

Dilemmas and Pathways in the Construction of Industrial Colleges in Vocational Institutions from the Stakeholder Perspective

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Abstract

Industrial colleges have become an increasingly important vehicle for integrating industry and education in vocational education, attracting broad attention from both scholars and society. From the stakeholder perspective, the construction of such colleges involves schools, enterprises, governments, industry associations, teachers, students, enterprise employees, parents, and the public. These factors engage in complex interactions that often generate conflicts and dilemmas. Value divergences, organizational differences, cultural gaps, property-rights ambiguities, and identity recognition issues have all hindered effective collaboration. Addressing these challenges requires balancing diverse values, fostering consensus while respecting differences, establishing robust mechanisms, clarifying property rights, and promoting collaborative synergy to fully realize the role of industrial colleges in advancing industry-education integration.

Keywords: stakeholders, vocational institutions, industrial colleges

1. Introduction

Since the concept of industrial colleges was first proposed in 2006, various explorations of their construction have been carried out nationwide. In 2017, the General Office of the State Council's Opinions on Deepening the Integration of Industry and Education explicitly encouraged enterprises to establish industrial colleges either independently or in collaboration with vocational schools and higher education institutions, marking the concept's first appearance in official national documents. In 2019, the State Council issued the National Vocational Education Reform Implementation Plan, which emphasized that the high-quality

development of vocational education requires vigorous promotion of a "dual-entity" education model that integrates industry and education and strengthens school-enterprise cooperation. As an effective vehicle for industry-education integration, industrial colleges have since attracted widespread attention (Wu, X. R., 2018). In 2020, the Ministry of Education released the Guiding Principles for the Construction of Modern Industrial Colleges (Trial), the first dedicated guideline issued by the state to provide a fundamental framework for industrial college development. In 2021, the Ministry of Education and the Ministry of Industry and Information Technology jointly announced the

first batch of 50 national modern industrial colleges, while provinces and municipalities also issued their own lists of construction projects, collectively sparking a nationwide surge in industrial college development.

At the national, provincial, and municipal levels, the construction of modern industrial colleges has been concentrated primarily in application-oriented undergraduate universities, with vocational colleges representing a relatively small proportion. As the main force in promoting industry–education integration, vocational institutions still face persistent challenges, including unclear construction models, inefficient operational mechanisms, and a lack of evaluation systems. The root cause of these challenges lies in stakeholder dilemmas, including value conflicts, organizational differences, cultural divergences, property-rights governance, and identity recognition. This paper therefore focuses on the construction of industrial colleges in higher vocational institutions, analyzing the dilemmas from a stakeholder perspective in order to identify feasible developmental directions and pathways.

2. Analysis of the Stakeholder Distribution Matrix and Interactive Relationships in the Construction of Industrial Colleges

2.1 Stakeholder Theory and Its Core Views

The stakeholder theory originates from the fields of economics and business management. The American economist Freeman defines stakeholders as groups or individuals who can affect an organization's achievement of its goals or are affected in the process of the organization's goal achievement, and are participants in the process of enterprise value creation (Freeman, R. E., 1984). This theory emphasizes that an enterprise is a collection of interest subjects that cooperate, compete, and have their own values. It pursues the overall interests of all stakeholders rather than merely pursuing profit maximization from the perspective of shareholders. All stakeholders affected by the enterprise have the right to participate in the enterprise's decision-making, and the interests and demands of all stakeholders should be fully considered and balanced.

With the continuous enrichment and development of the connotation of the stakeholder theory, stakeholders play an

important role in organizational behavior in terms of active participation in governance, supervision, and checks and balances. Since its birth, an industrial college itself has been a new alliance composed of various stakeholders. In this alliance, stakeholders are bound through mutual interest relationships, restricted by contracts, and a series of systems are established to ensure stable operation. Each stakeholder makes differentiated investments to realize its own interests and development, expecting to obtain outputs corresponding to the investments. These outputs include not only general financial returns but also various forms such as reputation, competitiveness, and intangible assets.

