

# Exploration and Research on the Construction of Ideological and Political Education in the “Introduction to High-Speed Railway” Course in Higher Vocational Colleges

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**Abstract:** This paper focuses on the ideological and political construction of the “Introduction to High-Speed Railway” course in higher vocational colleges. Based on the national policy orientation of ideological and political education in courses and the talent demands of the high-speed railway industry, it comprehensively employs methods such as literature research and questionnaire surveys to analyze the current status and problems of ideological and political construction in the course. The research finds that there are issues such as insufficient in-depth exploration of ideological and political elements, inadequate teacher capabilities, monotonous teaching methods, and the absence of an evaluation system. In response to these problems, it proposes strategies such as deepening the exploration of ideological and political elements, enhancing teacher capabilities, innovating teaching methods, and improving the evaluation system. It aims to construct a collaborative system of “knowledge impartation + value guidance + practical education”, providing theoretical and practical references for the ideological and political construction of courses in higher vocational transportation-related majors.

**Keywords:** Higher vocational colleges; Introduction to high-speed railway; Ideological and political education in courses; Ideological and political construction; Talent cultivation

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## 1. Introduction

### 1.1. Research background

In May 2020, the Ministry of Education issued the “Guiding Outline for the Construction of Ideological and Political Education in College Courses,” emphasizing that the construction of ideological and political education in college courses is an important task for comprehensively improving the quality of talent cultivation<sup>[1]</sup>. It requires all colleges and universities across the country to “build a comprehensive coverage, rich in types, progressive in

levels, and mutually supportive ideological and political education system in courses,” and has made scientific and detailed regulations from aspects such as goals, content, teaching systems, classroom teaching, and the construction of the teaching staff. It is necessary to fully explore the ideological and political resources of all kinds of courses, give full play to the role of each course in cultivating people, and comprehensively improve the quality of talent cultivation. To accelerate the construction of a modern vocational education system and cultivate more high-quality technical and skilled talents and master craftsmen, it is essential to firmly grasp the fundamental task of fostering virtue and nurturing talent, and integrate it into all aspects of ideological and moral education, cultural and knowledge education, and social practice education. By taking courses as the carrier to implement “curriculum-based moral education”, the moral education function of each course should be brought into play. “Curriculum-based ideological and political education” is a new teaching concept, which is not simply the addition of professional knowledge and ideological and political content, but rather an organic integration like salt dissolving in water. Through an in-depth exploration of the ideological and political connotations and elements in professional courses, the educational functions of professional courses should be fully utilized to form a collaborative education system with ideological and political courses. Although certain achievements have been made in the definition of the connotation of curriculum-based ideological and political education, theoretical research, and the construction of the education mechanism, the practical application of curriculum-based ideological and political education is relatively weak, especially in the exploration of implementation approaches. An effective implementation approach is the fundamental guarantee for realizing the task of fostering virtue and nurturing talent. Against this background, in-depth research on the implementation approaches of curriculum-based ideological and political education has significant contemporary value and practical guiding significance.

## **1.2. Research questions and objectives**

This study mainly focuses on the following three key questions: First, to deeply analyze the current situation of ideological and political education in the “Introduction to High-Speed Railways” course in higher vocational colleges and identify typical problems; second, to explore how to effectively extract ideological and political elements from high-speed railway professional knowledge, such as national pride reflected in the history of high-speed railway development and the spirit of craftsmanship in the process of technological innovation <sup>[2]</sup>; third, to study the specific paths for constructing a collaborative education model of “professional teaching - ideological and political integration - practical transformation.”

## **1.3. Research framework**

This study conducts an investigation and research on the ideological and political education construction of the “Introduction to High-Speed Railways” course in higher vocational colleges, deeply analyzes the relevant experiences of colleges and majors with better ideological and political education construction <sup>[3]</sup>, and draws on them. It identifies the current urgent problems in the ideological and political education construction of the “Introduction to High-Speed Railways” course and proposes corresponding countermeasures and suggestions.

## **1.4. Research significance**

### **1.4.1. Theoretical significance**

As a fundamental course for transportation-related majors, “Introduction to High-Speed Railways” traditionally focuses on imparting professional knowledge, but lacks emphasis on value guidance. Integrating ideological

and political education into this course helps cultivate students' patriotic sentiments, professional ethics, and innovative spirit, enabling them to become well-rounded, high-quality railway professionals. This aligns with the new requirements for talent cultivation in the transportation industry <sup>[4]</sup> and is of great significance for promoting sustainable development in the sector.

