

# Optimization Strategies for the Innovation and Entrepreneurship Curriculum System in Vocational Education from the Perspective of ESG

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**Abstract:** In the context where the concept of global sustainable development has deeply rooted among the people, the ESG concept has become the core indicator for evaluating the development quality of an organization, and has also provided a new pathway for the reform of Innovation & Entrepreneurship education in vocational Education. As the main platform for cultivating technically skilled innovative and entrepreneurial talents, vocational colleges need to actively align their Innovation & Entrepreneurship curriculum system with ESG requirements, in order to address the current challenges such as lag in educational philosophy, curricular content obsolescence, and insufficient practice. Based on the core essence of ESG, and aligned with the typological distinctiveness and talent cultivation objectives of vocational colleges, this paper analyzes the current practical challenges in integrating the Innovation & Entrepreneurship curriculum system in vocational colleges with the ESG concept, proposes targeted optimization strategies across five dimensions—curricular objectives, curricular content, teaching models, faculty construction, and evaluation mechanism—to promote the deep integration of Innovation & Entrepreneurship education with the ESG concept, and cultivate technical talent with innovation capabilities, entrepreneurial literacy and sustainable development awareness, catalyzing the high-quality development of vocational education and the construction of a green and low-carbon society.

**Keywords:** ESG; Vocational Colleges; Innovation & Entrepreneurship; Curriculum System; Optimization Strategies

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## 1. Introduction

As sustainable development become a global consensus, environmental stewardship, social accountability, and governance capabilities in the ESG concept have gradually permeated various industries, becoming the core competitiveness of enterprises and an important guiding principle for talent cultivation. Vocational education aims to cultivate technical talent oriented towards the frontlines of production, construction, services, and management. Innovation & Entrepreneurship education, as an important component of its talent cultivation, bears the significant mission of igniting students' innovative thinking, enhancing their entrepreneurial capabilities, and fostering their professionalism. Currently, the Innovation & Entrepreneurship curriculum system of certain vocational colleges still exhibit a tendency towards utilitarianism. They focus on imparting entrepreneurial skills while neglecting the cultivation of environmental stewardship, social accountability, and normative governance literacy, disconnecting from the requirements of ESG concept and the needs of social development. In this context, integrating the ESG concept into the Innovation & Entrepreneurship curriculum system of vocational colleges, and optimizing the curriculum design and implementation pathways are not only an inevitable requirement for vocational colleges to respond to China's sustainable development strategy and promote educational reform, but also a key measure to improve the quality of Innovation & Entrepreneurship education and cultivate transdisciplinary talent that suffices the demands in the times, exhibiting significant practical significance for promoting the connotative development of vocational education and serving the transformation and upgrading of the industry.

## 2. Inherent Compatibility of the Core Essence of the ESG Concept with the Innovation & Entrepreneurship Education in Vocational Colleges

The ESG concept originates from the theory of sustainable development. Its core lies in the synergistic efforts of the three dimensions: environment, society, and governance to achieve the long-term sustainable development of

an organization. Its core essence is highly compatible with the talent cultivation objectives of Innovation & Entrepreneurship education in vocational colleges, providing a solid foundation for the optimization of the curriculum system.

The environmental dimension emphasizes respecting nature, following nature, and protecting nature, and focuses on reducing the negative impact of development on the environment and promoting green and low-carbon development. This aligns with the objective of vocational colleges to cultivate students' green innovation awareness and guide them to engage in green entrepreneurship in Innovation & Entrepreneurship education. The Innovation & Entrepreneurship education in vocational colleges focuses on the practical application of technical skills. It can guide students to focus on green industry and environmental protection technologies to carry out innovation practice, integrate the concept of green development into the design and implementation of startup projects, thereby catalyzing green development.

The society dimension emphasizes fulfilling social accountability, and concentrating on the rights and interests of stakeholders, and prioritize fairness, justice, honesty, kindness and social contribution, which is highly consistent with the core requirements for cultivating students' professionalism and social accountability in the Innovation & Entrepreneurship education of vocational colleges. The innovative and entrepreneurial talent cultivated by vocational colleges should not only possess innovation capabilities, and entrepreneurship skills, but also establish sound entrepreneurship values, proactively bearing social accountability, and balancing economic benefits and social benefits in their startup practice.

