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Research on the Path and Practice of Ideological and Political Construction in the Course of Water Resources and Hydropower Planning

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Abstract: Through the construction path of courses' ideological and political teaching objectives, education goals, teaching methods, assessment systems, etc., the corresponding knowledge points of course ideological and political education are constructed in this course, and ideological and political elements are integrated into the teaching module. Find the right entry point for ideological and political education based on the course content and infiltrate ideological and political education in a targeted manner. Integrating ideological and political practice cases of comprehensive utilization of water resources, regulation of benefits, flood regulation, and water energy calculation into the entire teaching process. Fully utilize the advantages of professional course resources and combine them with the needs and development resources of the country, transforming them into unique advantages in ideological and political education through courses. At the same time, we will deeply explore and extract the core values and concepts of patriotism, social responsibility, and cultural confidence contained in professional courses, ensuring that ideological and political education can be fully integrated into all aspects of this course teaching. By integrating the connotation of teaching and educating people into the main aspects of classroom teaching, we can enhance the attractiveness of ideological and political education in the Water Resources and Hydropower Planning professional course and effectively promote the construction and development of this professional course.

Keywords: Water conservancy and hydropower planning; Teaching objectives; Practical cases; Course ideological and political education

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1. Introduction

At the National Conference on Ideological and Political Work in Higher Education Institutions held in December 2016, it was proposed to make good use of classroom teaching as the main channel to ensure the alignment and synergy between various courses and ideological and political theory courses [1]. In the current context, research and practice on curriculum ideological and political construction in universities across the country continue to deepen while significant progress and achievements have been made [2–5]. However, in practical teaching, ways to accurately select entry points and carry out specific operations remain a major challenge for most teachers.

The research on curriculum ideological and political education has been gradually carried out since 2017, and universities across the country have continuously deepened their research and practice in curriculum ideological and political construction, achieving significant progress and results [6–7]. Course ideological and political education is a complex system of engineering that involves formulating work goal systems, collaboration between departments, in-depth exploration of course resources, and constructing campus ideological and political culture. These works should be gradually and orderly promoted [8–9]. The primary task of curriculum ideological and political construction is to firmly grasp the core essence of ideological and political education, ensuring its meticulous implementation in practical teaching [10–15]. The shortage of water resources and the construction of ecological civilization have become key obstacles to the sustainable development of China's economy and society. On the basis of following the laws of natural ecological environment development and changes, scientific development, allocation and utilization of water resources should be carried out to achieve harmonious progress between ecological environment and economic and social development. Therefore, in the ideological and political construction of the course Water Resources and Hydropower Planning, students are encouraged to understand the current situation faced by water conservancy engineering, water resources, and water environment. Based on the specific knowledge structure, theoretical level and practical skill requirements of students majoring in water conservancy and hydropower engineering, effective integration of theoretical knowledge and ideological and political education in water conservancy and hydropower planning will be achieved from multiple dimensions such as professional ethics, craftsmanship spirit, and social responsibility, achieving the potential integration of the two.

2. Path of ideological and political construction in the course of Water Resources and Hydropower Planning

2.1. Objectives of ideological and political education course

In the curriculum system of Water Resources and Hydropower Planning, there is a mutual interaction between scientific research and teaching, and ideological and political education is used to promote teaching. The teachers of the research group carry out scientific research activities and integrate ideological and political ideas around the optimization and allocation of water resources and reservoir scheduling, and improve the overall quality of teaching by closely combining theory and practice. Besides, teachers also search for the integration of ideological and political education with professional knowledge and increase the depth and breadth of integrating ideological and political content into the curriculum system. In order to improve the teaching quality of ideological and political courses, teachers and schools are vigorously committed to strengthening the construction of the teaching team, gradually building an excellent teacher team with a balanced structure, excellent teaching level, and significant teaching effects.

The content of ecological water conservancy engineering has been added to the achievements of water conservancy engineering development, guiding students to have a belief in ecological environment protection and a determination to contribute to the national strategic development. Let students further understand our mother river, which is the Yellow River, and make efforts and contributions to the ecological protection and high-quality development of the Yellow River.