2.2 Stakeholder Distribution Matrix in the Construction of Industrial Colleges

The establishment of an industrial college aims to integrate various advantageous resources of schools and enterprises, and realize co-construction, co-management, and sharing through the signing of agreements. There are no strict-sense shareholders in the construction of an industrial college, and its development is jointly determined by all stakeholders. An industrial college is a typical stakeholder organization with multiple stakeholders featuring multiple levels, dimensions, and functions.

According to Mitchell's Attribute Classification Method (Mitchell, R. K., Agle, B. R., & Wood, D. J., 1997), stakeholders are classified based on three attributes: power, legitimacy, and urgency. Considering that the construction of an industrial college is different from business management, and the influence and correlation degrees of various stakeholders on the industrial college vary greatly, this article divides the stakeholders of the industrial college into four categories: core stakeholders, direct stakeholders, indirect stakeholders, and marginal stakeholders.

Core stakeholders should possess the three attributes of power, legitimacy, and urgency simultaneously and have a great influence and high correlation degree on the industrial college. Undoubtedly, schools and enterprises are the core stakeholders in the construction of the industrial college. As non-profit organizations, the core demand of schools is to cultivate high-quality and high-skilled talents. This demand is inherently non-profit and difficult to

be effectively measured by financial data. In the context of industrial college construction, their most direct interest demands include reforming the talent training model, optimizing the curriculum system, cultivating a team of “dual-qualified” teachers, building integrated theory-practice training rooms, establishing diversified internship bases, creating broad spaces and channels for students’ employment and entrepreneurship, and constructing effective social service carriers.

As typical economic organizations, the profit-seeking nature is the essential feature and core interest demand of enterprises. However, due to the limited profitability of participating in the construction of industrial colleges, the specific demands of enterprises in this regard mainly include obtaining government support in finance, taxation, and land, accessing low-cost human resources, lowering the enterprise training threshold to reduce time and monetary costs, acquiring school research resources, enhancing the core competitiveness of enterprise products, brand influence, and social reputation, so as to lay a good foundation for obtaining greater profit-seeking benefits.

Direct stakeholders only possess two of the three attributes of power, legitimacy, and urgency. In the construction of the industrial college, teachers, enterprise employees, and students are the most direct stakeholders. They have the attributes of power and legitimacy, but the urgency of cooperation is insufficient. The demands of teachers, enterprise employees, and students, as stakeholders aiming at personal development, are to improve their own theoretical and practical capabilities through the industrial college, lay a solid foundation for their own development, and better realize their self-worth. However, in specific practice, their interest demands also have differences. Teachers hope to participate in more enterprise practical training through the industrial college, thereby improving their teaching and research capabilities. Enterprise employees expect to obtain teaching opportunities to enhance their theoretical level and further improve their competitiveness within the enterprise. As the most direct “products” of the industrial college, students hope to gain a larger platform through the industrial college, master more theoretical and practical skills, improve their comprehensive and innovative abilities, so as to obtain stronger competitiveness and meet the

needs of better employment and development.

Indirect stakeholders refer to the government and industry associations. The interest demands of the government in the construction of the industrial college are mainly reflected in promoting the cooperation between schools and enterprises, achieving the high-quality development of vocational education with less investment, and obtaining good social benefits. The interest demands of industry associations in the construction of the industrial college mainly focus on promoting the overall development of the industry, and realizing the organic integration of the industry’s teaching chain and industrial chain, so as to improve the overall human resource supply of the industry and meet the needs of the industry’s high-quality development. To realize the corresponding interest demands, the government and industry associations will promote the development of the industrial college through policy supply.

Marginal stakeholders are families and the general public. Due to the in-depth connection between families and students, during the vocational education stage, their interest demands are to improve students’ theoretical and practical levels, so that students can obtain better employment and development opportunities. The inherent prejudice of the general public will directly affect the development and deepening of the industrial college. The general public also hopes that the development of the industrial college will change their inherent prejudice and dissatisfaction, and shift from being unfamiliar with the industry to supporting it.