The governance dimension emphasizes normative management, clear authority and responsibility, and integrity and self-discipline, and focuses on enhancing the operational efficiency and sustainable development capabilities of organizations, which aligns with the objectives of vocational colleges to cultivate students' normative entrepreneurial awareness and improve their project management skills in Innovation & Entrepreneurship education. Innovation & Entrepreneurship education should guide students to establish a compliance operations philosophy of businesses, master scientific project management methods, and cultivate a professional quality of integrity and self-discipline, thus laying the foundation for the long-term stable development of start-up projects <sup>[1]</sup>.

### **3.Current Challenges in the Innovation & Entrepreneurship Curriculum System in Vocational Education from the ESG Perspective**

#### ***3.1 Curricular Objective Misalignment, Insufficient ESG Integration***

Currently, there is a significant tendency of utilitarianism in the curricular objectives of Innovation & Entrepreneurship courses in some vocational colleges. They overly focus on the cultivation of students' entrepreneurship skills and place emphasis on the economic benefits of start-up projects, simply equating curricular objectives with students' entrepreneurial skill development and entrepreneurial success rate improvement, while neglecting the cultivation of environmental stewardship, social accountability and governance capabilities emphasized by the ESG concept. Curricular objectives do not adequately align with the demands of sustainable development, failing to incorporate elements such as green innovation, social accountability, and normative governance literacy into the objective framework, resulting in a disconnection between entrepreneurship and innovation education and the ESG concept. As a result, the students lack sustainable development consciousness, failing to meet the requirements of new age entrepreneurship and innovation.

#### ***3.2 Curricular Content Obsolescence, Structural Omissions in ESG Modules***

Curricular content is the core of the curriculum system. Currently, in vocational colleges, the content of entrepreneurship and innovation courses is outdated and monotonous, and does not integrate deeply with the ESG concept. On the one hand, the curricular content mainly focuses on traditional content such as fundamental of entrepreneurship, business model design, and market analysis, lacking modules related to the environment, society, and governance, and failing to cover content such as green entrepreneurial technology, social accountability

management, and compliance operations of start-up projects. On the other hand, the curricular content is disconnected from industrial evolution, failing to align with the demands of local green industry and emerging industries to integrate with practice cases and technical application related to ESG. As a result, the knowledge of students struggles to be applied in real-world Innovation & Entrepreneurship practice, failing to meet the demands of enterprises for talent with both ESG literacy and Innovation & Entrepreneurship capabilities.

### ***3.3 Rigid and Monotonous Teaching Models, Weak Practical Teaching Components***

The Innovation & Entrepreneurship courses in vocational colleges mostly employ the traditional teaching model of “theoretical instruction + case analysis”. The teaching methods are rigid and monotonous, lacking interactivity and practicality, which makes it struggle to stimulate students’ interest in learning and their innovative thinking. Meanwhile, weak practical teaching components have become a significant bottleneck impeding the integration of ESG concept [2]. Current practice teaching mainly focuses on simulated startups and startup competition, lacking authentic practice scenarios related to ESG, failing to establish practice bases aligning with green enterprises and public welfare organizations. As a result, students struggle to participate in practice projects related to green entrepreneurship and social accountability, and fail to convert the ESG concept into practical Innovation & Entrepreneurship capabilities. Furthermore, in the teaching process, there is a lack of targeted guidance on students’ ESG literacy, failing to cultivate students’ environmental stewardship awareness and social accountability.

### ***3.4 Insufficient Competencies of Faculty Teams, Failing to Support Curriculum Optimization***

Faculty teams are the core force for optimizing and implementing the curriculum system. Currently, the competencies of the entrepreneurship and innovation faculty teams in vocational colleges fail to meet the requirements of curriculum system optimization from the perspective of ESG. On the one hand, most Innovation & Entrepreneurship teachers lack knowledge reserve related to ESG. They have not systematically learned environmental stewardship, social accountability, compliance governance, etc., and have a shallow understanding of the ESG concept, failing to effectively integrate the ESG concept into course teaching and practical guidance. On the other hand, the structure of faculty team is unscientific. Most teachers come from higher education institutions and lack practical experience in Innovation & Entrepreneurship projects of enterprises. Especially, they lack relevant practical experience in green enterprises and public welfare organizations. It is difficult for them to carry out targeted teaching and practical guidance based on the industry reality and ESG requirements, which restricts the optimization of the curriculum system and the implementation efficacy.

