Academic Journal of Management and Social Sciences
ISSN: 2958-4396 | Vol. 13, No. 1, 2025

Teaching Reform of IT Project Management Course Integrating Curriculum Ideology and Politics

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Abstract: Curriculum Ideology and Politics (CIP) is a pivotal measure for implementing the fundamental task of fostering virtue through education, a key pathway to achieving "Three-Wide Education" (comprehensive, entire-process, and all-round education), and an essential approach to cultivating builders and successors of socialism who are well-rounded in moral, intellectual, physical, aesthetic, and labor education. Based on the background of CIP development, this paper analyzes the shortcomings in the teaching of IT Project Management and formulates an overall instructional design for CIP integration. By organically integrating ideological and political case studies with professional knowledge, the pedagogical approach leverages the IT project management knowledge framework to enhance students' ideological and political literacy. Building on classroom teaching feedback, the methods for CIP implementation are continuously optimized, and the course assessment mechanism is reformed through diversified evaluation forms and content, further promoting the improvement of students' ideological and political development. Teaching practice demonstrates that this CIP teaching model effectively strengthens students' sense of social responsibility and professional identity, providing a valuable reference for the implementation of CIP in science and engineering courses.

Keywords: Curriculum Ideology and Politics; Teaching Reform; IT Project Management; Competency-based Assessment; Teaching Practice Feedback.

1. Introduction

In December 2016, President of the People's Republic of China first proposed the important concept of " Promote aligned efforts and collaborative advancement between professional courses and ideological education to achieve a synergistic effect " at the National Conference on Ideological and Political Work in Universities, laying a theoretical foundation for the construction of curriculum ideology and politics(CIP) and clarifying that all types of courses bear the responsibility of ideological and political education. In December 2017, the Ministry of Education issued the " Implementation Outline for Enhancing the Quality of Ideological and Political Work in Higher Education Institutions ", clearly proposing to promote the teaching reform of CIP, systematically sort out the ideological and political elements in professional courses and integrate them into the entire teaching process [1]. In August 2019, the General Office of the Communist Party of China Central Committee and the General Office of the State Council jointly issued a document requiring the overall promotion of CIP in universities and subject-based moral education in primary and secondary schools, aiming to build an integrated ideological and political education system across primary, secondary, and tertiary education.In May 2020, the Ministry of Education introduced the "Guiding Outline for the Construction of Curriculum Ideology and Politics in Institutions of Higher Education". As the first programmatic document on CIP, it systematically clarifies the construction goals, contents and paths, and incorporates CIP into the teaching evaluation and the "Double First-Class" construction system. In April 2021, the Ministry of Education and other eight departments jointly issued a document incorporating CIP into the ideological and political work system of universities, emphasizing the deepening of the construction of " comprehensive ideological and political courses" and promoting the full integration of ideological and political education into professional teaching and practical links. In 2023, the Ministry of Education continued to deepen the high-quality construction of CIP by selecting national-level demonstration projects, promoting full coverage and strengthening teacher training.

From the above policy documents and conference spirits, it can be seen that the country is comprehensively promoting the construction of CIP in all types of courses. At present, the practice of CIP in universities is still in the initial stage, and the transformation from the concept to effective practical measures still needs to be gradually promoted in exploration. Realizing the high-quality integration of ideological and political education and professional courses is the core problem faced by the current construction of CIP. In this context, scientific and systematic teaching design has become the primary link for universities to promote the implementation of CIP and the key to ensuring its real implementation and effectiveness.

In recent years, Chinese universities have made significant progress in CIP development, which is reflected in various aspects such as the clarification of ideological and political objectives, optimization of teaching content, innovation of teaching methods, restructuring of evaluation systems, and enhancement of teachers' moral education capabilities [2, 3, 4, 5, 6]. At the practical level, diverse approaches—including blended learning, ideological and political MOOCs, interactive teaching, as well as case-based, inquiry-based, and experiential teaching—have been comprehensively applied, effectively promoting the integration of ideological and political education with specialized disciplines [7, 8, 9, 10]. However, further efforts are needed to deepen the systematic integration of professional knowledge, the implementation of modern teaching philosophies, and the innovative application of teaching models in CIP.