The above four types of stakeholders constitute the stakeholder matrix for the construction of the industrial college, and jointly affect and promote the functions of the industrial college such as policy formulation, entity construction, achievement transformation, and effect evaluation. However, this interest relationship is not static. It will continuously change and update with the changes in the participation degree of different roles in the construction of the industrial college. Mastering the roles and functions of various stakeholders in the construction of the industrial college is of great significance for the theoretical guidance and practical exploration of the industrial college construction. However, since families, as marginal stakeholders, are closely related to students, and the general public pays more

attention to the vocational education to which the industrial college belongs, the stakeholders not specifically mentioned below do not include the marginal stakeholders composed of families and the general public.

2.3 The Gaming and Interactive Relationships Among Various Stakeholders

As core stakeholders, schools and enterprises are the main bodies and implementers of the industrial college construction, and play a decisive role in the construction and development of the industrial college. As direct stakeholders, teachers, enterprise employees, and students are the participants and beneficiaries of the industrial college construction. They directly affect the construction effect of the industrial college, and at the same time, the construction quality of the industrial college is also directly reflected in teachers, enterprise employees, and students. The government and industry associations are the guides and promoters of the industrial college construction. They are responsible for formulating policies and industry development plans in the development of the industrial college construction, and have a direct impact on the development direction of the industrial college. Meanwhile, the construction effect of the industrial college will also promote the change of policies and drive the development of the industry. Families and the general public are the coordinators and promoters of the industrial college construction, and can have a certain impact on the industrial college construction.

The responses of various stakeholders in the process of industrial college construction are different. As the main body of talent cultivation, schools attach importance to the quality of talent cultivation and the employment situation of students. They regard the industrial college as an important reform measure to improve the quality of talent cultivation and promote students' employment, and show relatively positive attitudes in the construction process of the industrial college. However, out of instrumental rationality, in the reform of industrial college construction, they pay more attention to the direction and constraints of superior policies, and their thinking and paths for promoting reform are relatively passive. Although their enthusiasm for construction is high, the implementation effect is poor.

Enterprises value the satisfaction of talent

supply in the construction of the industrial college. They take the industrial college as an important means to directly participate in the pre-stage of talent cultivation, and hope to have a wider participation in the process of talent cultivation. However, out of economic rationality, the participation of enterprises in the construction of the industrial college is mostly a trade-off between their economic interests or potential economic interests.

Teachers, students, and enterprise employees, as direct participants in the construction of the industrial college, are more passive in the construction process, and mainly participate out of personal interest needs. Students take the industrial college as an important springboard for employment. Teachers take the industrial college as a pursuit for realizing personal value, professional title promotion, and professional improvement. Enterprise employees participate in the construction of the industrial college mainly due to the needs of enterprise operation and management, and their personal improvement is mainly reflected in the improvement of social value and recognition.

The government and industry associations participate in the construction of the industrial college mainly out of consideration for the reform and development of education, and at the same time hope to coordinate more resources to promote the development of vocational education. This resource integration is mainly concentrated in administrative orders. However, if the administrative orders cannot generate internal motivation for schools and enterprises, the implementation effect will be greatly reduced.

3. Practical Dilemmas in the Construction of Industrial Colleges from the Stakeholder Perspective

3.1 Insufficient Internal Driving Force Caused by Multiple Value Conflicts

As an interest community jointly established by various stakeholders (Huang, Y. Y., & Li, X. Q., 2020), the value orientation of each stakeholder in the community directly determines the driving factors for their participation in the construction of the industrial college. As a core stakeholder in the construction of the industrial college, the school plays a leading role in the construction. It focuses on the educational value, pays attention to the improvement of curriculum construction, the teaching staff, and

the internship and training conditions. Its core value goal is to improve the quality of talent cultivation and maintain the educational quality and academic reputation.

As a core stakeholder of the industrial college, the enterprise focuses on the economic value, pays attention to the supporting capacity of the industrial college for the enterprise's human resources, and provides the enterprise with sustainable talent competitiveness. Its goal is to achieve the maximum economic benefits with the minimum investment.

