

Teaching practice research of higher vocational course the inspection and repair of automobile comfort and safety system in moral education

Yan Zhang*, Miao Xu, Xiangzhou Deng, Yan Wei, and Yuyong Han

Zao Zhuang Vocational College of Science and Technology, Teng Zhou, Shan Dong, China 277569

Abstract. This article aims to study how to integrate the educational goal of cultivating talents through moral cultivation with the theoretical and practical teaching of the professional course. In order to realize a new teaching pattern of education, the study combined the professional course teaching with the ideological and political theory course teaching during the research process. Based on the practical teaching cases, this study followed the principle of combining qualitative and quantitative researches. The paper adopted several effective methods such as observation method, literature research method and case analysis method. It sums up the implementation approach of curriculum ideological and political construction strategy of "three integrations, two innovations and one connection", so as to fulfill the fundamental task of establishing morality and cultivating talents.

1 Introduction

The suggestions on promoting the high quality development of ShanDong higher education in the new era encourages professional teachers to dig deep for the moral education elements of the professional courses, introduce a group of excellent professional courses with remarkable education quality and build a series of demonstration courses in order to form a new educational pattern of integrating ideological and political theory courses with professional courses which share the common educational goal^[1]. Based on this document, *The Inspection and Repair of Automobile Comfort and Safety System Course* firstly formed a teaching team by the teachers not only from the professional courses but also from the ideological and political theory courses. The ideological teachers were responsible for the interpretation of some political theories and explored the ideological elements with the specialized course teachers in teaching ways, methods and the principle of integration. Through this kind of deep communication, the integration of ideological and political courses and specialized courses which had the same education goals was firmly realized.

* Corresponding author: 123156222@qq.com

2 The implementation concept of curriculum ideology and politics

In the process of the ideological and political course implementation of *Maintenance of Automobile Comfort and Safety System* major in our college, the top-level design was always centered on the issues about "what kind of students should we cultivate", "for whom that we cultivate students" and "how should we cultivate them" and we constructed the curriculum from three-dimensional ideological and political lines to establish the implementation concept of Curriculum Ideology and Politics in order to serve the training objectives of the major. According to the characteristics of the course *The Inspection and Repair of Automobile Comfort and Safety System*, the course system called "5321" had been established, which consisted of five content modules, three ideological and political teaching lines, one assessment and evaluation system of virtue and technology, and one students-centered educational fundamentality. Based on this system, the teaching implementation standards of this course were formulated to promote the practical research of course ideological and political teaching centering on the three-dimensional ideological and political educational lines.

3 The ideological and political teaching implementation of the course

Based on the specialty orientation and course objectives, the curriculum team determined the concept, purpose and goal of curriculum ideological and political implementation, and refined the main ideological and political scope of the curriculum. Teaching contents were rearranged and the appropriate ideological and political materials were carefully selected which were integrated with the new media. These methods finally helped to achieve classroom interaction and teaching innovation; At the end of the second year of teaching practice, the ideological and political teaching implementation strategy of the course was preliminarily formed. Firstly, we integrated the teaching team; Secondly, the teaching contents were rearranged according to the course characteristics and ideological and political teaching objectives. The teaching resources and ideological and political objectives were integrated to extract the core elements of ideological and political education of this course: value guidance, professional ethics, safety awareness and craftsmanship spirit; Furthermore, in order to play a valuable role in the curriculum education better, the ideological and political objectives of the curriculum were decomposed into teaching units, and education materials were collected in accordance with knowledge and skills points. Teachers prepared for the lessons and discussed the classroom teaching design scheme together. Some observation points were set up in teaching implementation, and teaching modes and methods as well as assessment and evaluation methods were innovated. Figure 1 shows the implementation path.