#### **1.4.2. Practical significance**

The application of the concept of ideological and political education in the teaching of "Introduction to High-Speed Railways" helps achieve the educational goal of fostering virtue and talent, and promotes all-round student development. It has a profound and lasting positive impact on students' future careers. For students, it can enhance their interest in learning "Introduction to High-Speed Railways", improve their correct understanding of the major, cultivate their spirit of craftsmanship that strives for excellence, and instill a sense of responsibility and professional identity as a career person. For teachers, conducting ideological and political education in the course based on an investigation and analysis of the current teaching situation can improve teaching evaluation and effectively enhance the quality of education and teaching.

## **2. Research methods**

### **2.1. Literature review method**

Search for literature related to course-based ideological and political education and the introduction to high-speed railways on academic journal websites such as CNKI. Sort out and analyze the content related to this research, understand the current research status and shortcomings, and determine the research focus.

### **2.2. Survey research method**

In this study, mainly through this method, a questionnaire survey is conducted among students in the school to understand the current teaching situation of the Introduction to High-Speed Railways course, the satisfaction with the existing ways of integrating ideological and political elements, the types of ideological and political elements expected to be integrated, and the conditions for conducting ideological and political education in the course. The results of the questionnaire survey are sorted out, analyzed, and summarized.

### **2.3. Interview method**

Conduct interviews with teachers in the school. Understand the teachers' understanding of ideological and political education in professional courses and the implementation situation in current teaching. Analyze the existing problems and their causes.

### **2.4. Case analysis method**

Collect national exemplary courses of course-based ideological and political education and excellent teaching cases from high-speed railway-related colleges and universities. Conduct in-depth analysis of their course design, teaching methods, and strategies for integrating ideological and political elements. Summarize successful experiences and typical practices, and analyze their reference value to provide a reference for constructing ideological and political education strategies suitable for the Introduction to High-Speed Railways course in higher vocational colleges.

### **3. Problems in the construction of ideological and political education**

#### **3.1. Inadequate exploration of ideological and political elements**

The integration of ideological and political elements in course-based ideological and political education is not deep or comprehensive enough. Often, only obvious ideological and political points are focused on, such as the sense of national pride brought by high-speed rail achievements. The complex ideological and political connotations behind the high-speed rail industry, such as the green and environmentally friendly concept in high-speed rail construction and the spirit of responsibility of a major country in high-speed rail international cooperation under the Belt and Road Initiative, are not fully explored. This makes the content of course-based ideological and political education relatively single, and it is difficult to meet the diverse learning needs of students. Survey data shows that 13% of students often feel the integration of ideological and political elements in the course, about 55% of students only occasionally feel the integration of ideological and political elements, and almost 32% of students feel no or very little integration.

#### **3.2. Single teaching methods**

In the process of course-based ideological and political education, some teachers still use traditional teaching methods and means, mainly through teacher lectures, lacking interaction and interest. In the information age, although some teachers have attempted to use online teaching platforms and other information means, most of them simply move traditional teaching content online without fully leveraging the advantages of information-based teaching methods in course-based ideological and political education. From the students' feedback on the teaching methods used by teachers to integrate ideological and political elements, the highest proportion of students chose "case analysis" at 52%, "direct integration in classroom lectures" at 33%, and other methods such as "group discussions" and "video presentations" at 15%. In the survey on the satisfaction with these teaching methods, only 45% of students expressed very satisfied or relatively satisfied, while 55% of students expressed generally satisfied, dissatisfied, or very dissatisfied. Regarding the question of "ways teachers should increase the integration of ideological and political elements", more than 80% of students selected "inviting high-speed rail industry experts to share" and "organizing on-site visits to high-speed rail construction or operation sites" and other novel methods, clearly indicating that the current teaching methods are relatively single and fail to fully motivate students.

#### **3.3. Dispersed and unsystematic teaching resources**

Currently, the teaching resources for ideological and political education in the Introduction to High-Speed Railways course come from various sources, including textbook cases, online materials, and enterprise practice cases, but lack unified planning and integration. For example, the ideological and political materials obtained by teachers are mostly in the form of scattered text, pictures, or short videos, and have not been classified and sorted according to course chapters and ideological and political themes. The ideological and political education resources developed by different colleges and universities are independent and lack a sharing mechanism, making it difficult for high-quality resources to be disseminated and promoted. In addition, the construction of the existing teaching resource library lags, and the resources are not updated promptly, which cannot meet the dynamic development needs of ideological and political teaching in the curriculum and seriously affects the teaching effect and the continuity of ideological and political education.

#### **3.4 The evaluation system of ideological and political education in the curriculum is not perfect**

At present, the evaluation system of ideological and political education in the "Introduction to High-Speed

Railway” course is not yet complete. The existing evaluation methods mainly focus on the assessment of professional knowledge, and lack scientific and effective methods and indicators for evaluating the effect of ideological and political education. In most cases, only simple qualitative evaluations are made based on students’ classroom performance, homework completion, etc., which cannot comprehensively and accurately measure the improvement of students’ ideological and political qualities. Moreover, the evaluation subjects are single, mainly based on teacher evaluation, lacking the participation of student self-evaluation, peer evaluation, and social evaluation subjects, such as enterprises, making it difficult to form a comprehensive and diversified evaluation system for ideological and political education in the curriculum.