As a guide for the construction of the industrial college, the government focuses on the political value, pays attention to the improvement of the school's talent cultivation capacity, and provides high-level human resource support for the regional economic development, so as to promote the high-quality development of enterprises and drive the regional industrial upgrading and economic development.

As a promoter of the industrial college, the industry association attaches importance to the social value, and its focus is on the improvement of the industry's talent competitiveness and the industry's upgrading and development capacity.

As direct stakeholders in the construction of the industrial college, students, teachers, and enterprise employees attach importance to the value of self-realization and development, pay attention to the platforms and opportunities needed for self-development, so as to improve their professional skills and levels, provide themselves with stronger competitiveness, and thus have the ability of sustainable development.

Due to the different value pursuits of various stakeholders such as schools, enterprises, the government, industry associations, teachers, students, and enterprise employees in the construction of the industrial college, there are intense value conflicts. In the construction of the industrial college, it is difficult to unify the purposes and needs of the participation of various subjects, which will be directly reflected in the goal positioning, talent training model, curriculum system, internship and training conditions of the industrial college. When their own value pursuits cannot find a balance point and be well realized, their internal motivation to participate in the construction of the industrial college will be lost, leading to the stagnation or failure of the construction of the industrial

college.

3.2 Unsmooth Operating Mechanism Caused by Differences in Organizational Attributes

Sociologists divide social activities into three major fields, and correspondingly, there are three sectors, namely the public sector or government organizations, the profit-making sector or private organizations, and the non-profit sector or the third sector.

Among the stakeholders in the construction of the industrial college, the government belongs to a typical government organization. It mainly conducts macro-control and formulates major policies. To ensure the effective implementation of policies, it has established a strict hierarchical relationship, emphasizes the standardization and procedural nature of operation, and follows strict legal systems and administrative procedures.

As an institutional organization providing educational services, the vocational school is an important part of the education system. The public welfare of education determines the non-profit organizational nature of vocational institutions (Du, L. S., 2018), which belong to the typical third sector. To emphasize the authority, hierarchy, and standardization of the organization, most vocational institutions currently adopt the traditional bureaucratic organizational structure. The organizational process of vocational institutions is mainly carried out through the president responsibility system under the leadership of the Party committee. Specifically, at the operation level, the decision-making is conducted through the Party committee meeting and the president's office meeting, and at the level of the secondary colleges, the organizational process is implemented mainly through the joint meeting of the Party and government.

Enterprises belong to the profit-making sector and are typical private organizations. The profit-making purpose is their essential feature. Under the guidance of the modern enterprise management theory, large and medium-sized enterprises mainly adopt a flat organizational management structure to improve the organizational operation efficiency. Their organizational process is mainly decided by the board of directors, and the implementation is carried out by the relevant business segments.

Among the stakeholders participating in the construction of the industrial college, the

government, schools, and enterprises belong to three different types of organizational systems, and all have the typical characteristics of the corresponding organizational systems. There are significant differences in organizational nature, organizational goals, organizational structure, and organizational processes, which will lead to obvious operational problems in the operation and management of the industrial college.

The main manifestations are as follows: Firstly, in the management of the industrial college, the president responsibility system under the management of the council is adopted. However, due to the different organizational attributes of various interest subjects, this system is difficult to be effectively implemented in the industrial college, which will lead the establishment of organizational structures back to the bureaucratic system, and the power operation "is difficult to get rid of the stereotype of administrative management" (Fan, L., & Deng, Z. B., 2021); Secondly, the construction of the system is based on the agreement reflecting the spirit of contract. This kind of contract itself is consultative, which leads to the established system being a flexible system, and it is difficult to play an effective role in the operation and management; Thirdly, the organizational attributes result in the weak position of enterprises in the participation of the industrial college construction, and the enterprises have a low sense of participation, which to a certain extent hinders the innovation of the governance mechanism of the industrial college.

