

Research on Ideological and Political Education Integration in Water Conservancy Engineering Courses in Vocational Colleges—Case Study: "Hydraulic Structures" Course

Shiming Liu, Yubin Qi, Zhifeng Jin, Ting Yu

Yili Vocational and Technical College, Yining, Xinjiang, China

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Abstract: Under the perspective of adhering to the principle of "making people moral," this approach combines the gathering of multi-ethnicity in the border area with the characteristics of local water conservancy construction. It highlights the importance and necessity of incorporating professional courses in water conservancy engineering into local higher vocational colleges and universities. This involves organizing the knowledge content for teaching hydraulic building courses, delving into the elements of ideology and politics contained therein, and integrating elements of the spirit of craftsmanship, the four self-confidences, patriotism, love of the border, and service to the grassroots level into classroom teaching. The goal is to construct an effective method of knowledge transmission and to nurture the soul through this approach.

1. Introduction

With the rapid development of vocational education in China, the teaching of professional courses in higher vocational colleges and universities (hereinafter referred to as higher vocational colleges and universities) have become an indispensable part of vocational education. The teaching of professional courses in higher vocational colleges and universities is no longer purely about knowledge transfer and ability cultivation, but needs to incorporate the element of "Civics and Politics of the Courses" into it. This approach aims to cultivate more skilled craftsmen and great national craftsmen who can take up the great responsibility of national rejuvenation. Therefore, how to fully integrate the elements of ideology and politics into the professional courses to achieve the effect of cultivating morality and nurturing people is a problem that teachers of professional courses in higher vocational colleges and universities must consider in the coming period.

2. The Importance of Civics and Politics in the Curriculum of Water Conservancy Engineering in Xinjiang Higher Vocational Colleges and Universities

2.1. The Importance of Civics in Professional Programmes in Higher Education Institutions

80% of the teachers in higher vocational colleges and universities are professional teachers, 80% of the courses are professional courses, 80% of the students' study time is used for professional study, and the teaching of professional courses is an important support for the ideological and political education of the curriculum. To conduct effective course ideological and political education, we must adhere to: first, the unity of knowledge transmission and value leadership, integrating value shaping with knowledge transmission and ability training, and closely integrating professional education with ideological and political education to form a synergistic effect; second, the unity of explicit and implicit education [1]. While giving full play to the important role of the ideological and political theory course, we should use the hidden education channel to explore the elements of ideological and political education contained in the professional courses, not only to form a "shocking" momentum but also to produce a "silent" effect.

2.2. The Urgency of Civics Construction in Water Resources Engineering Programmes

In the past teaching process of water conservancy engineering courses, there are still varying degrees of professional education and ideological and political education "two skins" phenomenon, failing to form a good nurturing synergy, give play to the function of the curriculum nurturing, and difficult to help students' overall development in a subtle way. Water conservancy class is designed to cultivate both moral and applied engineering talents, students not only need to have solid professional knowledge and vocational skills, but also need to have a good craftsmanship, morality and professional ethics [2]. Therefore, it is necessary to start from the construction of the course ideological and political education goal, improve the quality of the course ideological and political construction, innovative course ideological and political teaching, enrich the connotation of the course ideological and political, etc., and, combined with the characteristics of the discipline and professional construction, carry out a targeted design for the ideological and political teaching system of the water conservancy engineering professional course.

2.3. The Necessity of Promoting the Construction of Civics and Politics in Water Conservancy Engineering Courses in Higher Vocational Colleges and Universities in Xinjiang

