

Integrating the Spirit from General Secretary Xi Jinping's Inspection Tour of Gansu into the Newly Compiled Textbook Mine Ventilation and Safety

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Abstract: The spirit embodied in General Secretary Xi Jinping's inspection tour of Gansu covers core themes including ecological conservation, high-quality development, inheritance of the red gene, and vocational education empowerment, which provides fundamental guidelines for the sustainable development of the western energy industry. As a core specialized course for coal-related majors, Mine Ventilation and Safety is highly consistent with practical demands such as the construction of Gansu's energy bases, consolidation of the national ecological security barrier, and guarantee of workplace safety. From the perspective of innovative textbook compilation, this paper analyzes the inherent logical connections between General Secretary Xi Jinping's important spirit and course content, and explores a four-dimensional integration path covering concept guidance, content reconstruction, case design and practical reinforcement. The research offers references for cultivating high-caliber energy talents equipped with safety literacy, ecological awareness and a strong sense of responsibility.

Keywords: Mine Ventilation and Safety; Textbook Compilation; Spirit from General Secretary Xi Jinping's Inspection Tour of Gansu; Curriculum Ideological and Political Education; Coal Industry Talent Cultivation.

1. Introduction

As an important energy base and ecological security barrier in western China, Gansu relies on the coordinated development of coal mineral exploitation and ecological protection to achieve prosperity for its people and regional revitalization. During two inspection tours to Gansu, General Secretary Xi Jinping emphasized that protecting the ecological environment of the Qilian Mountains bears great strategic significance for safeguarding national ecological security. He also issued clear requirements to fully implement workplace safety and accelerate the transformation and upgrading of traditional industries to strengthen competitive characteristic industries[1]. These important statements define the bottom-line requirements for energy exploitation in Gansu and point out the direction for high-quality industrial development.

Mine Ventilation and Safety serves as a core course for mining engineering and safety engineering majors, whose textbook content directly shapes students' professional skills and professional values. At present, most domestic universities adopt Ventilation Safety Science edited by Zhang Guoshu, published by China University of Mining and Technology Press. This textbook, the Ninth Five-Year Plan national designated teaching material and the First Prize winner of National Excellent Coal Higher Education Textbook Award, has undergone multiple revisions based on feedback from teachers and students, with its 3rd revised edition released in 2021[2].

In terms of textbook reform and teaching design, Qu Lina proposed a diversified reform path of student-centered, practice-oriented and internally integrated curriculum ideology and politics based on the characteristics of

Ventilation Safety Science, aiming to strengthen ideological and political teaching rooted in Marxism and stimulate students' learning initiative for cultivating new-era mine safety professionals[3]. Li Bobo improved students' practical competence by strengthening case teaching and field practice training[4]. Zhang Leilin and his team reconstructed the curriculum from five dimensions including case analysis, curriculum design, knowledge system, ideological and political education and quality expansion to boost students' learning enthusiasm, achieving favorable teaching effects[5]. To a certain extent, these reforms have optimized the teaching of Mine Ventilation and Safety.

Nevertheless, traditional textbooks of mine ventilation and safety mainly focus on technical principles and operational specifications, with insufficient integration of ideological and political elements such as ecological protection, red gene inheritance and social responsibility. They fail to satisfy the demand for cultivating new-era energy talents with both professional expertise and comprehensive literacy. Therefore, systematically integrating the spirit from General Secretary Xi Jinping's inspection tour of Gansu into the newly compiled Mine Ventilation and Safety is an inevitable measure to implement curriculum ideological and political construction, as well as a realistic demand to serve the high-quality development of Gansu's energy industry.

2. Core Matching Points for Integration

2.1. Matching Between Ecological Protection Spirit and Green Mine Exploitation

General Secretary Xi Jinping pointed out that lucid waters and lush mountains are invaluable assets, and called for

proper balance between production and living activities and ecological environment protection [6]. This viewpoint highly matches textbook chapters covering mine waste gas treatment, dust prevention and ecological restoration. Technical practices including ventilation system optimization, gas extraction and utilization and mine dust control around the Qilian Mountains in Gansu serve as localized vivid cases embodying ecological protection spirit in energy exploitation.

2.2. Matching Between Workplace Safety Concepts and Core Curriculum Objectives

General Secretary Xi Jinping has repeatedly stressed the full implementation of workplace safety management and prioritized people's lives and health. The core goal of Mine Ventilation and Safety is to equip students with capabilities to prevent mine disasters including gas outburst, mine fire and water inrush, sharing the unified philosophy of safety first and prevention first. Gansu, a major mineral resource development province, has accumulated rich practical experience in mine safety monitoring, early warning and disaster emergency disposal, which naturally echoes the technical teaching content of the textbook.

2.3. Matching Between Red Gene Inheritance and Professional Responsibility Cultivation

General Secretary Xi Jinping stated that the fearless, heroic fighting spirit of the West Route Army constitutes an important part of the Communist Party of China's red gene, and urged consistent inheritance of the red gene [7]. The hardworking and courageous spirit throughout the development of the mining industry is consistent with the red gene. Integrating red culture into textbooks can guide students to establish professional faith of taking root in western regions and serving the energy industry, and jointly shape students' sense of responsibility together with textbook contents on self-rescue, mutual rescue and disaster relief in mines.

2.4. Matching Between High-quality Development Requirements and Technological Innovation Orientation

General Secretary Xi Jinping required Gansu to accelerate the transformation and upgrading of traditional industries and foster new productive forces. This requirement aligns with textbook content covering ventilation system optimization, intelligent safety monitoring and precise disaster prevention and control. Gansu's explorations in integrated development of new energy and traditional coal industries, as well as intelligent mine transformation, inject the connotation of high-quality development into the textbook and cultivate students' awareness of technological innovation.