IT Project Management, a core course in computer-related disciplines, aims to enhance the management efficiency of

software development projects by applying advanced project management theories and methods. It plays a critical role in cultivating high-level, internationalized, and engineering-oriented IT professionals. However, traditional teaching approaches often overemphasize the delivery of computer hardware/software knowledge and project management theories, while paying insufficient attention to students' comprehensive competency development and career readiness [7]. Moreover, the integration of specialized education and ideological and political education remains superficial, with ideological elements often being mechanically inserted rather than organically unifying knowledge impartation, value shaping, and capability building. To address these issues, this study explores the integration of ideological and political case studies into the teaching of IT Project Management, aligning with the talent cultivation objectives of the discipline. The goal is to strengthen students' practical project management skills and sense of social responsibility, thereby contributing to the cultivation of a new generation of capable and responsible youth with ideals, competence, and a strong sense of mission.

2. Problems in Current Teaching Practices

Currently, most universities still face significant challenges in integrating ideological and political education with professional education. Although the "one-vote veto" system for teachers' professional ethics has been widely established to regulate teacher conduct, there remains a tendency to prioritize "talent" over "moral character" in student development, failing to truly embed ethical education throughout the entire teaching process. The main issues are manifested in the following four aspects:

(1)Weak Capacity for Collaborative Education Among Teachers

In the ancient dictum, "A teacher is one who transmits the Way, imparts learning, and resolves doubts," the mission of "transmitting the Way" holds primacy, with its essence lying in cultivating character. In the process of CIP reform, teachers play a key role as the main actors. However, the current evaluation and incentive mechanisms in universities still prioritize teaching hours and research, leading to insufficient recognition of ideological and political education among teachers and limited practical initiative. As a result, ideological and political content is often rigidly and mechanically inserted into classroom teaching, significantly undermining the effectiveness of education.

(2) Students' Ideology Influenced by Diverse Environments

In the new media environment, college students are more susceptible to the impact of diverse cultures and values, leading to new trends in their ideological perspectives. Some students blindly worship Western culture and pursue individual expression while neglecting local values and the overall interests of society. Materialism and consumerism have also spread among computer science majors, causing them to focus excessively on personal desires and lack identification with national development and the long-term interests of the people. This may lead to deviations in values and behavioral misconduct.

(3)Rigid Integration of Ideological and Political Elements

Currently, teachers still struggle to naturally incorporate ideological and political elements into curriculum design, often resulting in forced and artificial integration. There is a lack of ability to explore and seamlessly merge ideological and political education into teaching contexts. Meanwhile, universities have insufficient investment in the systematic development of ideological and political teaching resources, which hinders the effective implementation of curriculum ideology. Ideal ideological and political education should be "like a gentle rain and soothing wind," allowing students to accept it naturally and unconsciously.

(4) Inadequate Management Mechanisms

At present, the development of ideological and political education in computer science programs is still in the exploratory stage, with management mechanisms yet to be fully established. Universities lack systematic theoretical support and practical validation in top-level design, insufficient resource platform construction, and a absence of typical demonstration cases and dedicated promoting institutions. Although there is active response to national policies, the actual effectiveness still needs improvement.

3. Teaching Model based on "Curriculum Ideology and Politics"

The IT Project Management curriculum encompasses ten knowledge areas and five process groups, characterized by significant interdisciplinary integration. Its content spans multiple fields such as software engineering, psychology, organizational behavior, management, and economics. The course features a complex theoretical framework, diverse computational methods, and a rigorous system of formulas, making its implementation pedagogically challenging. Integrating ideological and political education into this course requires using the curriculum as a vehicle. By updating concepts, innovating methods, identifying ideological elements, systematically designing instruction, and reflecting on outcomes, holistic education can be achieved throughout the learning process. This approach helps students develop a scientific, comprehensive worldview, social perspective, and outlook on life, often yielding educational results that surpass those of traditional ideological and political courses.