4 Design of curriculum ideology and politics

4.1 Clarify the main line of professional ideology and politics

The ideological and political goal of this major is to foster virtue and combine morality with skills through education. The aim is to cultivate the high-quality technical and skilled students with moral, intellectual, physical, aesthetic and labor all-round developments who firmly uphold the leadership of the Communist Party of China and the socialist system, fulfill the socialist core values with the spirit of innovation, professionalism, and patriotism

and have a correct outlook on the world and life with good moral characters. They could have a certain scientific and cultural level, good humanities accomplishment and grasp the basic knowledge of the automobile structure, automobile fault detection diagnosis and maintenance. Meanwhile they could have the skills of maintaining automotive electrical and mechanical facilities, diagnose and troubleshoot automobile problems as well as having the strong abilities of employment and sustainable development.

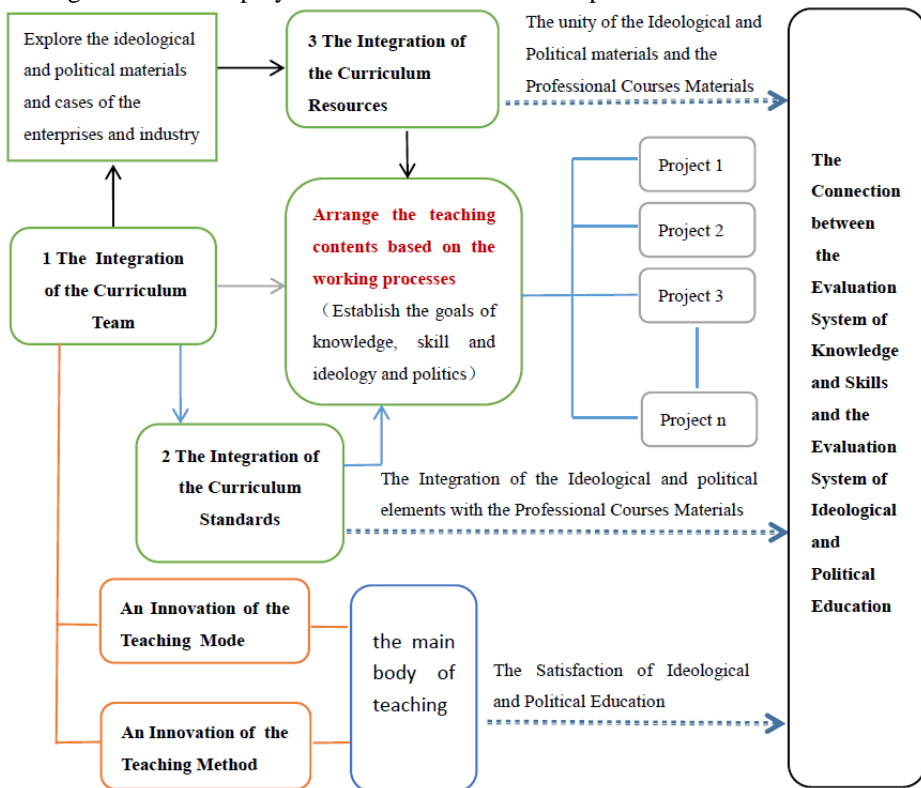


Fig. 1. Course ideological and political teaching design implementation path.

4.2 Resolve and Establish the main ideological and political line of the curriculum

According to the characteristics of the course *The Inspection and repair of Automobile Comfort and Safety System*, the ideological and political main line of the curriculum was established, and the implementation of ideological and political teaching of the course was promoted around the three levels: the spirit of The Times, the moral cultivation and the value guidance", so as to realize the synergistic effects of knowledge teaching, ability cultivation and value shaping. Therefore, based on the professional ideological and political goals, the ideological and political main line of this course was clear: promoting the spirit of The Times together with enhancing moral cultivation and practicing core values.

4.3 Explore the ideological and political line of knowledge and skills

According to the ideological and political main line of the course, the ideological and political elements were deeply explored around the knowledge and skill points to form the ideological and political line of knowledge and skill points. One or two core knowledge

points were selected in each task. It appeared in the way of micro project after each knowledge point was refined, and the project managements of knowledge points were realized by raising the ideas, solving and drawing conclusions^[2]. The moral education points which connected with each other were not repeated or far-fetched, and covered all aspects of students' accomplishments, thus it served for the student-centered humanistic concepts and achieved the effects of educating students with the help of all staff, in all processes and in all aspects.

