

# Ideological and Political Research on the Micro-system Curriculum of Vocational Core Competency in Higher Vocational Apprenticeship Course "Subgrade and Foundation"

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**Abstract:** The domestic research on the ideological and political research on the microsystem curriculum of the vocational core competence module chain of the civil engineering apprenticeship professional courses in higher vocational colleges is in a blank area. In this paper, the vocational core competence module of the Subgrade and foundation course is optimized to form a microsystem curriculum module chain, which is organically integrated into the relevant requirements of the "curriculum ideological and political" from the characteristics of the apprentice students, Take the vocational core competence training project as the chain to carry out the ideological and political construction of apprenticeship micro system courses integrating schools and enterprises, carry out integrated training for students in terms of professional ethics, professional skills and innovation ability, and improve the quality of talent training.

## 1. INTRODUCTION

With the continuous high-speed development of China's economy, higher requirements have been put forward for the quality and level of higher education. Higher education no longer blindly emphasizes the cultivation of professional skills, but gradually returns to the essence of educating people.<sup>[1]</sup> Under this background, since 2016, colleges and universities have started teaching reform with the goal of "curriculum ideological politics", which is to put more emphasis on the cultivation of professional ethics and values. Cultivate and improve students' comprehensive quality.<sup>[2]</sup> The exploration and practice of the implementation path of the professional curriculum of vocational colleges and universities is of great significance to promoting the ideological and political construction of vocational colleges and universities with high quality.<sup>[3]</sup>

The cultivation of talents in vocational colleges and universities is a process of unifying the cultivation of people and the cultivation of talents, and we must do a good job in the ideological and political construction of the curriculum and effectively solve the problem of separating ideological and political education from professional education.<sup>[4]</sup>

## 2. PROBLEMS FACED BY IDEOLOGICAL AND POLITICAL CONSTRUCTION OF CURRENT CURRICULUM

### 2.1. Insufficient understanding of the ideological and political connotation of the course leads to low acceptance of students

At present, the ideological and political construction of micro system courses for civil engineering majors in higher vocational colleges has just started. Due to the lack of understanding of the connotation of Ideological and political education, they mistakenly think that ideological and political education is just about politics. As a result, the current ideological and political education is faced with the current situation that professional courses and ideological and political education are hard to integrate, and the matching between knowledge points and ideological and political points is poor.<sup>[5]</sup> As a result, students have little interest in the professional courses after the reform, It is difficult to achieve the teaching effect of moistening things silently only through the teaching of Ideological and political elements.<sup>[6]</sup>

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## **2.2. The particularity of apprenticeship system increases the difficulty of Ideological and political construction**

Under the talent training mode of modern apprenticeship, students have the dual identities of employees and students.<sup>[7]</sup> Most civil engineering apprentices work as practical workers in the front line of enterprises. There is a certain vacancy in the curriculum ideological and political research. The domestic research on Civil Engineering apprenticeship curriculum ideological and political research is also in a blank area, which further increases the difficulty of curriculum ideological and political construction.

How to organically integrate the professional skill training in the micro system of the vocational core competence module chain of the apprenticeship professional course with the ideological and political education of the course, and how to organically integrate the enterprise teaching module with the ideological and political education of the course, do a good job in the embedded design of integrating "salt" into "soup",<sup>[8]</sup> cultivate comprehensive talents with solid professional knowledge, outstanding practical ability and innovative ability, and effectively solve the problem that the elements of education cannot be properly integrated. All kinds of difficult problems in the ideological and political construction of courses such as poor cooperative education are of great value and significance.

## **2.3. The lack of humanistic literacy has caused ideological and political education to lack its due attractiveness**

The basic qualities of college students include cultural quality, professional quality, physical and psychological quality, and ideological and political quality, of which the role of cultural quality as the foundation is often ignored, and ideological and political education and cultural quality education are inseparable.<sup>[9]</sup> In ideological and political education, blindly emphasizing the inculcation of values and ignoring the improvement of humanistic accomplishment will lead to the lack of vitality of ideological education.<sup>[10]</sup>

## **3. CHARACTERISTICS OF SUBGRADE AND FOUNDATION COURSE**

Subgrade and foundation is a core professional skill course of civil engineering. This course follows the industry norms and according to the needs of enterprises, to cultivate students' post abilities in the field of subgrade and foundation: the ability to read the construction drawings of building engineering foundation, the ability to use engineering geological data, the ability to design and draw common foundations, and the ability to construct common foundation structures. This course is a combination of theoretical knowledge and practical skills.