3.1. Instructional reform design

Leveraging case studies from major national projects such as China's Lunar Exploration Program and the Hong Kong-Zhuhai-Macao Bridge can effectively enhance students' sense of national confidence and pride. During implementation, detailed ideological teaching plans should be formulated based on the characteristics of each chapter. An overview of the overall instructional design is summarized in Table 1[2, 6, 9].

3.2. Implementation of the Teaching Reform

The IT Project Management course comprises a total of 48 credit hours, including 36 hours of theoretical instruction and 12 hours of practical laboratory sessions. After the first class, students are divided into groups (5–8 members per group), elect a project manager, and are seated according to their groups. To effectively integrate ideological and political elements into professional teaching and avoid a preaching tone, the course employs diversified teaching methods such as role-playing, practical drills, brainstorming, and group debates to enhance student engagement and sense of identification. The following illustrates the specific approach to integrating ideological education through parts of the

"Scope Management" chapter:

Table 1. Overview of Ideological Teaching Design in the Course

Ten Knowledge Areas	Ideological and Political Case Studies	Knowledge Objectives	Ability Objectives	Ideological and Political Objectives	Diversified Teaching Methods
Integration Management	The 100-year journey of the Communist Party of China; South-to-North Water Diversion Project; West-to-East Gas Pipeline Project; Cross-regional Coordination in the Construction of the Hong Kong-Zhuhai-Macao Bridge	Master the basic methods of project planning, change management, and execution coordination	Ability to develop project charters and coordinate tasks across project phases	Cultivate strategic thinking and practice a systematic approach to serving the nation through technology	Lecture, Case Study, Group Tasks
Scope Management	The 14th Five-Year Plan; The horse heads south while the chariot points north; BeiDou Navigation Satellite System; Chang'e Program; Demand Change Control in the 12306 System During Spring Festival	Master the definition of software requirements and avoid scope changes and creep	Ability to write clear requirement documents and manage change requests	Establish a spirit of contract, emphasize commitment and execution, and develop a global perspective	Lecture + Examples, Role-Playing, Practical Exercises
Schedule Management	The Tortoise and the Hare Revise the Rules; Schedule Control in the 10-Day Construction of Huoshenshan Hospital	Master the creation of Gantt charts and milestone plans	Ability to use tools (e.g., MS Project, Excel) to develop reasonable schedule plans	Develop habits of punctuality and efficiency, understand that time is productivity	Tool Training, Group Discussion
Cost Management	The Ants Store Food in Summer for Winter; Cost-Benefit Analysis of New Energy Subsidy Policies	Master the methods of budgeting and cost control in software projects	Ability to estimate project costs and identify risks of overspending	Strengthen the sense of national mission in optimizing the allocation of technological resources	Lecture + Calculation Exercises, Case Analysis, Organized Debate
Quality Management	The Craftsman Polishes a Mirror for Ten Years; Zero-Defect Management in the Fuxing Bullet Train; Made in Japan and Germany	Understand the core processes of software testing, quality control, and assurance	Ability to design test cases and implement quality reviews	Cultivate a craftsmanship spirit of excellence and pursue superior quality	Lecture + Demonstration, Video Learning
Resource Management	Liu Bei's Three Visits to Zhuge Liang; Collaboration Model of the Ten-Thousand-Person Team in Aerospace Engineering	Master the techniques of IT team division, task allocation, team building, and development	Ability to assign roles reasonably and resolve team conflicts	Emphasize teamwork and respect for individual value	Scenario Simulation, 360-Degree Feedback
Communications Management	Yanzi's Mission to Chu; Cross-Cultural Communication in the Belt and Road Projects; Doctor-Patient Incidents	Master the use of communication tools such as project meetings and documentation	Ability to write meeting minutes and effectively report project status	Develop technical diplomacy skills to contribute to a community with a shared future for mankind	Practical Drills, Documentation Evaluation, Cross-Group Exchange
Risk Management	Risk Preparedness in the Chip Industry Supply Chain; Cybersecurity Protection in Financial Systems; Heinrich's Law; The Squirrel Stores Nuts for Winter	Ability to identify common software risks and develop response strategies	Ability to create risk registers and develop contingency plans	Enhance crisis awareness and cultivate the ability to respond calmly to problems	Brainstorming, Scenario Response
Procurement Management	The Fox Bargains Using the Tiger's Authority; Government Procurement of Domestic Operating System Replacements	Master the claims process in contracts and relevant content of bidding laws	Ability to evaluate supplier proposals and draft simple contract terms	Uphold integrity and prevent academic and commercial corruption	Contract Analysis, Simulated Bidding, Ethical Discussion
Stakeholder Management	Public Hearing System; The Shepherd Listens to His Sheep; Multi-Stakeholder Interest Coordination in the Xiongan New Area Construction	Learn to analyze user needs and balance multiple interests	Ability to create a power/interest matrix for stakeholders and develop communication strategies	Foster a user-first and socially responsible professional ethic	Role-Card Game, Video Case Studies