5 Practical strategies of curriculum ideology and politics

Taking the maintenance of project 3.1 airbag system as an example, teachers integrated teaching contents with innovate teaching modes and methods, and summarized the implementation path of ideological and political teaching of the course.

5.1 The selection of proper teaching contents

Used the actual work cases in teaching process and students were asked to accomplish the troubleshooting of airbag light on fault and mastered the basic knowledges of airbag and fault inspection and analysis as well as the fault maintenance methods. Based on knowledge requirements, working processes, and the integration of teaching contents, the teaching tasks of this project were divided into three teaching activities: Activity 1: the cognition of airbag system; Activity 2: the confirmation and analysis of the airbag system failure; Activity 3: the fault maintenance of the airbag indicator light.

The cases revolved around the three learning activities. Some relevant knowledge points and the ideological and political elements were deeply explored: The cognition and use of airbag integrated the material of "safety belt, life belt" with the ideological and political elements of "law-abiding and caring for life"; The working process of the airbag system integrated the material of "millisecond difference is related to life and death" with the ideological and political elements of "rigorous learning and people-oriented awareness". Took the case "Non-standard operation would hurt others and yourself" in the course of fault maintenance of the airbag as a case material, and integrated it with the ideological and political elements of "standard process, safe operation". These three activities aimed to foster virtue and combine morality with skill through the comprehensive assessment and evaluation system.

5.2 Teaching implementation process

The implementation of course teaching was problem-oriented and task-oriented, with the help of digital resources and information means such as the course resource platform, videos, power points, real cases, etc., in order to enhance the interest of learning, highlight teaching priorities, resolve teaching difficulties and achieve teaching objectives. Classroom teaching consisted of three parts: pre-study, classroom guidance and after-class development.

(1) Pre-study: teachers set tasks and students studied independently, made group exploration and did some pre- discussions on the information platform. Thus, the real learning situation was analyzed through exchanging activities on the learning platform.

(2) Classroom guidance: According to the pre-learning feedback before class, teachers sorted out the importance and difficulties of classroom teaching, created actual situations and introduced teaching activities. Taking the airbag indicator troubleshooting task as the carrier, teachers led students to find problems, analyze problems, solve problems and

explore the new knowledge. The teaching contents were goal-oriented: firstly, teachers asked students to find the "fault light" from the created situation, then put forward that there was a fault in the airbag system, and guided the students to analyze the problems: "What is the airbag system? What does it do? How does it work? What problems will occur in use? Why does it occur? How shall you solve the problem?" Teachers revolved teaching knowledge points according to cognitive rules and then broke through the difficulties one by one. In the process of learning, teachers followed the "student-oriented" principle, and completed the tasks of problem sorting, cause exploration, and summary and evaluation. Integrated the ideological and political elements of "observing disciplines and obeying laws, people-oriented awareness, safety first, rigorous learning" with the needs of the actual work position and finally improved the effectiveness of teaching.

(3) After-school development: improved skills and qualities through learning, summary, reflection, skills competition, and internship to integrate moralities into teaching and education.

5.3 Teaching reflection

The teachers adopted the teaching methods of "case study+ situational introduction + problem-oriented + task-driven". Took students as the main body and stimulated students' independent inquiry and group cooperation learning styles. The online and offline mixed teaching mode was finally carried out. Used the teaching platform, virtual software, training equipment and other teaching resources to solve the difficulties problems in teaching. Goal-oriented teaching mode guided students to find problems, put forward problems, analyze problems, solve problems, and developed students' professional ability and quality. The reflection of this project teaching is: the course team still need to update the course teaching contents in time, continue to collect ideological and political materials and good cases of ideological and political education in the course, study the breakthrough points of ideological and political teaching, and finally play a valuable role in the education.