2.2. Implementing of ideological and political elements into teaching methods

In the ideological and political education reform of the course Water Resources and Hydropower Planning, we will deeply explore the ideological and political education elements contained in this course. On the basis of the disciplinary and professional curriculum system, we are committed to deeply understanding the core

connotation of ideological and political education, seeking a scientific perspective on teaching content, and integrating it with ideological and political education elements to make teaching more vivid and effective. Besides, an enhancement of the educational orientation of professional courses can reflect the socialist core values and ownership attitude of the water conservancy industry and, through subtle means, enable students to unconsciously receive education on the country's moral value system, thereby cultivating outstanding talents with both professional skills and noble character. Accurately position the perspective of ideological and political education in the course content and achieve targeted and feasible infiltration of ideological and political education. At the same time, the overall design of curriculum education should cover the comprehensive planning of knowledge objectives, ideological and political objectives, and curriculum ideological and political objectives.

2.3. Innovative teaching methods

The design of teaching content is further broken down on the basis of classroom training objectives, and the content of each module is built out. On the basis of understanding the theoretical knowledge of Water Resources and Hydropower Planning, the group discussion mode is adopted. At the same time, excellent documentaries will be introduced, such as the construction, operation, and socio-economic benefits of the Three Gorges Reservoir. The ancient wisdom of the Dujiangyan Irrigation Project Water Control Project and the connotation of the ecological water conservancy project inject fresh vitality into the boring theoretical courses. Students can increase their interest in learning by flipping the classroom and gaining and consolidating knowledge while combining online course resources, utilizing fragmented time to learn important knowledge points, consolidating classroom learning and strengthening practical understanding. The practical teaching of ideological and political education in the course needs to adhere to the principles of "Adapting to the situation, advancing according to the times, and innovating according to the situation," and continuously improve and develop it while adhering to it, so as to achieve practical results in the ideological and political education of the Water Resources and Hydropower Planning course.

2.4. Assessment methods

The assessment criteria include basic theoretical knowledge, integration of ideological and political courses, publication of papers, participation in projects, classroom participation, and ideological and political experiences. For students participating in teachers' vertical and horizontal projects, the results can be included in their regular grades after achieving certain training goals and being recognized by the teacher. The quantitative standards are 50% for paper exams, 20% for regular grades, 10% for interviews, and 20% for ideological and political integration and papers. The usual grades include the combination of knowledge points and ideological and political courses (10%), classroom participation and discussion performance (5%), and participation in research projects (5%). To achieve the goal of subtly integrating ideological and political course ideas into professional courses.

3. Case studies of ideological and political practice in the course of Water Resources and Hydropower Planning

3.1. Comprehensive utilization of water resources

The shortage of water resources and the construction of ecological civilization have become key obstacles to the sustainable development of China's economy and society. Efficient utilization and allocation of limited water resources are one of the main means to solve these contradictions. Although the Yellow River Basin is

the second largest river in China, its runoff is only 2% of the national river runoff. The excessive utilization of water resources in the Yellow River Basin has caused a series of problems, including river interruption, increasingly serious pollution, excessive exploitation of groundwater, and deterioration of the estuarine ecological environment, which have brought great difficulties to the ecological protection and economic development of the basin. Making the Yellow River a river that benefits the people will undoubtedly ensure the high-quality development of water demand in the basin, propose a balanced and dynamic allocation plan for water resources that adapts to environmental changes, identify obstacles and sustainable development models for its healthy development, and implement the national Water-saving and Water Supply Policy, which has important scientific research value and practical significance.

3.2. Xingli adjustment

On the basis of existing power generation scheduling, water supply scheduling, and other regulations, the concept and goals of ecological scheduling are added to promote ecological restoration and ecological civilization construction. In order to alleviate the negative impact of dams on river ecology, the current reservoir scheduling method should be changed to minimize its impact on the river, namely ecological scheduling. In order to achieve sustainable development of ecology and environment, ecological scheduling should be integrated into the existing water conservancy engineering scheduling system, and corresponding ecological scheduling plans should be formulated based on the characteristics of different projects. In addition, ecological scheduling, as the latest stage of reservoir scheduling development, has always revolved around ecological and environmental issues, with the goal of meeting the optimization scheduling of water resources in the basin and the ecological health of rivers, restoring the ecological integrity of rivers as much as possible, responding to the main goals of economic and social development in the 14th Five Year Plan, and committed to achieving new progress in ecological civilization construction, new improvement in people's well-being, and new enhancement of national governance efficiency.