Collecting Requirements emphasizes actively identifying and analyzing stakeholder needs through methods such as interviews, questionnaires, and workshops, advocating a work style that involves "stepping out of the office and engaging deeply with the people." Project members are required to go into the front lines of business, communicate face-to-face with users, and understand their actual needs and pain points. This process also embodies the practice of the fine tradition of "maintaining close ties with the masses."

Defining Scope focuses on developing a clear scope statement that establishes project boundaries, deliverables, and constraints. This document is regarded as the "constitution" of the project and must be strictly adhered to once finalized. The course highlights that "scope creep" is a major cause of project failure, which essentially constitutes a violation of rules. This helps students develop a strong sense of rules and establish a contractual spirit that "nothing can be accomplished without norms and standards."

Creating the WBS requires students to master the ability to decompose complex projects layer by layer and understand

the organic connections between various components. The teacher emphasizes that team members should possess a "global perspective," recognizing the positioning and value of their tasks within the whole. The course introduces major national projects such as the "14th Five-Year Plan," the "BeiDou Navigation Satellite System," and the "Chang'e Lunar Exploration Program" as case studies. By analogizing their decision-making and collaboration mechanisms, it illustrates how deviations in any work package can trigger a chain reaction, affecting overall progress and quality, thereby strengthening students' systematic thinking and sense of responsibility.

Validating Scope, as the formal acceptance phase, is both a technical review and a transfer of responsibility. The course cites the "zero defects, utmost meticulousness" acceptance principle in China's aerospace projects, emphasizing that engineers must proactively identify problems and eliminate hidden risks. Every signature represents professional credibility and national standards, guiding students to adopt a rigorous and responsible professional attitude.

Controlling Scope is regarded as the stage that best reflects the "spirit of struggle." Project managers often face pressure from various parties for changes and must dare to adhere to principles, communicate effectively based on processes and data, and avoid unprincipled compromises. The course emphasizes that this process requires a balance of wisdom and courage to safeguard the overall interests of the project.

To deepen understanding, the class employs role-playing and practical exercises. For example, students simulate discussions between clients and development teams regarding ambiguous requirements (e.g., "develop a learning app"), requiring them to refine functionalities and define boundaries. This enhances their comprehensive abilities in requirements analysis, WBS decomposition, communication, negotiation, and stress resistance. At the end of the course, the teacher initiates discussions on technical ethics via the Learning Terminal platform, such as "Should the usage time of learning apps be restricted for minors?" This guides students to reflect on the social boundaries of technology and further cultivates their sense of social responsibility.