## **4. RESEARCH OBJECTIVES**

The research objective of this paper is to optimize the system of various teaching modules of subgrade and foundation to form a micro system curriculum module based on the student-centered talent training concept. Starting from the characteristics of apprentice students, organically integrates the relevant requirements of "Curriculum Ideology and politics". Takes the vocational core competence training project as the chain to carry out the ideological and political construction of apprentice micro system curriculum integrating school and enterprise. Through the subgrade and foundation course, the ideological and political construction of the apprenticeship micro system course integrating school and enterprise is carried out through the three progressive learning professional core competence module chains of soil identification, engineering drawing reading and foundation engineering construction. Moral cultivation is the foundation of self-improvement. Guided by values, ideological and political elements such as China's excellent traditional culture and professional ethics are imperceptibly embedded in curriculum teaching and in every project of curriculum vocational ability training, so as to achieve long-term and continuous guidance for students and consolidate and improve them. Therefore, the course Ideological and political education is the most important starting point for civil engineering majors to improve the quality of personnel training.

Under the modern apprenticeship talent training mode, the teaching subject has changed from school teachers to school teachers + enterprise teachers, the learning object has changed from students to students + employees, and the learning environment has changed from classroom to classroom + society. The ideological and political level of the dual teaching subjects is uneven. The dual learning environment makes it difficult to effectively integrate the curriculum ideological and political resources, and the assessment system of enterprises and schools is also heterogeneous. It is a difficult problem in the ideological and political reform of apprenticeship courses at present. The subject plans to make full use of the respective advantages and characteristics of schools and enterprises, optimize the three progressive learning professional core competence module chain micro systems of soil identification, engineering drawing reading and basic engineering construction, and build a hierarchical and repeatedly strengthened civil engineering apprenticeship Course Ideological and political collaborative education teaching mode.

## **5. RESEARCH PRACTICE**

### **5.1. Learning situation**

The apprenticeship class of Zhongtian Group Construction Engineering Specialty of Guangdong Construction Vocational and technical college is selected for the project research. The subgrade and foundation are the core courses of the specialty. The courses are taught in

the school and in the enterprise respectively. The teachers in the school and in the enterprise jointly complete the courses, and the scores are jointly assessed.

## 5.2. Technical route

The technical route adopted by the project is: To investigate the civil engineering apprenticeship professional courses, optimize the micro curriculum system, carry out ideological and political construction of apprenticeship micro system courses integrating schools and enterprises by taking the vocational core competence training project as the chain, carry out integrated and comprehensive training of students in professional ethics, professional skills and innovation ability, and improve the quality of talent training.

## 5.3. Means of implementation

The first problem to be solved by the project is that the combination of ideological and political elements and professional knowledge is too far-fetched and rigid. If the ideological and political elements are removed, the teaching of the professional knowledge system will hardly be affected. In layman's terms, "salt" is not integrated into "soup". The research group plans to first optimize the design of the module chain micro-system for the "Foundation and Foundation" course. According to the cognitive laws of students, the ability training project will be the main line, and the ideological and political elements will be fully explored as the hidden line, and work hard on the embedded design of the ideological and political and ability training projects. For example, the construction of Qinghai Tibet railway not only contains professional knowledge and skills such as geotechnical cognition, pile foundation construction and frozen soil treatment, but also contains a large number of Ideological and political elements: national development strategy, safe production, civilized construction, fighting spirit and craftsman spirit, etc. We do a good job in the embedded design work that integrates "salt" into "soup": the geological conditions of the Qinghai-Tibet Railway lead to the knowledge points and training tasks of geotechnical cognition, and the construction problems of pile foundations in harsh construction environments lead to the construction workflow of pile foundations. The permafrost problem leads to the foundation treatment learning situation, and the craftsman spirit runs through all the learning modules. If the ideological and political elements are removed from the curriculum design, the whole vocational ability training curriculum system will collapse, which has preliminarily completed the goal of embedding the values, excellent traditional culture, professional ethics and other ideological and political elements into each project of the vocational ability training.

