

Research on the Teaching Reform of "Curriculum Ideology and Politics" for Engineering Postgraduates

Xiaodong Yu, Dong Xia, Shulin Liu, Lingyan Hao and Yue Zhang

School of Electrical Engineering and automation, Qilu University of Technology (Shandong Academy of Sciences), Jinan, 250353, China

Abstract

There are some difficulties in "curriculum ideology and politics" for engineering postgraduates. The professional courses of engineering are highly professional, with many theorems, formulas and charts, which is difficult to integrate with the content of ideological and political education. This paper makes an in-depth study on the teaching reform of curriculum ideology and politics of engineering postgraduate courses, and explores a new model of curriculum ideology and politics reform in some aspects of cultivation such as theoretical courses, thesis writing, teaching methods and the tutors' ability to establish morality and cultivate people, hoping to provide enlightenment for the further implementation, popularization and application of engineering postgraduate courses.

Keywords

Curriculum ideology and politics; Engineering postgraduate student; Research on teaching reform.

1. Introduction

In 2016, general secretary Xi Jinping stressed the importance of ideological and political work throughout the whole process of education and teaching, which created a new situation in the development of higher education in China. The fundamental problem of cultivating what people, how to cultivate people and for whom to cultivate people was solved. Then it opened the curriculum ideology and politics reform in Chinese colleges and universities.

At present, the research on curriculum ideology and politics work in colleges and universities is more focused on undergraduate, and there is relatively little discussion on curriculum ideology and politics work related to postgraduate students. In particular, there are some difficulties in the "curriculum ideology and politics" of engineering postgraduates. The professional courses of engineering are highly professional, with many theorems, formulas and charts, which is difficult to integrate with the content of ideological and political education. Giving full play to the role of ideological and political education of engineering postgraduate courses and achieving the same frequency resonance between scientific and technological progress and moral education is a feasible way to cultivate a new generation of engineering talents. Although the "curriculum ideology and politics" of engineering postgraduates is difficult, it is indeed a very important and imperative task.

The existing problems of ideological and political education in engineering courses are as follows: first, in terms of educational concept, the concept of ideological and political education in postgraduate courses has not been fully established. Second, in terms of team building, most postgraduate tutors still have a one-sided understanding of their own responsibilities, and believe that they have unshirkable responsibilities in professional and academic research learning, while students' life, psychology and value shaping do not belong to their main responsibilities. Third, the excavation of ideological and political elements of professional

courses is not deep and comprehensive. On the one hand, professional courses are more technical and professional, and there is less appropriate angle to explore the ideological and political elements behind them; On the other hand, the professional course teachers themselves don't have the ideological and political education background. They have a poor understanding of the ideological and political factors contained in professional knowledge, and are easy to fall into a bottleneck in their ability.

2. The Construction of the "Curriculum Ideology and Politics" for Engineering Postgraduates

"Curriculum ideology and politics" for engineering postgraduates includes the following aspects: the design of theoretical course; the ideological and political education in thesis writing and other training parts; improve the ideological and political level of postgraduate tutors; improve the evaluation system.