3.3 Mutual Trust Dilemma Caused by Systematic Cultural Differences

Jonathan Friedman believes that cultural identity is a characteristic attribute of a specific group of people. It is not only a biological inheritance but also a tradition, and a cultural heritage that everyone can learn. Differences in organizational culture will show obvious differences in organizational management, communication, and operation. In the process of industrial college construction, the cultural habits and cultural identities of different organizations will lead to a mutual trust dilemma.

Vocational institutions have a dual organizational culture, including administrative culture and professional culture. The administrative culture emphasizes division of labor and obedience, while the professional

culture follows democracy and autonomy.

Enterprises have an organizational culture that pursues efficiency and legitimacy. The core goal of enterprises is to create wealth, and the pursuit of economic efficiency is their core organizational culture. The operation and management of enterprises are all for the sake of economic efficiency. However, when enterprises develop to a certain level, the pursuit of social recognition of legitimacy gradually becomes an important part of their organizational culture.

The differences in organizational culture between the two lead to a trust dilemma between the core stakeholders of the industrial college. The government and schools are worried that after the enterprises take the lead, the industrial college will be transformed into a profit-making institution, which would undermine the original purpose of the industrial college in talent cultivation. On the other hand, enterprises are concerned that the administrative systems of the government and schools will restrict the efficiency of the construction and development of the industrial college, thereby affecting their investment.

3.4 Property Rights Governance Dilemma Caused by Multiple Investment Subjects

The industrial college forms an interest community based on contracts, and the foundation of contracts is property rights. The finiteness of property rights requires that claims for property rights interests must fully consider the interests of others. Property rights can be obtained through labor, needs, and exchange (Jin, Y. H., & Jiang, R. M., 2007), while the cultivation property rights of the industrial college are incomplete property rights (Cai, R. L., & Xu, W., 2018).

In the construction of the industrial college, the investment in human, material, and financial resources of the industrial college mainly comes from schools and enterprises. Schools and enterprises respectively claim the corresponding property rights. To protect the interests of the investment subjects, it is necessary to sign relevant cooperation agreements. Even if the property rights are restricted by contracts based on agreements, it is still difficult to clearly define the property rights. Inevitably, the property rights originally owned by the investing parties are converted into joint ownership by the school and enterprise. Through the channels of obtaining property rights, the internal managers,

teachers, students of the industrial college, as well as the external government, industry associations, etc., may all become the owners of the industrial college's property rights. This further obscures the property rights of the industrial college, leading to some invested assets being "locked in" and even becoming sunk costs, which increases the investment risks of schools and enterprises.

3.5 Integration and Development Dilemma Caused by Different Identity Recognition

As direct stakeholders of the industrial college, students, teachers, and enterprise employees find it difficult to achieve integration in the construction of the industrial college. During their study in the industrial college, students ignore their dual roles, i.e., college students and industrial employees. Most students only recognize their identity as students and neglect their identity as employees. This leads to students' reluctance to learn the professional knowledge courses related to enterprises and a lack of integration and recognition of their identities.

School teachers and enterprise employees should have realized diverse identities through the industrial college. School teachers should be not only teachers of the industrial college but also members of enterprises. Enterprise employees who participate in the teaching work of the industrial college should also have the dual identities of enterprise employees and industrial college teachers. However, the integration of such identities is greatly compromised due to the institutional restrictions of both the school and the enterprise. As a result, teachers are more willing to engage in teaching rather than improving their professional skills in enterprises, and enterprise employees are also unwilling to engage in teaching work in the industrial college. The ineffective integration of the teaching staff of the industrial college has become a key factor hindering the improvement of the talent cultivation quality of the industrial college.

4. Development Pathways of Industrial Colleges from the Stakeholder Perspective

4.1 Balancing Values and Consolidating Consensus on Talent Cultivation

The establishment of an industrial college is a social shared organization under the new situation of school-enterprise cooperation (Zhang, X. C., & Wang, Y., 2022). The essential

feature of its construction lies in the coexistence and gaming of multiple values. Stakeholders need to seek a balance of interests on the basis of respecting each other's value demands. Talent cultivation and talent demand are the convergence points of value conflicts in the construction of industrial colleges. A value conversion mechanism can be used to realize the compatibility of multiple demands and achieve mutual compromise and balance of value pursuits.