Promoting the construction of Civics and Politics in water conservancy engineering courses in higher vocational colleges and universities in Xinjiang is an inevitable requirement for the complete and accurate implementation of the Party's strategy for governing Xinjiang in the new era. It is fundamental to maintaining the ideological security of these institutions in Xinjiang and implementing the establishment of morality and education of the people. This promotion is also crucial for the high-quality development of ideological and political education in Xinjiang's higher vocational colleges and universities. The talents cultivated by these institutions should not only adapt to the needs of the socialist cause with Chinese characteristics but also to the demands of socialist economic construction and social development in Xinjiang. In recent years, the Party Committee of the Xinjiang Autonomous Region has given significant importance to water conservancy development, stating that "water is the lifeblood of economic and social development in Xinjiang, and the efficiency of water resources utilization determines the scope for Xinjiang's development." As of the end of 2022, Xinjiang had 671 reservoirs with a total storage capacity of 12.134 billion cubic meters, supplying 54.27 billion cubic meters of water for agricultural use and 36.7 billion cubic

meters for ecological replenishment. This effectively highlights the role of water resources as a basic natural and strategic economic resource for the region's economic and social development [3]. The majority of water conservancy engineering graduates from Xinjiang's higher vocational colleges and universities are locals who often work in grassroots water conservancy departments within the region, displaying high stability and commitment. This contributes significantly to the development of local water conservancy construction in Xinjiang. These young students, trained in water conservancy engineering, are not only high-quality talents with moral integrity but also have a deep understanding and affection for Xinjiang and its people. They firmly support the Party's governance strategy for the new era, always aligning with the Party's central committee. Their actions and words resolutely safeguard national unity, social stability, and ethnic solidarity. Being rooted in Xinjiang, they are well-positioned to contribute effectively to the development of water conservancy in the region. Their role is not only crucial for the social stability and long-term peace of Xinjiang but also aligns with the highest interests of the Chinese nation [4].

3. Construction of a Civic and Political System for Water Conservancy Courses

3.1. Path of integrating the elements of ideology and politics in the teaching of water conservancy courses

In the new era, it is essential to excel in teaching water conservancy courses at higher vocational colleges and universities. The fundamental qualities of the water conservancy course itself should serve as the coordinates for the ideological and political education system. Moreover, the content and value orientation of water conservancy courses should form the reference system. Through a thorough exploration of latent nurturing elements and resources within water conservancy courses, the emphasis should be on achieving "depth" integration. It is crucial to clearly implement key points of ideological reform within the water conservancy course, enhancing the centripetal force and cohesion of both ideological and political education and the professional curriculum. This will lead to the organic fusion of these elements [5].

System thinking and good co-ordinated planning. Teachers of professional courses in water conservancy courses should do a good job of co-ordination before the course is taught, and prepare plans in advance for the three aspects of the semester teaching schedule, course units and class hour allocation. And they should understand the characteristics of students' physical and mental development, as well as their learning methods, pay close attention to their mental states and incorporate value education into the overall teaching of knowledge and skills, clearly define the allocated teaching hours for each unit of Civic Education, outline specific arrangements for teaching content, and articulate the precise methods for applying Civic Education. As far as the curriculum unit plan is concerned, before the teaching of a unit begins, teachers of professional courses must systematically explore and consider the elements of ideological and political education embedded in the teaching content of the unit, and formulate the corresponding teaching plan. In terms of lesson plan, i.e. preparing the lesson plan, when doing the lesson plan, teachers of professional courses need to make a clear plan for the ideological and political education content in the knowledge points of this lesson, and allocate more lesson time for the key content or the unit which is closely combined with the elements of ideological and political education, so as to achieve a degree of tension and relaxation, for example, in the chapter of "earth and stone dams", the original allocation of lesson time is less, but in the deepening of the knowledge point - the ideological and political education elements, the teacher can allocate more lesson time. For instance, in the chapter on "earth and stone dams," where the original allocation of lesson time might be limited, teachers can delve deeper into specific knowledge points, like "panel stacked stone dams." They might add an extra hour to discuss the background, general situation, and significance of ongoing projects like the Dashixia Reservoir

in the Aksu region of Xinjiang. This additional time can be used to foster a sense of occupational pride, rootedness in the frontier, and patriotism among students. Through these methods, the elements of ideology and politics are subtly ingrained in students' minds, much like salt dissolves in water.

