

Research on Constructing Double Closed-Loop Control System of “Course Ideological and Political Education” in Practical Teaching of Architectural Universities

Wei Hou

Marxism Institute, Shenyang Jianzhu University, Shenyang, China

Keywords: Architectural colleges, Course ideological and political education, Double closed loop control system

Abstract: On the basis of previous studies on “Course ideological and political education”, based on the concept of “Course ideological and political education “in architecture colleges and universities, we reconstruct the inherent logic of practical teaching and moral education. With internal logic as the main line, according to the principle of cybernetics, we comb “Course ideological and political education” double closed-loop control system, constructing a double closed-loop control system of “Course ideological and political education” in the practice teaching of architecture professional. We also select practical courses of architecture colleges as an experimental base and conduct empirical analysis on the control system. According to the law, this paper proposes a guarantee mechanism for constructing a double closed-loop control system for the practical teaching of curriculum in colleges and universities.

1. Introduction

In recent years, with the rapid development of national infrastructure investment construction and the strong leadership of the three strategies of “Beijing-Tianjin-Hebei coordinated development”, “Yangtze River Economic Belt” and “One Belt, One Road”, China's construction industry has developed rapidly. The construction industry currently needs a large number of new construction talents with strong business capability, responsibility, strong sense of industry responsibility and adapting ability to the development needs of the industry. How to train a group of construction talents that meet the needs of the times and the development of the industry has become an important issue that needs to be solved in current construction universities. On March 18th, 2019, General Secretary Xi Jinping re-emphasized at the symposium of the school ideological and political theory class held by the school, which was to preside over the training of a large number of high-quality talents with “Germany and France”. “Course ideological and political education” is to use teaching as a starting point, focus on optimizing curriculum, sorting out the ideological and political education elements and the ideological and political education functions contained in professional courses, and integrating into all aspects of classroom teaching to realize the organic unity of ideological and political education and knowledge system education. The logical thinking of the construction of “Course ideological and political education” fully embodies the value of connecting ideological and political work through the university education system and the personnel training system. In the construction of talents in architectural colleges and universities, through the professional courses to impart professional knowledge, we must pay more attention to the guidance and ability of young students, and cultivate talents in the construction industry in the practice of architecture. It is of great significance to improve the quality of talents in the construction industry by creating a “Course ideological and political education” and integrating the ideological and political teaching into the professional practice curriculum.

2. Review of the Status Quo of Research At Home and Abroad

Foreign scholars' researches on moral education of architectural practitioners mainly focus on the reform of the teaching methods of moral education in construction practitioners and the integration

of professional moral education. Through the dissertation and the book “Architectural Ethics or Architectural Morality: Western Architectural Ethics Ethical Concepts and Their Use Contexts to Analyze Architectural Theory”, “Architectural Lights of the Seventh Anniversary”, we can find that in the United Kingdom, the cultivation of professional ethics of construction students is integrated into the educational evaluation system of sustainable quantifiable assessment, and the cultivation of students' professional ethics is carried out through the quantitative evaluation of morality or ethics in the course design and work design completed by students. The United States conducts a study of professional ethics courses for engineers, and it is more inclined to case study research on philosophical issues and ethical issues.

The study of architectural ethics in China's architectural universities is still in its infancy compared with Western countries. However, in recent years, a series of research results by professors such as Professor Li Bocong have also led to the philosophical thinking and research on the professional ethics of engineers. In terms of teaching practice, the current academic circles mainly adopt the method of “invisible embedding” to integrate thoughts into the teaching curriculum and realize “Course ideological and political education “. In the architectural majors of colleges and universities, the examples of “invisible embedding” and “Course ideological and political education” include: The School of Architecture and Art of Dalian University of Technology promote the reform of “Course Ideological and Political Education” and insist that “all courses have educational function, all teachers have the responsibility of educating people, deeply digging into the ideological and political education elements contained in the architectural professional courses is needed so that the architectural professional courses and the ideological and political theory courses form a synergistic effect, and the whole staff cultivating students in an all-around way in every process will be realized. Anhui University of Architecture designed the “Implementation Plan for the Ideological and Political Education of Anhui University of Architecture”, striving to have Marxist value guidance from the source, goal and cultivation process of the course, and upgrade from the original system of learn, evaluation and education to form “learn, evaluation, ethics” system.

At present, the “Course ideological and political education” is still only at the level of practical exploration. There is no relevant the study on how to sublimate the theory on the basis of practice, and construct a control system suitable for the practical teaching of curriculum in the course of curriculum, and guide the practice. Based on the internal logic of practical teaching and moral education, this paper draws on computer control technology and process control principle, and constructs a double closed-loop control system of “Course ideological and political education” in the practice teaching of architecture colleges and universities, and strives to guide the practice teaching of architecture colleges.