3.3. Classroom Teaching Feedback

In the reform of CIP, establishing an effective classroom feedback mechanism plays a crucial role in stimulating students' initiative and enhancing teaching effectiveness. Timely and frequent collection of student feedback helps teachers accurately grasp students' true thoughts and level of comprehension, enabling swift adjustments to teaching strategies. A recommended feedback approach is to reserve three minutes at the end of each session for students to answer three thoughtfully designed questions that progress from easy to challenging and from detailed to concise. For example, if a teacher wishes to understand how well their teaching methods are being received, the following questions could be posed:

(1)Please rate the educational significance of the case introduced in this session (0-10 points);

(2)List two moments during today's class when you felt most engaged;

(3)Offer one suggestion for a teaching behavior that you would like the teacher to increase, reduce, or improve in the future.

These layered and progressive questions allow teachers to gain a comprehensive understanding of students' classroom experience. After collecting the feedback, teachers should analyze and respond to it promptly, and the style of response should align as closely as possible with students' feedback styles to enhance communication effectiveness and foster a sense of mutual recognition.

3.4. Course Assessment and Evaluation

The fundamental objective of CIP reform is to enhance students' professional knowledge and practical abilities while guiding them to establish a scientific worldview, outlook on life, and values. In the implementation of this reform within the IT Project Management course, a combination of process evaluation and outcome evaluation has been adopted, emphasizing a diversified assessment philosophy. The main components and weight distribution of the specific assessment plan are presented in Table 2.

Table 2. Weights and Standards of Course Evaluation

Assessment Period	Assessment Method	Weight (%)	Grading Criteria
Regular Term	Attendance	5%	Score based on the attendance records exported from the Xuexitong platform for each class session.
	Assignments	25%	Score based on the results of theoretical objective question tests exported from the Xuexitong platform.
	Class Performance	20%	In the process of implementing the teaching reform for ideological and political education, an evaluation panel composed of multiple instructors employs diversified assessment methods. A comprehensive evaluation of student learning is conducted based on project practice, defense performance, innovation and difficulty level, documentation content, documentation standardization, intra- and inter-group peer evaluations, and responses to questions. Feedback is provided, and a class performance score is determined accordingly.
	Post-class Discussion	10%	Score based on the number of discussion forum posts exported from the Xuexitong platform.
Final Examination Period	Final Exam	40%	Score based on the results of the final major assignment/exam exported from the Xuexitong platform.

4. Conclusion

Teaching practice has demonstrated that the deep integration of professional courses with ideological and political education has yielded positive outcomes. Throughout this initiative, teachers' moral awareness and theoretical proficiency have significantly improved, effectively facilitating mutual growth in teaching and learning. Meanwhile, students have shown notable enhancement in

their comprehension of professional knowledge, learning initiative, cultural confidence, political identification, and sense of responsibility in the new era. Currently, there remains considerable room for further development in the ideological and political construction of the IT Project Management course. Moving forward, efforts will focus on enriching the teaching case bank for ideological and political education, systematically identifying high-quality cases with contemporary relevance and educational depth. Concurrently, efforts will be made to strengthen the teacher training system and course structure, integrate ideological and political assessment indicators into the comprehensive course evaluation framework, foster the formation of a high-level teaching team for ideological and political education within the course, and enhance teachers' instructional capabilities in this area through diversified teaching and research activities. With continuous improvements in teaching methods and content, the ideological and political development within professional courses will play an increasingly vital role in cultivating builders and successors who are well-equipped to meet the demands of the new era. This effort will tangibly achieve the synergistic integration of value shaping, knowledge impartation, and capacity building.

Acknowledgments

This work was financially supported by 2024 "Quality Project" Higher Education Teaching Reform Project of Guangdong University of Science and Technology " Research on the Project-Driven Reform of IT Project Management Courses" (Grant No. GKZLGC2024173).

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