Think carefully and enrich the teaching content. Teachers of professional water conservancy courses should study the teaching purpose of the discipline, on the basis of clarifying the teaching material system and the basic content, carefully excavate the elements of ideological and political education contained in the course, find the content of the discipline and the entry point of values education, and do a good job of cultivating the students' abilities, ideological education and teaching methodology for the integration of the three organic. First, the professional theory courses in the deep excavation of traditional water conservancy culture carries the elements of ideology and politics. For example, the introduction of Dayu's water control, Li Bing's father and son's construction of Dujiangyan, and the construction of the Three Gorges Water Conservancy Hub in the new era and other excellent water conservancy culture in the teaching of the introduction to the course of hydraulics buildings, which effectively enhances the sense of national pride, arouses the students' love for the nation and the country, especially for the cause of water conservancy, and provides a strong spiritual impetus for the students' learning. Secondly, it is important to delve deeply into the ideological and political elements contained in the experimental and practical training courses. For instance, in the internship teaching of hydraulic building courses, it is vital not only to cultivate students' practical hands-on ability but also to include the introduction of the operation and management of relevant projects. This approach educates students to adhere to standards and norms in the scheduling of hydraulic buildings and cultivates their vocational ability.

4. Diversified presentation of ideological and political education elements in teaching

Water conservancy course teaching for water conservancy courses for the realization of the results of the construction of the ideological and political construction, must achieve the unity of classroom teaching and disciplinary education, to ideological and political education of the value orientation as the goal to follow, to achieve their own education and teaching elements of the distinctive features of the systematic linkage and integration and restructuring, will be rich and colourful teaching effectively transformed into a "course of ideological and political" nurturing advantage. The teaching content of water conservancy courses and the ideological and political development within them should be carefully integrated. The teaching content of water conservancy courses and ideological and political education for the integration of conception and design, so that the ideological and political education elements are properly integrated into the teaching process of water conservancy courses, to achieve the effect of silent nurturing, while avoiding the teaching of hard implantation of the ideological and political education content, but also to avoid fragmentation of the guidance and referrals. Such as in the teaching of "hydraulic buildings" course, in the explanation of gravity dams, earth and stone dams based on the interactive teaching mode can be used by the students free team, respectively, composed of the corresponding "dam group", combined with their own group of the characteristics of the dam type, collect their own information, materials to prepare for the completion of the course to expand the last debate, debates, debriefings, exhibitions and other ways to show the results, which can both deepen the understanding of the content of ideological and political education, but also to avoid fragmentation of guidance and referral. Finally, utilizing methods such as debates, debriefings, and exhibitions is essential to showcase results. These approaches not only deepen students' understanding and memory of the content but also enhance their solidarity and self-study abilities. Simultaneously, they foster an active classroom atmosphere, deepening the impact of exchanges between classmates. Similar strategies, such as the use of situational teaching and pre-determined hydropower buildings course in Civics teaching design, can address the issue of overly

simplistic Civics education in water conservancy teaching. Moreover, they contribute to the effective integration of systematic Civics education into the water conservancy course in teaching practice. Water conservancy teaching system needs to be implemented with the help of a complete curriculum programme, ideological and political education material is precisely through the setting of the curriculum programme must be based on the integration of curriculum standards, content requirements, process arrangements, methods of application and other teaching elements [6], the ideological and political education elements of three-dimensional infiltration of the teaching of water conservancy courses, so as to achieve the water conservancy courses on the cultivation of the ideological and political qualities of the students of the infiltration design for water conservancy courses. The construction of the civic and political implementation system aims to provide both doctrinal and practical support.

5. Case Design of Civics in Water Conservancy Courses-Taking the Course of Hydraulic Buildings as an Example

The professional content of the narrative is as important as cultivating roots and casting souls, how to integrate ideological and political education into the professional curriculum, which is also a problem to be solved by the course Civics. The professional content of the course "hydraulic buildings" is to require students to master the composition and structure of various hydraulic buildings. In the teaching design, teachers of the professional course dig out the stories behind the hydraulic buildings; through the integration of existing famous water conservancy engineering cases, watching documentaries, scenarios, visits, and other ways to make the elements of ideology and knowledge teaching organic combination, focusing on cultivating students' patriotism and dedication, responsibility, the four self-confidence, the spirit of craftsmanship and hard work and other ideological and political education. The knowledge points and entry points of the course "Hydraulic Buildings", as well as the embodiment of the elements of ideology and politics, are shown in Table 1.