3. Research Hypothesis

(1) The construction of “Course ideological and political education” in Practical Courses in Architectural Colleges is highly similar to the operation mechanism of the “double closed loop control” system. Based on the principle of cybernetics, the double closed loop control system has two working controllers connected in series, two detectors and two control valves forming two loops of the main and secondary loop (namely the inner loop and the outer loop). In the “Course ideological and political education” construction system of practical courses in architecture colleges, ideological and political education is the inner loop, the party branch leads the inner loop controller, the students' ideological and political state is the sensor, and the professional practice curriculum education is the outer loop. The professional class teacher leads the outer ring controller, and the student's professional ability is the sensor.

(2) Ideological and political course teachers can grasp the training objectives of specialized courses and actively participate in professional practical courses to effectively accompany them. The prerequisite for the integration of professional practice courses into ideological and political education is that teachers of ideological and political courses can grasp the training objectives of professional courses and organically integrate them with ideological and political elements, so as to

lead students in the accompanying process of professional practice courses.

4. The Construction of “Course Ideological and Political Education” Double Closed-Loop Control System

(1) Reconstruct the internal logic between practical teaching and moral education based on the concept of “Course ideological and political education” in architectural colleges. Cultivation goal is the foundation of a school, which is of great significance to the development of cultivation plan and the selection of teaching content. The training goal of architecture colleges and universities is to cultivate the architectural talents that meet the needs of the Times and the development of the industry. “Course ideological and political education” refers to a comprehensive educational concept that combines all kinds of courses with ideological and political theory courses in the form of constructing a pattern of educating all members in the whole process and all courses, forming a synergistic effect and taking “building morality and cultivating people” as the fundamental task of education. According to the simple view of “unity of knowledge and action” in China, the direct purpose of practical teaching in architecture colleges and universities is to guide students to verify the theory of classroom construction and cultivate their cognitive and operational abilities. To meet the demand for general talents to realize the great Chinese dream “know nobuyuki”, the deep purpose of practical teaching in architecture colleges is the internalization and the externalization of the value for the teachers through the ideological class and that the college students consciously use Marxist theory and methods to construct professional cognition and guide professional behavior, and then cultivate college students to grow into talents needed by the country and society.

(2) Based on the principle of cybernetics, this paper combs the double closed-loop control system of “Course ideological and political education” and constructs a double closed-loop control system of “Course ideological and political education” in the practical teaching of architecture. Based on the internal logic of practical teaching and moral education, this paper draws on the computer control technology and process control program and combs the double closed-loop principle of “Course ideological and political education”, that is, the curriculum-Sishang double closed loop-feed forward control system. The specific steps of constructing the “Course Ideological and Political” double closed-loop control system are as follows: first, setting link. Through the setting process, the teaching thoughts, teaching contents and teaching objectives of the practical courses of colleges and universities are clarified, so as to extract the practical course nodes that can carry out moral education; secondly, inner ring operation, that is to construct a closed loop that controls and guides students' political and ideological state. In the specific operation, the party branch is effectively guided as the state of mind controller, and the ideological and political teacher accompanying practice teaching is used as an actuator to timely grasp the students' state of mind and construct a feed forward prediction. The system, based on the teacher's observation and understanding, diagnoses the possible problems of the students' “know nobuyuki”, and informs the feedback feed-forward control system, so that the party branch can conduct value guidance in time through the ideological and political class teachers; thirdly, the outer ring operation, that is, construct a loop that effectively monitors the state of student expertise. Through the effective guidance of professional teachers and the demand for market demand information, the students who have improved their political ideology in the inner ring operation will be guided and controlled by the professional knowledge ability, and finally the ideological and political construction of the course will be realized.

(3) Select the “production practice” course of civil engineering major in architecture colleges as the experimental base and carry out empirical analysis on the control system. The production cognition practice course of civil engineering major of Shenyang Jianzhu University was selected as the object, and the double closed-loop control system of “Course ideological and political education” was constructed. first, set the link. Based on the goal of the “production internship” course of civil engineering, that is, to cultivate students' green construction theory and thinking, the ideological and political teachers take the protection of the environment and achieve sustainable development as the entry point to carry out the design of the practical curriculum moral education system.