3. Exploration of Integration Paths

3.1. Concept Guidance: Establish a Textbook Compilation Philosophy of "Ecology + Safety + Responsibility"

Guided by the spirit from General Secretary Xi Jinping's inspection tour of Gansu, the compilation philosophy featuring ecological protection, workplace safety, red gene inheritance and high-quality development shall run through the whole textbook compilation process [8]. The preface

clarifies the mission of the curriculum, highlighting the development orientation of Gansu's coal industry: prioritizing ecology, taking safety as the foundation, driven by innovation and putting responsibility first. Each chapter opens with a "Spirit Guidance" module to briefly illustrate the internal connection between chapter knowledge and General Secretary Xi Jinping's important spirit, realizing organic integration of value guidance and knowledge teaching.

3.2. Content Restructuring: Integrated Optimization of Knowledge System and Ideological & Political Elements

Basic Theory Section: In the chapter of mine ventilation system design, special requirements for ventilation systems in ecologically sensitive areas around the Qilian Mountains are incorporated to advocate low-pollution and low-energy ventilation technologies. In the chapter of toxic and harmful gas prevention, technologies for resource utilization of mine waste gas are supplemented in response to the Yellow River Basin ecological protection requirements.

Practical Technology Section: A new independent chapter of Typical Mine Governance Cases in Gansu is added, collecting successful practices from Jingyuan Coal Industry, Huating Coal Industry, Yaojie Coal & Electricity and Qingyang Coal Power in gas extraction, dust control, ecological restoration and geothermal utilization, reflecting coordinated advancement of technological application and ecological protection.

Laws and Standards Section: Laws and regulations on workplace safety in the textbook are updated in accordance with General Secretary Xi Jinping's requirement of law-based safety governance, with focused interpretation of local policies and standards applicable to Gansu's energy industry to strengthen students' awareness of the rule of law.

3.3. Case Development: Build a Localized and Scenario-based Ideological & Political Case Library

Red Safety Cases: Cases such as "Inheritance of the West Route Army Spirit in Mine Disaster Relief" and "Nanliang Spirit in Safety Production" are compiled to integrate the fighting spirit of revolutionary predecessors with modern miners' sense of responsibility, embedded in the chapter of mine disaster emergency disposal.

Ecological Practice Cases: Practical examples including ventilation system transformation and dust control of mines around Shandan Horse Ranch during ecological restoration of the Qilian Mountains are selected to elaborate how technical schemes balance production safety and ecological protection, enhancing regional affinity of teaching materials.

Innovative Development Cases: Cases covering intelligent ventilation monitoring systems in Gansu mines and integrated development of coal and new energy are collected to reflect the implementation of high-quality development requirements, integrated into the chapter of mine safety monitoring and early warning.

3.4. Practical Reinforcement: Construct a Three-dimensional Training System of "Theory-Case-Field Practice"

On-campus Training: Practical training projects on ventilation scheme design for mines in ecologically sensitive zones are developed, requiring students to complete

optimized ventilation design in compliance with Qilian Mountains ecological protection standards to consolidate ecological safety awareness.

Off-campus Practice: Practical training bases are jointly built with local mining enterprises and safety supervision departments in Gansu. Students are organized to participate in on-site safety inspections and ecological restoration surveys to witness the practical implementation of General Secretary Xi Jinping's important spirit at the grassroots level.

Assessment & Evaluation: Ideological and political related questions are set in textbook exercises and assessment criteria, such as analyzing how a certain mine in Gansu implements high-quality development through technological innovation, guiding students to deepen their understanding and application of the spiritual connotation.

4. Supporting Measures for Integration

4.1. Form a Diversified Textbook Compilation Team

The compilation team consists of university professional teachers, technical experts from Gansu mining enterprises and ideological and political education specialists. Professional teachers guarantee scientific accuracy of technical content; enterprise experts provide localized practical cases; ideological and political experts guide precise embedding of ideological and political elements, ensuring the textbook meets both professional teaching standards and ideological and political education goals.

4.2. Strengthen Research and Resource Integration

In-depth investigations are carried out in major coal mines, ecological protection administrations and workplace safety supervision institutions across Gansu to collect first-hand data and cases. Cooperation is established with Nanliang Cadre College and the West Route Army Memorial Hall to explore red cultural resources and enrich the ideological and political connotation of the textbook.

4.3. Establish a Dynamic Update Mechanism

The textbook is updated regularly to incorporate the latest important speeches of General Secretary Xi Jinping and new policies & technologies of Gansu's energy industry, including updated cases and regulatory documents. The integration approaches are optimized continuously based on teaching feedback to maintain the timeliness and applicability of the textbook.

5. Conclusion

Integrating the spirit from General Secretary Xi Jinping's inspection tour of Gansu into the newly compiled Mine Ventilation and Safety is an innovative measure to implement curriculum ideological and political education and serve local industrial development. Through the four-dimensional integration path of concept guidance, content restructuring, localized case development and practical training

reinforcement, the textbook realizes organic integration of professional knowledge teaching, ideological and political education and regional industrial demands. It not only improves the timeliness and pertinence of the textbook, but also fosters high-caliber energy talents with solid professional skills, firm ideals and beliefs, profound ecological awareness and strong sense of social responsibility, providing talent support for Gansu's efforts to build a happy and beautiful new province and advance Chinese modernization in Gansu. In the future, the research team will continuously track the application effect of the textbook, optimize integration methods, strengthen collaborative innovation with industrial enterprises, and make the textbook an important carrier for disseminating Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, inheriting the red gene and serving local development.

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