Table 1: Design of Civic and Political Elements in the course "Hydraulic Buildings

Teaching and Learning	Teaching and Learning	Teaching and Learning	Teaching and Learning
Module Knowledge Points Entry Points Civic and Political Elements	Module Knowledge Points Entry Points Civic and Political Elements	Module Knowledge Points Entry Points Civic and Political Elements	Module Knowledge Points Entry Points Civic and Political Elements
Water resources and water conservancy projects Characteristics of water resources Achievements of water conservancy projects Types of water conservancy projects Distribution of water resources and characteristics of water resources in China	Water resources and water conservancy projects Characteristics of water resources Achievements of water conservancy projects Types of water conservancy projects Distribution of water resources and characteristics of water resources in China	Water resources and water conservancy projects Characteristics of water resources Achievements of water conservancy projects Types of water conservancy projects Distribution of water resources and characteristics of water resources in China	Water resources and water conservancy projects Characteristics of water resources Achievements of water conservancy projects Types of water conservancy projects Distribution of water resources and characteristics of water resources in China
Achievements of China's water conservancy projects Harmony between human and water, enhancement of national pride, arousing students' love for the nation and the country, especially for water conservancy.	Achievements of China's water conservancy projects Harmony between human and water, enhancement of national pride, arousing students' love for the nation and the country, especially for water conservancy.	Achievements of China's water conservancy projects Harmony between human and water, enhancement of national pride, arousing students' love for the nation and the country, especially for water conservancy.	Achievements of China's water conservancy projects Harmony between human and water, enhancement of national pride, arousing students' love for the nation and the country, especially for water conservancy.
Floods and their control Master the basic characteristics of rivers and hydrological elements Understand the causes of floods and measures to prevent and control them According to the case of Sanjiangyuan;	Floods and their control Master the basic characteristics of rivers and hydrological elements Understand the causes of floods and measures to prevent and control them According to the case of Sanjiangyuan;	Floods and their control Master the basic characteristics of rivers and hydrological elements Understand the causes of floods and measures to prevent and control them According to the case of Sanjiangyuan;	Floods and their control Master the basic characteristics of rivers and hydrological elements Understand the causes of floods and measures to prevent and control them According to the case of Sanjiangyuan;

The two sides of river sediment; Correct avoidance of natural disasters such as rainstorms;	The two sides of river sediment; Correct avoidance of natural disasters such as rainstorms;	The two sides of river sediment; Correct avoidance of natural disasters such as rainstorms;	The two sides of river sediment; Correct avoidance of natural disasters such as rainstorms;
China's case study on the handling of rainstorms Water conservation, protection of water sources, the philosophical view of things in two, the Four Confidences, the Five Identities, the spirit of patriotism.	China's case study on the handling of rainstorms Water conservation, protection of water sources, the philosophical view of things in two, the Four Confidences, the Five Identities, the spirit of patriotism.	China's case study on the handling of rainstorms Water conservation, protection of water sources, the philosophical view of things in two, the Four Confidences, the Five Identities, the spirit of patriotism.	China's case study on the handling of rainstorms Water conservation, protection of water sources, the philosophical view of things in two, the Four Confidences, the Five Identities, the spirit of patriotism.
Gravity dams Characteristics of gravity dams Gravity dams on material requirements	Gravity dams Characteristics of gravity dams Gravity dams on material requirements	Gravity dams Characteristics of gravity dams Gravity dams on material requirements	Gravity dams Characteristics of gravity dams Gravity dams on material requirements
Deep spillway hole structure of gravity dam Self-weight of concrete gravity dam; Design of spillway holes of the Three Gorges Dam of the Yangtze River; Watch the video of excavation and cleaning of the dam foundation of the Three Gorges Dam; Iron needs to be hard, science and technology to serve the country, Philosophical concept of the development of things, great country craftsmen, sense of professional acquisition, sense of mission, indomitable spirit, road self-confidence, institutional self-confidence	Deep spillway hole structure of gravity dam Self-weight of concrete gravity dam; Design of spillway holes of the Three Gorges Dam of the Yangtze River; Watch the video of excavation and cleaning of the dam foundation of the Three Gorges Dam; Iron needs to be hard, science and technology to serve the country, Philosophical concept of the development of things, great country craftsmen, sense of professional acquisition, sense of mission, indomitable spirit, road self-confidence, institutional self-confidence	Deep spillway hole structure of gravity dam Self-weight of concrete gravity dam; Design of spillway holes of the Three Gorges Dam of the Yangtze River; Watch the video of excavation and cleaning of the dam foundation of the Three Gorges Dam; Iron needs to be hard, science and technology to serve the country, Philosophical concept of the development of things, great country craftsmen, sense of professional acquisition, sense of mission, indomitable spirit, road self-confidence, institutional self-confidence	Deep spillway hole structure of gravity dam Self-weight of concrete gravity dam; Design of spillway holes of the Three Gorges Dam of the Yangtze River; Watch the video of excavation and cleaning of the dam foundation of the Three Gorges Dam; Iron needs to be hard, science and technology to serve the country, Philosophical concept of the development of things, great country craftsmen, sense of professional acquisition, sense of mission, indomitable spirit, road self-confidence, institutional self-confidence