## **4. Strategies for incorporating ideological and political education**

### **4.1. Optimize the design of teaching content and deeply integrate ideological and political elements**

Thoroughly analyze the content of each chapter of the “Introduction to High-Speed Railways” course and explore ideological and political elements. Based on the ideological and political element database, while clarifying the knowledge and ability goals of each chapter of the course, refine the ideological and political education goals. Hot news can be embedded in the teaching content to enhance students’ interest in learning. According to the results of the questionnaire survey, 99% of the students like to browse hot news on their mobile phones in their spare time. For example, they watch real-time social hot issues through Toutiao, Kuaishou, and Douyin. Therefore, the teaching content can be linked with hot news to attract students’ attention and stimulate their interest in learning. For instance, by combining the recent official operation of the China-Laos Railway international passenger train with the teaching content, such as in the teaching task of explaining the development overview of China’s high-speed railways, professional knowledge can be explained in conjunction with the “Medium and Long-Term Railway Network Plan,” allowing students to master professional knowledge while enhancing their sense of national pride in the harmonious railway promoting a strong country and their confidence in the new era railway spirit. Furthermore, through the sharp contrast between domestic and foreign railway transportation methods, students’ sense of identity and pride in the country can be stimulated, and the correct orientation of faith can be established. What is the daily passenger flow at the station now? How are the epidemic prevention measures being implemented? What measures have been taken for public security during the Spring Festival travel rush?

### **4.2. Innovate teaching methods to enhance the effectiveness of ideological and political education**

#### **(1) Case-based teaching method**

Collect a large number of real cases related to high-speed rail, including both positive achievement cases and negative warning cases. For instance, take the research and development and promotion of the “Fuxing” high-speed train as a positive case, and organize students to deeply discuss the ideological and political values such as technological innovation, teamwork, and national confidence reflected behind it, guiding students to analyze from multiple dimensions such as technological breakthroughs, talent cultivation, and national strategies. At the same time, introduce negative cases such as high-speed rail construction safety accidents and operation service quality issues, and let students discuss the issues related to professional ethics and safety responsibilities involved. Through the comparison of positive and negative cases, deepen students’ understanding and perception of ideological and political

concepts.

(2) Scenario-based teaching method

Design learning tasks based on real high-speed rail project scenarios, such as “Planning a new high-speed rail line for a certain city”. During the process of completing the project, students not only need to apply professional knowledge for line planning, station site selection, and technology selection, but also need to consider the impact of the project on local economic development, ecological environment, and social culture, integrating elements of social responsibility, environmental awareness, and cultural inheritance. Students carry out the project in groups, through teamwork and communication, cultivating teamwork spirit and coordination ability, and enhancing comprehensive quality in practice.

(3) Blended online and offline teaching method

Utilize the online teaching platform Superstar Learning Pass to build an ideological and political learning zone for the “Introduction to High-Speed Rail” course. Upload rich teaching resources, including ideological and political micro-lectures, documentaries about advanced figures in the high-speed rail industry, ideological and political special articles, etc., for students to learn independently. In offline classrooms, organize students to discuss and report on the online learning content, and have teachers provide comments and guidance, achieving an organic integration of online and offline teaching. For example, assign learning materials about “High-Speed Rail and the Belt and Road Initiative” online, and conduct group discussions in offline classrooms, allowing students to explore the role of high-speed rail in promoting international cooperation and spreading Chinese culture, expanding the depth and breadth of ideological and political education.

### **4.3. Integrate teaching resources and enrich the carriers of ideological and political education**

Develop online multimedia teaching resources and create a series of multimedia teaching resources related to ideological and political education in the course, such as teaching presentations, animations, and short videos. The teaching presentations use rich colors, vivid pictures, and intuitive charts to present ideological and political elements and professional knowledge to students in a direct way. The animations and short videos focus on specific ideological and political themes, such as “The Striving Spirit in High-Speed Railway Construction” and “The Mission and Responsibility of High-Speed Railway Workers”, attracting students’ attention and enhancing the appeal of ideological and political education through vivid images and concise explanations. In addition, news reports and documentaries about the high-speed railway industry can be collected and organized to establish a teaching resource library for ideological and political education in the course, providing convenient access for teachers and strong support for teaching.