The educational value has the internal logic to balance the value conflicts of various stakeholders. Enhancing the adaptability between talent supply and industrial demand, improving the quality and level of students' employment, taking the educational value as the fundamental pursuit, and regarding the talent quality as the basic value anchor of cooperation can help achieve consistency in talent cultivation goals and strengthen the participation motivation of all parties.

The key to construction is to innovate the talent cultivation model, transforming the talent cultivation from the model of "what teachers teach, students learn" to "what enterprises need, schools teach". Taking the talent demand of enterprises as the basic starting point, and always taking the enhancement of students' professional competence as the goal, the talent demand should be integrated into the entire process of education and teaching. The school and enterprise should jointly develop majors or professional groups that are highly in line with the industry, jointly formulate talent cultivation plans, jointly develop teaching materials and courses, jointly build internship and training bases, jointly build a "dual-qualified" teaching team, and establish a deep integration mechanism for talent cultivation between the school and enterprise, so as to effectively improve the quality of talent cultivation.

The improvement of talent cultivation quality strengthens the school's adherence to the educational value, ensures the school's fundamental goal of talent cultivation, is compatible with the government's political value, reduces the government's political costs in student employment, promotes the social value of industry associations, increases the influence of industry associations, and at the same time helps enterprises reduce the cost of human resource re-development, meets their pursuit of economic value, and also satisfies the needs of

teachers and students for self-realization and development value. In this way, the industrial college can achieve sustainable development in the gaming of multiple values and make greater contributions to the development of regional economy and industry.

4.2 Seeking Common Ground While Reserving Differences and Bridging Organizational Differences

Parsons believes that “a social organization is a social system that functions for a broader social system and is organized to achieve specific purposes” (Du, L. S., 2018), and organizations are definitely goal-oriented. Although the government, schools, and enterprises have different organizational attributes, they have consistent goals in the construction of industrial colleges.

Schools should provide good basic conditions and convenient resource sharing for the construction of industrial colleges, break the traditional bureaucratic management model in the construction of industrial colleges, and actively explore a management model suitable for the development of industrial colleges. On the premise of maintaining the public welfare of education, schools should learn from the management concepts and operating mechanisms of enterprises, establish a president responsibility system under the leadership of the council. The council operates and manages independently under the multiple systems of the government, schools, and enterprises, and the president serves the council directly.

When participating in the construction of industrial colleges, enterprises should give full play to the flexibility and efficiency of enterprise management, respect the educational laws and non-profit nature of schools, and actively adapt to the organizational culture and management model of schools. Enterprises can assign special personnel to be responsible for communication and coordination with schools, gain an in-depth understanding of the teaching arrangements and management processes of schools, and reach a consensus with schools on the formulation of talent cultivation plans and curriculum settings, so as to create conditions for the smooth operation of industrial colleges.

In macro-control and policy formulation, the government, in addition to emphasizing the standardization and legitimacy of procedures, should also fully consider the actual situation of vocational schools and enterprises,

appropriately simplify administrative procedures, and enhance the flexibility of policies. A special policy channel should be established for the construction of industrial colleges to reduce unnecessary approval and management links and improve the efficiency of policy implementation. The government should grant schools greater autonomy in the construction of industrial colleges, while strengthening supervision to ensure that industrial colleges develop in the correct direction.

In addition, joint efforts should be made to strengthen the cultural construction of industrial colleges, create a positive, collaborative, and innovative cultural atmosphere, enhance the sense of identity and belonging, gradually narrow the organizational differences, and promote the construction of industrial colleges to achieve new results.

4.3 Establishing Mechanisms and Enhancing Multi-Party Mutual Trust

Trust is the cornerstone of promoting cooperation. The construction of industrial colleges must be based on the mutual trust of stakeholders. All stakeholders should strengthen communication, enhance collaboration, and continuously enhance mutual trust.