6. Conclusions

In order to truly implement the construction of water conservancy engineering professional course ideology in classroom teaching, it is necessary to integrate the course ideology into the whole process of classroom teaching construction. To manage classroom teaching effectively, additional efforts should be made in the design of course objectives, preparation of lesson plans and courseware, and the implementation of diversified lectures. Various forms of teaching modes, internships, and training activities should be conducted to broaden the methods and approaches in constructing the ideology and politics of the course. It is necessary to constantly reform and innovate in education and teaching methods. Contemporary young students are a generation growing up in the Internet environment, the course Civics teaching should also be actively adapted to the transformation of the students' learning mode, actively promote the application of modern information technology in the classroom, innovative classroom teaching mode, from the course of the Civics elements of the in-depth excavation, sorting out the integration of professional knowledge and Civics elements of the combination of students in the process of learning the theoretical knowledge of the "internalisation" of the theoretical knowledge of the students. "Internalization" and "inculcation" of Civic-Political elements aim to cultivate and shape a steady stream of qualified builders for the water conservancy cause in Xinjiang.

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The practical study on the ideological and political construction of the Core Curriculum of Water Conservancy Engineering in Higher Vocational Education from the Perspective of "Nurture Morality and Foster Talent" (Fund NO YLJYKT2022-240).

References

- [1] People's Government Website, *Guidelines for the Construction of Civics and Politics in Higher Education Programmes*, 2020-05-08.
- [2] Xiaohua Huang. *Exploration of the path of ideology and politics in the course of hydraulic buildings*. [J]. *Journal of Yangling Institute of Vocational Technology*. June 2022, Volume 21, Issue 2: 63-65
- [3] Medina Gabriel da Silva, Gosch Marcelo Scolari, DelGrossi Mauro Eduardo. *Development pathways for family farmers: Lessons from Brazil on the need for targeted structural reforms as a means to address regional heterogeneity* [J]. *Geoforum*, 2021, 118(Jana):14-22
- [4] Lixia Xiao. *The specificity of teaching ideological and political theory courses in Xinjiang colleges and universities in the new era and its response* [J]. *Journal of Changji College*. 2022-09-4: p44
- [5] Qingping Pu, He Xiaoling. *Trends, blockages, pain points, difficulties and coping strategies in the reform of college curriculum Civics* [J]. *Journal of Xinjiang Normal University (Philosophy and Social Science Edition)*, 2021(5)
- [6] Fuxue Zhao, Jiao Jiayang, Zhao Peng. *A study on the theoretical significance and practical direction of the construction of sports programme's ideology and politics in the field of "Lid Shuren"*[J]. *Journal of Beijing Sport University*, Vol. 44, No. 3:p77