### **4.4. Improve the course evaluation system**

#### **4.4.1. Evaluation combining online and offline**

On the online teaching platform, record the number of times students participate in discussions and use big data to analyze students’ learning paths. Through the data analysis function of Superstar Learning Pass, understand whether students repeatedly watch key ideological and political case videos and whether they actively search for related extension materials, and incorporate these learning behavior data into the evaluation. Offline, conduct scenario simulation group tasks and evaluate students from multiple aspects such as language expression, ideological and political viewpoint presentation, and adaptability. Online assessment accounts for 50%, and

offline assessment accounts for 50%.

#### **4.4.2. Multi-subject evaluation**

##### **(1) Self-evaluation and peer evaluation by students**

Students regularly evaluate their ideological and political performance in the course, such as the improvement of their ideological understanding and changes in behavioral habits. At the same time, in group projects and classroom discussions, students evaluate each other from aspects such as teamwork, contribution of viewpoints, and demonstration of ideological and political qualities. The results of self-evaluation and peer evaluation by students serve as a reference for teachers' evaluation and account for 30% of the students' total score.

##### **(2) Evaluation by enterprises**

For students with internship components, invite internship enterprises to evaluate their professional qualities, professional ethics, and other ideological and political aspects. Enterprises provide evaluation opinions on students' work attitudes, sense of responsibility, teamwork abilities, and compliance with enterprise regulations during their internship positions. The evaluation results from enterprises are fed back to the school and serve as an important basis for adjusting teaching content and evaluation methods. It accounts for 20% of the total score.

##### **(3) Evaluation by teachers**

Teachers, as the main assessment subject, are responsible for comprehensively evaluating students' mastery of theoretical knowledge, practical operation skills, and classroom performance. It accounts for 50% of the total score.

## **5. Conclusions and prospects**

### **5.1. Conclusions**

Through in-depth exploration of the ideological and political construction of the "Introduction to High-Speed Railways" course in higher vocational colleges, this study systematically analyzed the existing problems in the current ideological and political construction of the course and proposed a series of targeted construction strategies. The research found that the current ideological and political construction of the course faces multiple challenges, including insufficient exploration of ideological and political elements, inadequate teacher capabilities, monotonous teaching methods, a lack of evaluation systems, and scattered teaching resources<sup>[5]</sup>. These problems seriously restrict the effective exertion of the ideological and political education function of the course. To address these issues, the study proposed corresponding solutions. It provides an operational practical path for the ideological and political construction of the "Introduction to High-Speed Railways" course in higher vocational colleges, which is conducive to promoting the deep integration of professional education and ideological and political education, effectively enhancing the quality of talent cultivation, and meeting the demand of the high-speed railway industry for high-quality technical and skilled talents.

### **5.2. Research prospects**

The ideological and political construction of the "Introduction to High-Speed Railways" course helps students deeply understand the spirit of great craftsmen in the high-speed railway field and explore the major achievements in the development of high-speed railways. It truly realizes the fundamental task of cultivating virtue and fostering talent. It can enhance students' national pride in the railway industry's contribution to

the country's strength and their confidence in the new era railway spirit. It is beneficial for cultivating high-end technical and skilled application talents with a patriotic spirit, responsibility, and a sense of mission in the new era. The ideological and political construction of the course is a long-term and systematic project that requires continuous exploration and improvement. In the future, we will continue to deepen the teaching reform of ideological and political education in the course, further integrate ideological and political elements with professional knowledge, improve the teaching evaluation system, strengthen ideological and political education in practical teaching links, and continuously enhance the quality of ideological and political education in the course. We will contribute to the cultivation of more high-quality railway professionals with both virtue and talent. At the same time, we will also actively engage in cooperation and exchanges with other colleges and industry enterprises to jointly promote the development of ideological and political construction in transportation-related professional courses.

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## References

- [1] Ministry of Education, 2020, Guidelines for the Construction of Ideological and Political Education in College Courses. *New Education*, No. 464(19): 32.
- [2] Jing X, 2021, Practice and Exploration of Integrating Ideological and Political Elements into the Course of Introduction to High-Speed Railway. *Journal of Jiyuan Polytechnic*, 20(2): 28–31.
- [3] Shi J, 2020, Practice and Exploration of Integrating Ideological and Political Elements into Professional Course Teaching: Taking the Course "Urban Rail Transit Safety Management" as an Example. *Times Automobile*, 2020(23): 41–43.
- [4] Li H, Zhang Y, 2024, Research on Talent Demand in the High-Speed Railway Industry and the Talent Cultivation Model of Higher Vocational Colleges. *Vocational and Technical Education*, 45(18): 32–36.
- [5] Wang J, 2022, Analysis of the Design and Implementation of the Logistics Transportation Management Course in Higher Vocational Colleges under the Background of Curriculum-Based Ideological and Political Education. *Journal of Heilongjiang Institute of Teacher Education*, 41(1): 71–73.

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