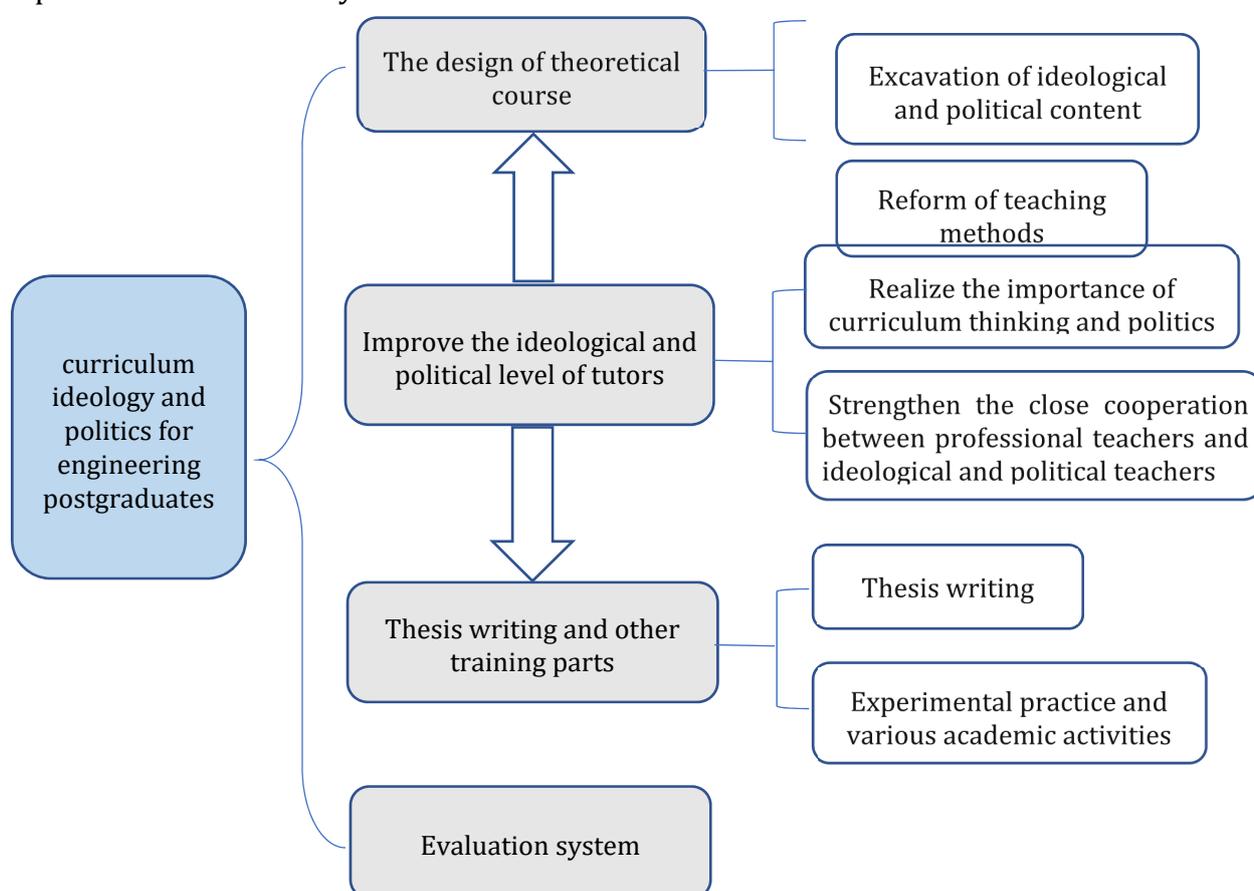


Figure 1. The structure of curriculum ideology and politics for engineering postgraduate

3. The Design of Theoretical Course

3.1. Ideological and Political Content of the Course

There are commonalities between engineering postgraduate professional courses and ideological and political courses in terms of training objectives. Although engineering postgraduate professional courses and ideological and political courses belong to engineering and humanities respectively. However, their common goal is to cultivate high-quality compound technical talents with correct world outlook, outlook on life and values, healthy professional ethics and scientific belief, and both morality and ability.

engineering postgraduate courses contain many ideological and political elements. It is feasible to implement ideological and political education in engineering postgraduate courses by deeply excavating the elements of Ideological and political education and reasonably designing the teaching process. The organic integration of the two can not only better improve the professional ability of postgraduate students, but also help postgraduate students establish correct values, outlook on life, enhance cultural self-confidence and so on.

As long as the engineering postgraduate professional courses are carefully studied and deeply excavated, many elements of ideological and political education can be found. Deeply excavating the internal relationship between the core knowledge points of postgraduate courses and ideological politics, can achieve the best teaching effect, improve the teaching quality of postgraduate students and achieve the educational goal of building morality and cultivating people.