### ***3.5 Systemic Deficiencies in Evaluation Mechanisms, Lacking ESG-Aligned Criteria***

Current evaluation mechanism for Innovation & Entrepreneurship courses in vocational schools is not perfect, lacking ESG-aligned criteria, impeding the sustainability-aligned curricular transformation [3]. The evaluation entities are relatively limited, mainly teachers. There is a lack of multiple entities such as students, enterprises, and the society to engage in the evaluations. The evaluation content focuses on students’ mastery of theoretical knowledge and their capabilities to write business plans, while neglecting students’ ESG literacy, green innovation capabilities, social accountability awareness, etc. The evaluation methods are relatively monolithic, mainly relying on summative evaluation, lacking process-oriented evaluation, struggling to comprehensively and objectively reflect students’ holistic competencies and Innovation & Entrepreneurship capabilities, and failing to effectively motivate students to proactively practice the ESG concept.

## **4. Optimization Strategies for the Innovation & Entrepreneurship Curriculum System in Vocational Education from the Perspective of ESG**

### ***4.1 Defining Curricular Objectives and Systematically Infusing ESG Principles***

Vocational colleges should reengineer the curriculum objective system for Innovation & Entrepreneurship based on the core essence of ESG concept and the talent cultivation objectives of vocational education to transcend the

utilitarian orientation and achieve the dual cultivation objectives of “innovation and entrepreneurship capabilities and ESG literacy”. On the one hand, they should clearly define the core curricular objectives, not only to cultivate students’ innovative thinking and entrepreneurial skills, and enhance their practical competencies in Innovation & Entrepreneurship, but also foster their environmental stewardship awareness, social accountability awareness and normative governance awareness, and guide students to establish sustainable entrepreneurial values. On the other hand, they should align with the characteristics of different disciplines to specify curricular objectives and combine the ESG concept with disciplinary features. For instance, environmental protection programs focus on developing green innovation and environmental stewardship, while service programs focus on cultivating social accountability and honest business, guaranteeing targeted and actionable curricular objectives, and promoting the deep integration of the ESG concept into the curriculum objective system [4].

#### ***4.2 Optimizing Curricular Content and Building ESG-Related Modules***

Vocational colleges should align with the typological distinctiveness of vocational colleges and the demands of industrial development to optimize the content of Innovation & Entrepreneurship courses centered on the three major dimensions of ESG, and construct a curriculum content system featuring “fundamental module + core module + characteristic module” to achieve the deep integration of curricular content with ESG concept as well as industry demands. The fundamental module retains conventional content, such as fundamental of entrepreneurship, market analysis, and business model design, to lay the solid foundation for students’ Innovation & Entrepreneurship. The core module adds ESG-related content, integrates with modules such as green entrepreneurship technology, social accountability management, compliance operations of start-up projects, and social entrepreneurship, and supplements with ESG-related policies and regulations, as well as practice cases to guide students to understand the application of ESG concept in Innovation & Entrepreneurship. The characteristic module is designed based on local industrial development and disciplinary characteristics, and incorporate ESG practice content related to local green and emerging industries. For instance, it can align with local environmental protection enterprises and public welfare organizations, and introduce relevant practice cases and technological application to enhance the practical efficacy, and targeted relevance of the curricular content, and avoid superficial generalization.

#### ***4.3 Innovating Teaching Methods and Strengthening Practice Teaching Components***

Vocational colleges should transcend the constraints of traditional teaching methods, innovate teaching approaches, strengthen practice teaching components, and catalyze the ESG theory-practice transduction, transforming stewardship principles into validated implementation frameworks. On the one hand, they should innovate classroom teaching models, adopt interactive teaching methods such as project-based teaching, case-based teaching, and group discussions, select ESG-related Innovation & Entrepreneurship cases to guide students to discuss and analyze the environmental stewardship, social accountability, and governance issues in the cases in group, igniting their learning interest and innovative thinking, and deepening their understanding of the ESG concept. On the other hand, they should strengthen the practice teaching components and establish a dual practice system featuring “on-campus practice + off-campus practice”. On campus, they should build green innovation laboratories and innovation & entrepreneurship incubation centers to provide platforms for students to conduct simulated practice in green entrepreneurship and social entrepreneurship. Off campus, they should strengthen cooperation with green enterprises, public welfare organizations and industry associations, establish practice bases, and organize students to participate in ESG-related projects of enterprises and social entrepreneurship activities, enabling students to practice the ESG concept in practice and enhance their Innovation & Entrepreneurship capabilities as well as their ESG literacy.

