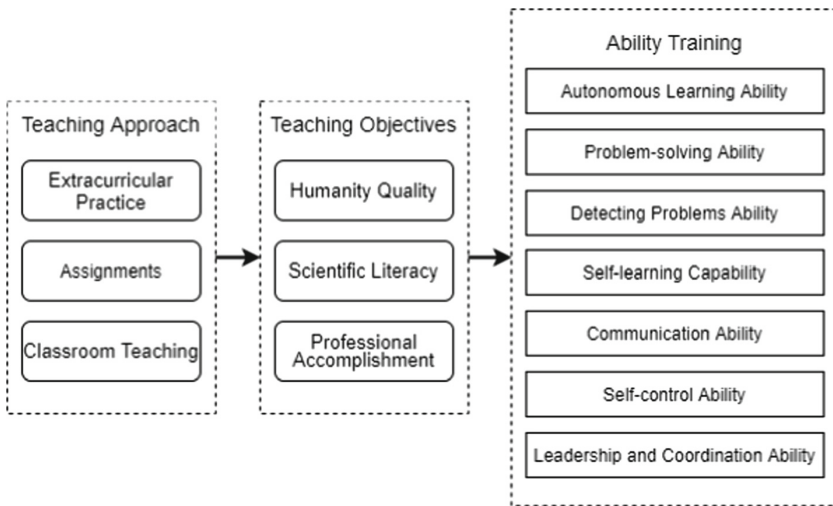
Fig. 1. The teaching objectives and ability training in ideological and political teaching

3.1 Establishing the Connection Between Classroom Learning and Social Development

In teaching process, teachers explain the requirement of society, professional prospects, and the connection between professional courses and the development of society. In this case students can have a right view and can have a deeper awareness of how important their major is for China.

However, the rapid development of modern technology and the promotion of 5G technology make the country, society and people have higher requirements for the connection between the Internet and life. According to HIS, a global industry information key information service provider, the global demand for Internet of things talents will reach more than 10 million people in the next five years. So, talents in IOT engineering are still scarce in the market, the comprehensive requirements of IOT engineering are still high. By this introduction, students will have a strong desire to strengthen the vocational ability and meet social needs. This is the way of ideological and political education of the course, which make a preliminary understanding of the major for future career planning, so that students can realize that the major they study has a promising future.

3.2 Integrating the Homework Content with National Development

Practicing after class is an important means to improve students' ability. Teachers can introduce actual cases and stories, including the national development achievements and hot issues, etc., when assigning homework. For example, in the homework of network communication structure, we import the national overall network layout to deepen the understanding of book knowledge and enhance our global thinking ability from technology, systems to national development. In the homework of introduction to IOT, we

present the liquid level sensor inventor, the game story of 5G, beidou satellite navigation system and other educational well-known events, which can not only expand knowledge, but also increase the thickness of thought. So that students generally respect theoretical knowledge, understand the importance of technological innovation, more importantly, to understand the urgency of the country's current development needs, and their own development with the nation. That is, national pride and responsibility are stimulated when obtaining knowledge and improving skills.

3.3 Making Synergy Between Extracurricular Practice and Career Development

In the process of experiment and practice, the real application projects can present the specific work scene, so in the process of actual operation, students will have a real experience of hardship of national development, which can more effectively stimulate their feelings and patriotism for occupation and nation. Under the guidance of the teacher, the awareness and innovation of finding and thinking solutions to problems can be cultivated, so as the thinking dimension of using the knowledge learned to meet the needs of the country is extended. Meanwhile the practice of project makes students get a sense of achievement and strengthen self-confidence. They can play the subjective role in innovation to analyse and solve the difficulties in the process of practice.

4 The Effect of Ideological and Political Teaching

As the Internet of Things is an interdisciplinary discipline, its core mainly covers sensor technology, electronic technology, communication technology, computer technology and automatic control technology, etc., so the knowledge will be boring and difficult. But after joining the ideological education, the lesson is no longer boring and hard to understand through actual analysis of various examples. This facilitates the deep understanding how to apply what they learn. Consequently, students have increased interests for profession, and have the courage to make innovations by using existing technologies, thus improving the self-belief, executive power and software application proficiency.

On the other hand, the teaching cases can set up the overall cognitive for IOT, which can cultivate the systemic thinking and to systematically deal with problems. Meanwhile, when writing all kinds of experiment reports, the writing ability and the habit of carefully doing things are formed. It is helpful to reduce unnecessary mistakes in our work in the future.

With the combination of ideological and political and specialized content, students can have more understanding of country. For example, the development of national science and technology can cause the concern about national current affairs, so as students can establish the correct world outlook on life and values, possess the correct professional patriotism.

5 Conclusions

At present, the ideological and political theories teaching of professional courses is an important and difficult project for colleges and universities to cultivate talents. It is also

a new requirement proposed by the country and society for higher education in the new era. Its implementation requires that college teachers should have a deep understanding of ideological and political education and have the ability to design courses while integrating ideological and political theories. Meanwhile, it also requires students' active cooperation and support. Students are the main body of education, who are witness to China gradually becoming strong. Their thoughts, feelings and actions are easily impacted by foreign ideology and culture. We should realize the particularity and importance of ideological education. The students' steady development affects the development orientation of the state and society in the future.

Now the ideological and political theories teaching of professional courses is encouraged by education departments at all levels. We should grasp the opportunity and set up the correct outlook for honour and dishonour and the social sense of responsibility. And Internet of things engineering is oriented to the needs of the development of national emerging industries. We will make great efforts become the talents of having both ability and political integrity for the development of the society.

References

1. Wu, J., & Hu, H. (2016). At the National Conference on Ideological and Political Work in Colleges and Universities, Xi Jinping stressed that ideological and political work should run through the whole process of education and teaching to create a new situation for the development of Higher education in China. *China Higher Education*, *24*, 5–7.
2. Gao, N., & Wang, X. Z. (2020). A comprehensive grasp of the theory, integrity and systematization of the guiding outline of ideological and political construction in college curriculum. *China University Teaching, 09*, 17–22.
3. Gong, L., Sun, Z., & Yang, S. (2011). *Internet of Things Technology, 11*(04), 110–112.
4. Nie, X. (2021). A study of blended teaching practice based on BOPPPS from the perspective of curriculum ideology and politics: A case study of "Data Structure and Algorithm". *Journal of Science and Education, 05*, 100–102.
5. Li, Y., & Yao, P. (2021). The path of "curriculum ideology and politics" in medical vocational colleges – based on the background of "Internet+". *Journal of Liaoning Higher Vocational College*, *23*(05), 75–78.
6. Ye, T., Xu, Y., Zhang, H., Wu, Y., & Wang, Y. (2021). *Computer Education, 05*, 158–161.
7. Fan, S. (2021). Exploration of project-based teaching mode based on work process – A case study of integrated practical training course of Internet of Things Engineering. *Modern Vocational Education, 16*, 40–41.
8. Yang, S., Huang, W., Shi, F., Wang, X, & Wen, X. (2021). *Internet of Things Technology, 11*(04), 113–114+117.
9. Zhang, D. (2021). Ideological and Political Education is the fundamental principles of morality education. *China's Higher Education Research*, *01*, 5–9. https://doi.org/10.16298/j.carolcarrollnki.1004-3667.2021.01.02
10. Han, X. (2019). Promoting practice and innovation of moral cultivation through curriculum ideology and politics. *China Higher Education, 23*, 12–14.