Taking modern power system analysis as an example, combined with the knowledge points of engineering professional courses, deeply excavate the connotation of ideological and political education of professional courses and find appropriate entry points. Examples are as follows:

Table 1. Example of ideological and political contents

Course name	Knowledge points	Ideological and political elements
Modern power system analysis	Power system power flow calculation	It is the same as the power flow of the power system. Everything must follow certain laws. If you don't follow the rules, you can't make a circle. You should abide by certain laws and regulations and a series of rules within a certain framework, so that we can work and live normally and orderly in the society.
	Basic laws of electromagnetism	The establishment of any scientific law and all major scientific discoveries are completed through the hard accumulation of one or several generations and according to the previous research results. Learn the scientific spirit of scientists' pursuit of truth, courage to innovate and rigorous scholarship, and lead students to form correct academic attitude and values.
	Development and current situation of UHV transmission	Understand the development process of transmission line voltage level in China, understand the process of UHV power grid from "follow" to "lead", cultivate students' patriotism and national pride, stimulate industry honor, enhance innovation consciousness and have a positive spirit.
	Power system security analysis	Like the security domain of the power system, everything should operate within a certain security range, and people are the same. We should have a bottom line in life and learning, a moral bottom line and an academic bottom line.
	Fault analysis	Adopt the contradictory viewpoint of materialist dialectics. It shows that all things contain two aspects of both opposition and unity.
	New energy such as wind power and solar power generation	New energy power generation will not pollute the environment, cultivate students' awareness of energy conservation and environmental protection, and increase students' sense of social responsibility and professional mission.

3.2. Reform of Teaching Methods

Pay attention to the diversity of classroom forms and the effectiveness of discourse communication, avoid additional and label rigid preaching, and deeply analyze the learning needs, psychological characteristics, growth law and value orientation of postgraduates, so as

to trigger the knowledge resonance, emotional resonance and value resonance of postgraduates.

"Curriculum ideology and politics" of professional courses should be combined with majors and carried out in the way of "moistening things silently". We must not be blunt and long winded, otherwise the professional class is not good and the ideological and political effect can not be achieved. "Curriculum ideology and politics" should not be a simple transplantation of the teaching content of ideological and political course, but should be transmitted to students in the form of "moistening things silently" through teachers' words and deeds and professional teaching.

In the network era, the interactive communication between teachers and students is more convenient and fast. There are wechat group, QQ group, course group communication and other ways. Teachers can grasp the students' ideological status in time, find the students' problems in learning, thought and life in time and give them some guidance.

4. Ideological and Political Education in Thesis Writing and Other Training Links

The characteristics of engineering postgraduate students determine that they spend most of their time writing papers, doing professional experimental practice and participating in various academic activities, which is often neglected in the research of "curriculum ideology and politics". In fact, this is a good opportunity for students to carry out ideological and political education. When guiding postgraduate thesis writing and other links, tutors should teach by example, cultivate postgraduate students' rigorous and serious academic attitude and realistic and pragmatic scientific spirit, consciously abide by scientific research integrity and academic ethics, consciously maintain the sanctity, purity and seriousness of academic undertakings, and eliminate academic misconduct.

5. Improve the Ideological and Political Level of Postgraduate Tutors

First, in terms of educational concept, the concept of ideological and political education in postgraduate courses has not been fully established. Second, most postgraduate tutors still have a one-sided understanding of their own responsibilities, and believe that they have unshirkable responsibilities in professional and scientific research learning, while students' life, psychology and value shaping do not belong to their main responsibilities.

Postgraduate tutors not only teach students professional knowledge, but also be their ideological tutors. Their ideological and political quality directly affects the cultivation of postgraduate students and the realization of the fundamental goal of building morality and cultivating people in colleges and universities. To improve the ideological and political level of postgraduate tutors, we should start from the following aspects.

5.1. Realize the Importance

To change the ideological concept of tutors, we should deeply realize the importance of "curriculum ideology and politics".

Tutors are the first responsible person for postgraduate. Tutors should not only impart professional knowledge, but also improve the ideological and political quality of postgraduates, cultivate their academic innovation ability, cultivate their practical innovation ability, enhance their sense of social responsibility, guide postgraduates to abide by academic ethics, and pay attention to humanistic care for postgraduates. The tutor's guidance process for postgraduate thesis writing is the concentrated embodiment of the tutor's words and deeds, and it is a big course. Therefore, in order to deepen the reform of "curriculum ideology and politics" of

postgraduates, we should pay attention to improving the tutor's ability to establish morality and cultivate people.