#### ***4.4 Strengthening the Construction of Faculty Teams and Enhancing the Holistic Competencies of Teachers***

Vocational colleges should forge a faculty team that possesses ESG literacy, Innovation & Entrepreneurship teaching capabilities, and practical experience to provide support for the optimization of the curriculum system. On

the one hand, they should enhance teacher training, and organize regular training sessions and seminars for Innovation & Entrepreneurship teachers on ESG-related topics to systematically study the ESG concept, relevant policies and regulations, as well as practical application knowledge, thereby increasing their ESG knowledge reserve. On the other hand, they should optimize the faculty structure, introduce outstanding talent with practical experience in corporate ESG management and green entrepreneurship to serve as full-time teachers, and engage senior executives from green enterprises, heads of public welfare organizations, and industry experts to serve as part-time teachers to enhance the faculty teams. Concurrently, they should establish a faculty practical training mechanism, organize teachers to conduct practical training in green enterprises and public welfare organizations, accumulate ESG-related practical experience, enhance teachers' teaching and practical guidance capabilities, and ensure that teachers can effectively integrate the ESG concept into course teaching and practical guidance [5].

#### **4.5 Refining the Evaluation Mechanisms and Establishing ESG-Aligned Criteria**

Vocational colleges should reengineer the evaluation mechanism of the Innovation & Entrepreneurship courses, and establish ESG-aligned criteria to achieve diversified evaluation entities, comprehensive evaluation content, and process-oriented evaluation methods. In terms of the evaluation entities, they should deploy multiple entities such as students, enterprises, and the society to engage in the evaluations, and use teacher evaluation, student self-evaluation, peer evaluation, enterprise evaluation, and social evaluation to comprehensively and objectively evaluate the implementation effectiveness of courses and holistic competencies of students. In terms of evaluation content, they should break through the limitations of traditional evaluations, incorporate students' ESG literacy, green innovation capabilities, social accountability awareness, and compliance of start-up projects into the evaluation scope, and combine these with students' theoretical knowledge and entrepreneurial skills to form a comprehensive evaluation content system. In terms of evaluation methods, they should transcend single summative evaluation model and adopt a combination of process-oriented evaluation and summative evaluation, focusing on evaluating students' learning process and practice process, recording students' performance in the implementation of the ESG concept and innovation & entrepreneurship practice, comprehensively reflecting students' holistic competencies and innovation capabilities, and guiding students to proactively practice the ESG concept.

### **5. Conclusion**

The ESG concept provides a brand-new pathway for optimizing the Innovation & Entrepreneurship curriculum system in vocational education, and puts forward higher requirements for the Innovation & Entrepreneurship education in vocational colleges. Current Innovation & Entrepreneurship curriculum system in vocational education suffers from problems, such as curricular objective misalignment, curricular content obsolescence, monolithic teaching models, insufficient faculty, and systemic deficiencies in evaluation mechanisms, which do not meet the requirements of the ESG concept and the societal development needs. Based on the core essence of ESG and the typological distinctiveness of vocational education, by implementing targeted strategies such as defining curricular objectives, optimizing curricular content, innovating teaching models, strengthening faculty construction, and refining evaluation mechanisms, vocational colleges can promote the deep integration of the Innovation & Entrepreneurship curriculum system with the ESG concept, solve current prominent problems in the curriculum system, and improve the quality of Innovation & Entrepreneurship education. Optimizing the curriculum system can cultivate technical talent with both innovation capabilities, entrepreneurial literacy and sustainable development awareness, not only facilitating vocational colleges to achieve connotative development, but also providing talent support for the construction of a green and low-carbon society and industrial transformation and upgrading to promote the implementation the concept of sustainable development in Innovation & Entrepreneurship sector.

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