On the basis of the first year's practice and exploration, we made a perfect summary, focusing on optimizing the design of module chain system in different environments of the school and the enterprise. We adopt a teaching model that combines online and offline, classroom and

enterprise, and integrates ideological and political education into students' daily life and work. School teachers and enterprise teachers have established an effective communication mechanism, and established a professional curriculum evaluation system for ideological and political education. Through the ideological and political construction of the "Subgrade and Foundation" course, we will carry out an integrated and comprehensive training for students in terms of professional ethics, professional skills and innovation ability, and improve the quality of talent training.

## 6. CONCLUSIONS

The domestic ideological and political research on the vocational core competence micro system curriculum of civil engineering apprenticeship courses in higher vocational colleges is in a blank area. The innovation of this topic is to optimize the vocational core competence module in the "Subgrade and foundation" course to form a micro system curriculum module chain. Starting from the characteristics of apprenticeship students, it is similar to the design of "salt" integrated into "soup", and the relevant requirements of "course ideology and politics" are integrated into the curriculum. Taking the vocational core competency training project as the chain, we have carried out the ideological and political construction of the school-enterprise curriculum, and established a corresponding curriculum evaluation system to improve the quality of talent training.

## Acknowledgment

This study was supported by 2021 Teaching research and teaching reform project of Guangdong Vocational apprenticeship Committee (XTZJG202113), Guangdong Province on the 2021 Education Science Planning Project (2021GXJK580), 2021 education and teaching scientific research project of China Construction Education Association(2021176).

## REFERENCES

1. Q. Chen, The dilemma and mechanism innovation of Ideological and political construction of college curriculum (j), *Modern trade and industry*, 2021,42 (30), pp.117-118
2. W. Gao, Teaching exploration of course ideology and politics in the course of modern apprentice coal chemical engineering - Taking "coal quality analysis and coal chemical product inspection" as an example(j), *Anhui chemical industry*, 2021,47 (04), pp.184-187
3. S.Z. Shang, Exploration on the training mode of "multiple Embeddedness and integration of morality, ability and knowledge" - Based on the training of undergraduate accounting talents in J University (j), *Business accounting*, 2020 (06), pp 117-120

4. P.SUN, M.LU. The exploration and practice of Ideological and political elements in the basic practice teaching of geology (j), *Journal of Xichang University*, 2021,35 (03), pp 115-118
5. F.Y. Jing, G. Wang. The Mechanism of "Three Classrooms" Curriculum of Higher Vocational Colleges and Universities under the Perspective of Modern Apprenticeship System(j), *Education and Careers*, 2019(11), pp 88-93.
6. J. Lou, Interpretation of the dilemma and countermeasure analysis of ideological and political education in higher vocational colleges under the background of modern apprenticeship system(j). *Journal of Jiujiang Vocational and Technical College*, 2017(3), pp 37-39.
7. X.J.Wang, G.Z.Wang. Research on the Classroom Teaching Path of Ideological and Political Education into The Cultivation of Talents in Colleges and Universities in the Science and Technology Innovation Community—— A Case Study of Motor and Drag in Automation Courses(j). *Journal of Higher Education*,2021,7(18),pp 10-13,17.
8. J.Li. Analysis on the Ideological and Political Education Model of Higher Vocational Students under the Background of Modern Apprenticeship System(j). *Education and Careers*, 2015(13),pp 46-48.
9. J.Zhu, J.D.Shao. Ideological and Political Construction of Vocational College Curriculum Based on Pluralistic Integration: Dilemma and Breakthrough(j). *China Vocational and Technical Education*, 2021(29), pp 11-17.
10. B.Zhangj, S.M.Dai. Exploration and Research on The Ideological and Political Reform of Curriculum in Vocational Colleges and Universities from the Perspective of Modern Apprenticeship System: A Case Study of Engineering Surveying(j). *Theoretical Research and Practice of Innovation and Entrepreneurship*,2021,4(24), pp 47-49.