6 Evaluation method of curriculum ideology and politics

The course builds a comprehensive evaluation system of combining the knowledge and skills with ideological and political education, and realizes the trinity of the formative assessment in knowledge imparting, ability cultivation and value shaping^[3]. The evaluation was carried out from three aspects: the teaching subject, the teaching process and the education effect. Multi-subject evaluation and the development of corresponding incentive strategies stimulated students' learning motivation; The students' moral and technical achievements were evaluated as well as the study achievements. They would share perceptions and be fostered virtue through education. The evaluation of curriculum education effects was shown in Table 1., which was completed by teachers, students and teaching supervisors.

In the implementation of classroom teaching, students were grouped according to some comprehensive elements such as learning ability and practical ability to ensure the feasibility of group cooperative investigation. Teachers encourage groups to name and establish slogans or suggested the names of "Brave innovation Team, Sunshine Team, Harmony group, Revival group, etc., to cultivate students' team cultural awareness and deepen their socialist core values. Through homework feedback, learning achievements sharing and other ways were present to show the effects of ideological and political education. Then teachers summed up the experience of solving the problems in students' behavior change and other key issues, and the ideological and political education effects were comprehensively improved.

Table 1. Evaluation table of educational effect of curriculum.

Project	Evaluation content	rating		
		A	B	C
Knowledge and skills	Knowledge points (structure and principle) : ○ Mastery ○ Basic mastery ○ Poor mastery			
	Ability of reading and applying circuit diagram: ○ Strong ○ Basic ○ Poor			
	Analysis ability of common faults: ○ Strong ○ Basic ○ Poor			
	Common fault diagnosis and repair ability: ○ Strong ○ Basic ○ Poor			
	Need to focus on deepening learning and improving:			
The moral education quality	○ Show up on time ○ Be fully equipped ○ Obey assignments ○ Follow rules and regulations			
	○ Proactive ○ Strong sense of responsibility ○ Hardworking ○ Dedicated to work			
	○ Environmental awareness ○ Cost awareness ○ Safe operation ○ Service awareness			
	○ Effective communication ○ Solidarity and cooperation ○ Innovative thinking ○ 7S management standards			
	Practicing core socialist values -			
	Other qualities to focus on:			
Comprehensive evaluation	It is mainly evaluated from the aspects of knowledge and skill mastery and moral education quality.	Signature: Company (seal)		
Improvement strategy		Signature: Company (seal)		

7 Summary of curriculum ideology and politics

This course group recruited ideological and political teachers to form a course team and set out a guiding outline. Teacher kept preparing for the courses together and did the curriculum ideological and political teaching researches in depth. The ideological and political elements and materials were further extracted and summarized. However, There are still some problems in the teaching practice: Firstly, the elements of ideological and political teaching in courses mainly focus on personal cultivation and professional norms and they lack the ideological and political theory guidance; Secondly, there are few explicit ideological and political elements in the course, and it is difficult to explore implicit ideological and political elements. Thirdly, it is difficult to grasp the ideological and political points and neglects some professional teaching contents; Furthermore, the ideological and political elements in the curriculum lack highlights and it is hard to improve the connotation. In the future, we will continue to integrate teaching resources with the typical cases in order to achieve the goals of "3 integrations, 2 innovations and 1 connection" showed in Figure1.

We would like to extend our sincere gratitude to Han Yuyong Master Studio of Vocational Education, for its instructive advice on this article. Special thanks should go to projects *The Curriculum Ideological and Political Teaching Reform Project* (Project number: KCSZ2020008) and *Research and Practice on the Vocational Cultivation Quality Improvement of Intelligent Manufacturing Professional Group* (Project number: 2021Z0074) for the help to us.

References

1. Zuo Haiqing, Zhao Hongjun, Zhu Yuru. Practice and Exploration of "One Core, two Integration, three Platforms and Four Integration" in Ideological and Political Education [J]. China Metallurgical Education Journal, (2019).
2. Wang Fang, Li Jingyong. Reflections on the Construction of excellent Teaching Materials for Architectural AutoCAD Drawing Course [J]. Journal of Liaoning Higher Vocational College, (2010).
3. Wan Ping. Approach and Strategy of "Curriculum Ideology and Politics" Construction in Higher Vocational Colleges [J]. Journal of Sanmenxia Vocational and Technical College, (2020).