5.2. Improve Political Quality

Tutors should strengthen the study of ideological and political theory and improve their own political quality. Deeply understand the political theories, lines, principles and policies of the government, constantly improve their political theory literacy, enhance their ability to judge the situation, decide problems, and improve their political awareness and ability to control their work. Strengthen professional learning and strive to improve their own teaching level. Through learning and training, apply theory to practice and constantly improve their own quality and ability. Continuously improve their theoretical level and professional ability. Strictly insist on the academic morals and resist academic corruption.

5.3. Cooperation with Ideological and Political Teachers

Strengthen the close cooperation between professional teachers and ideological and political teachers. Professional teachers have limited ability to master the system core and development trend of ideological and political content, which is less than the professional sensitivity of ideological and political teachers. In order to better excavate the ideological and political elements in professional courses, professional teachers also need the guidance and help of ideological and political teachers. It is very necessary to strengthen the close cooperation between professional teachers and ideological and political teachers.

6. Improve the Evaluation System

The purpose of evaluation is to investigate the implementation effect of "course ideological politics education" and its impact on postgraduates, so as to further improve the design and implementation of "course ideological politics education" in the future. The evaluation method and emphasis will also change. The evaluation of the teaching system with the ultimate goal of building morality and cultivating people is no longer focused on scores and mastering professional knowledge itself, but on the improvement of core literacy in the dimensions of learning ability, logical reasoning ability, teamwork ability, innovation ability and academic ethics. The way of evaluation is no longer only focusing on score and thesis, but combining result evaluation with process evaluation, focusing more on process evaluation. The degree of initiative of postgraduate students in the learning process and the degree of cooperation in practice will become an important dimension of evaluation.

7. Conclusion

The importance of curriculum ideology and politics for postgraduates student is self-evident. Carrying out the teaching reform of "curriculum ideology and politics" for postgraduates in engineering colleges and universities is an important task to improve the educational level of postgraduates in China. This paper studies the reform of curriculum ideology and politics of engineering postgraduate, and discusses it from the aspects of training links such as theory teaching, thesis writing, the improvement of moral cultivation level of postgraduate tutors and the reform of evaluation system, hoping to provide enlightenment for the further implementation of curriculum ideology and politics of postgraduate under the new situation and its popularization and application in the future.

Acknowledgments

Project Supported by Shandong postgraduate education quality improvement plan (SDYJG19123, Research on curriculum ideology and politics education reform of engineering postgraduate).

Project Supported by the 13th five-year plan of Educational Science in Shandong Province (YC2019382, Research on the construction and application of intelligent space teaching system).

Project Supported by the ideological and political education reform project of Qilu University of Technology (2020szzx05, Research on the construction and implementation of ideological and political teaching system of engineering courses)

References

- [1] Gao Deyi, Zong Aidong. From ideological and political curriculum to curriculum ideology and politics: constructing the curriculum system of ideological and political education in colleges and universities from a strategic perspective [J]. China Higher Education, vol.1 (2017), p.43-46.
- [2] Liu Shuming, Yan Jufang, Zhang Dingling. On the implementing strategies of ideological and political education in universities [J]. Theory and Practice of Education, vol.15(2019), p.44-46.
- [3] Xu Shulin. Course Ideological and Political Education Mode of the Trinity in "Theoretical Course, Practical Teaching and Cloud Space"[J]. International Journal of Social Science and Education Research, vol. 4(2021), p.26-34.
- [4] Dong Xia, Yu Xiaodong, Hao Lingyan, et al: Constructions scheme of curriculum ideology and politics teaching system for engineering courses: Taking Electrical Machinery Course as an Example[J]. International Journal of Social Science and Education Research, vol. 4 (2021), p.174-179.
- [5] Chen Hang. The exploration and practice of curriculum ideology and politics in mathematics[J]. china university teaching, (2020) ,No.11, p.44-49.
- [6] Wang Xi. Preliminary study on integration of ideological, political courses into postgraduate curriculum system[J]. Journal of graduate education, (2019) ,No. 4, p. 64-68+75.