3.3. Flood regulation

The regulation involves expanding from flood prevention for students to efficient utilization of urban rainwater and flood control. Taking the "21.7 Flood" in Zhengzhou (July 20, 2021) as an example, the hourly rainfall in Zhengzhou reached 201.9 millimeters, and within three days, the rainfall reached 617.1 millimeters, breaking the record for hourly rainfall in Zhengzhou in nearly 60 years. In combination with this flood, let the students think about what is the reason for the serious waterlogging in Zhengzhou caused by this extremely heavy rainstorm? What are the shortcomings and protocols that Zhengzhou urgently needs to address in cracking urban waterlogging? Judging from the extremely heavy rainstorm, the awareness and ability of all sectors of society to prevent disasters are generally insufficient. How should we improve the awareness and ability of the masses to avoid risks? Normalization of flood control: Under the premise of improving urban flood control standards, enhance the public's awareness of disaster prevention. Emergency response capability in case of floods: The public should raise their awareness of prevention, strengthen emergency measures for rescue, and elevate the level of flood disaster rescue drills. Continuously strengthening the system construction of citizens' flood disaster prevention capabilities, committed to improving the accuracy of mountain flood disasters and flood forecasting and early warning, and ensuring the effective implementation of the "four pre" measures proposed by the Ministry of Water Resources.

3.4. Water energy calculation

This section focuses on the "Dual carbon goals" currently discussed by domestic and foreign experts, namely

carbon peak and carbon neutrality goals. We will carry out coordinated implementation from the perspectives of energy supply, energy consumption, and policies and build a three-end collaborative carbon reduction system. The core strategy of the energy supply side is to control coal and promote clean energy, aiming to gradually replace fossil fuels with clean energy for power generation, thereby building a more advanced and environmentally friendly new power and energy supply system, and promoting the sustainable development of clean energy. It is expected that by 2028, China's coal consumption will significantly decrease to 2.7 billion tons of standard coal, which is crucial for achieving the carbon peak target. At the same time, it is urgent to accelerate the construction of solar and wind power bases in the western and northern regions, especially the construction of hydropower bases in the southwest. In addition, according to local conditions, we will develop distributed clean energy and offshore wind power to make up for the power gap after the withdrawal of coal-fired power and ensure that the new electricity demand is met. To enable students to understand the national development situation deeply, it is necessary to reduce carbon emissions and increase carbon storage through continuous technological innovation, gradually achieving the goal of carbon neutrality. In this process, China is committed to accelerating the construction of a clean, low-carbon, safe, and efficient energy system and continuously improving the consumption ratio of renewable energy generation to promote the construction of major hydropower projects. At the same time, promoting coordinated, green, healthy, and low-carbon development between urban and rural construction and transportation, enhancing core technological innovation for green and low-carbon, in order to further enhance the carbon sequestration capacity of the ecosystem.

4. Conclusion

In the process of promoting the ideological and political education reform of the Water Resources and Hydropower Planning course, we will deeply explore the ideological and political education elements contained in the course and solve the problem of coordination between the knowledge points of each chapter and the ideological and political courses scientifically and effectively. At the same time, based on the professional curriculum system of disciplines, actively and deeply understand and grasp the core significance of ideological and political education, actively explore the integration points of course content and ideological and political education are important to integrate ideological and political education elements more naturally and vividly. By continuously reflecting and summarizing the impact of classroom teaching, enhancing the educational orientation of professional courses, reflecting the socialist core values and ownership attitude of the water conservancy industry, and through subtle means, allowing students to unconsciously receive education on the country's moral value system, thereby cultivating outstanding talents with both professional skills and noble character. Emphasize on the timely integration of the latest practical and scientific research achievements into teaching, are important to ensure that teaching content maintains freshness and novelty, thereby stimulating students' learning enthusiasm, independent initiative, and scientific creativity effectively. Through this course, on the basis of mastering the basic knowledge of comprehensive utilization of water resources and reservoir scheduling, combined with the integration of ideological and political thinking, students will broaden their horizons and provide assistance in understanding new developments, enhancing their sense of national honor and laying the foundation for future engineering practice and scientific research work.

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