Secondly, inner ring operation. The Party Branch of the School of Civil Engineering is responsible for the top-level design of the nature of the practical curriculum, clarifying the specific work process of the “production internship” curriculum, and based on the work arrangement of the party branch, combined with the teachers' expertise of the ideological and political course, selecting the teachers of the ideological and political course to accompany the practical teaching. The teacher timely grasps the students' state of mind through companionship and puts feedback to the feedforward control system. The feed forward control system adjusts the leading method and focus in time through diagnosis, and achieves targeted adjustment and control; thirdly, outer ring operation. The professional practice teachers of the Civil Engineering College combine professional knowledge and skill requirements to train professional students with improved political ideology through the timely grasp of market demand and national talent training direction to realize the fusion of professional practice courses and ideological and political construction.

5. Construct the Guarantee Mechanism of the Double Closed-Loop Control System of Curriculum Thinking in the Practice of Architecture Colleges and Universities

Based on the characteristics of the three-closed system of “ Course ideological and political education” double closed-loop control system, such as strict organization, multiple dimensions, new perspectives and wide time zones, in order to realize the organic unification of inner and outer rings, it is necessary to construct a “closed-loop control system”. The following aspects of the safeguard mechanism should be stressed:

5.1 Grasp the Construction and Strengthen the Guidance

The difference between the “Course ideological and political education” double closed-loop system and the general course closed-loop system is that the double closed-loop system is embedded in the inner circle of ideological and political education, adding the branch guiding signal and the feed forward prediction link, and the party branch is carrying out the top-level design to effectively realize the curriculum thinking. Politics plays a very important role, which requires effective use of the effective leadership of the party branch. In the specific operation, the first is that the party branch should make efforts to grasp its own construction. We will optimize the structure of the leadership team of the Party branch, and select those who are politically reliable, competent in ability, and who want to be leaders to be in the grassroots leadership positions in accordance with the principle of both ability and political integrity. At the same time, we must ensure that the party organizations persist in their study, consolidate the theoretical and cultural level of the party members of the party organization, improve the ability of grassroots party members and cadres to scientifically judge the situation, and enhance their awareness and ability to govern. Second, the party branch should enhance the top-level design capabilities: clarify the ideological and political teaching objectives of the curriculum, carry out the teaching effect that the ideological and political curriculums should achieve, and how to carry out the ideological and political works in the curriculum. At the same time, we must do a good job in organizing and coordinating the work to ensure that the ideological and political teachers can participate in the curriculum ideological and political teaching, and in the process of companionship to chieve the desired effect.

5.2 Lead by Example, Organic Integration

The effective companionship of the teachers in the ideological and political class is the breakthrough and operation platform for the inner ring to operate. In view of this, it is necessary to encourage the teachers of the ideological and political class to participate in the educational activities led by the value of the accompanying internship. The requirements of the ideological and political class teachers not only have a high level of business literacy, but also master all the business qualities required for the ideological and political course teaching. The ideological and political class teachers must have a certain understanding of the participating practical courses, know and grasp knowledge of certain professional courses, find the connecting points related to ideological and political courses in the professional courses in the teaching of ideology and politics.

The teachers of ideological and political courses must have the ability to fully grasp the state of students' minds and achieve organic integration with the student groups.

6. Conclusion

In the context of the country's development of a large number of high-level architectural talents, this paper proposes to construct the concept of "curriculum thinking". "Course Ideological Management" is to use teaching as a starting point, focus on optimizing curriculum, sorting out ideological and political education elements and ideological and political education functions contained in professional courses, and integrate into all aspects of classroom teaching to realize ideological and political education and knowledge system. The organic integration of ideological and political teaching into professional practice courses is of great significance to improving the quality of talents in the construction industry.

Acknowledgment

Sources of the project:

- (1) Education and Research Project of China Construction Education Association (2019157) in 2019;
- (2) Graduate Student Enrollment Quality Project in Liaoning Province (YZ2018YB035):
- (3) Liaoning Provincial Social Science Planning Fund Project (L18BSZ013)

References

- [1] Li Bocong. Strive to open up the field of engineering philosophy [J]. Research on Dialectics of Nature. 2002(07).
- [2] Qin Hongling. The ethical implication of architecture [M]. China Building Industry Press, 2006.
- [3] Zhang Hengli, Xu Muxuan, Wang Wei. Analysis of American Engineering Ethics Teaching Model [J]. Research on Dialectics of Nature. 2017(11).
- [4] Han Xianzhou. Several key issues that need to be grasped in deepening the construction of "course ideological and political administration" [J]. Journal of Beijing Union University 2019 (4).
- [5] Li Bing. Research on the practice teaching of vocational colleges based on the principle of "double closed loop control" [J]. Science and Technology Information 2016 (12).
- [6] Bao Feng, Yan Yan. Based on the principle of "double closed loop control", the quality assurance system of secondary vocational schools in school [J]. Modern Education Management 2011 (6).