In the construction of industrial colleges, first of all, it is necessary to clarify the respective responsibilities, rights, and interests of all parties, determine the equipment, technology, resources, and other elements invested by schools and enterprises in the construction of industrial colleges, clarify the scope of sharing and usage norms of the invested elements, and avoid the concern of cooperative parties about “resource occupation”. An information exchange platform can be built to strengthen daily information sharing and communication. At the same time, a regular communication mechanism should be established to regularly inform all stakeholders of the construction progress of the industrial college, the use of funds, and the quality of talent cultivation, so as to increase information transparency.

Secondly, teachers, managers, and students should be supported to visit and study in cooperative enterprises on a regular basis, so that they can understand the operation and management model and corporate culture of the enterprises. Enterprise personnel should be encouraged to participate in the teaching and

management activities of the school, so that they can have an in-depth understanding of the administrative culture and professional culture of the school. Clear rules for protecting students' rights and interests should be formulated, specifying the learning, internship, and employment of students in the industrial college. The construction achievements of the industrial college should be regularly displayed to eliminate the concerns of students and parents and enhance trust.

The government should play a coordinating and supervisory role in the construction of industrial colleges, establish and improve the supervision, evaluation, and incentive mechanisms for industrial colleges, ensure that enterprises do not deviate from the purpose of talent cultivation in the process of participating in the construction of industrial colleges, and at the same time protect the legitimate rights and interests of schools and enterprises. Practical incentive measures for the construction of industrial colleges should be formulated. Enterprises that perform well in the construction of industrial colleges and actively fulfill their responsibility of talent cultivation should be given rewards such as tax incentives and financial subsidies, and the incentive measures should be promptly implemented to stimulate the enthusiasm and sense of responsibility of enterprises in participation and ensure the stable expectations of enterprises for the construction of industrial colleges. The government should also strengthen the evaluation of the construction effect of industrial colleges in schools to promote the active participation of schools in the construction of industrial colleges.

Through these measures, the mutual trust among all stakeholders can be gradually enhanced, laying a good foundation of trust for the construction and development of industrial colleges.

4.4 Clarifying Property Rights and Building an Interest Alliance

Industrial colleges are jointly invested and constructed by different ownership entities, and their property rights have become an important issue of common concern to multiple entities (Zhang, H., & Wang, S., 2021). To solve the dilemma of property rights governance, it is first necessary to clearly define the property rights of industrial colleges.

Firstly, at the beginning of school-enterprise

cooperation, when signing a cooperation agreement, the ownership of the human, material, financial, and other resources invested by the school and the enterprise should be determined, the distribution method of the property rights of the new assets added during the operation of the industrial college should be clarified, and the distribution of property rights ownership when withdrawing from the construction of the industrial college midway should also be specified.

Secondly, a property rights protection mechanism should be established to prevent the property rights of either party from being infringed. For the property rights and interests that may be involved by the internal managers, teachers, students of the industrial college, as well as the external government, industry associations, etc., they should be standardized through reasonable system design. A special property rights management committee should be established to be responsible for coordinating and managing the property rights affairs of the industrial college.

The government can issue management measures for the definition of property rights of industrial colleges to strengthen the guidance on the definition of property rights between schools and enterprises in the cooperation process, accelerate the establishment of educational asset evaluation standards, and clarify the evaluation methods for the value of tangible and intangible assets. The evaluation of property rights should not only adhere to the market-oriented principle but also follow the public welfare principle of education.

By clarifying property rights, all stakeholders can clarify their own rights and responsibilities, thereby participating more actively in the construction of industrial colleges and building a close interest community.

4.5 Achieving Collaborative Resonance and Strengthening Identity Integration

The identification of participants with their respective roles within industrial colleges is crucial to the success of these institutions. Only by strengthening the sense of identity among students, teachers, and enterprise employees can the internal motivation for industrial college development be fully stimulated.

First, in curriculum design, more content related to enterprise practice and professional literacy should be incorporated. Students should be

organized to engage in experiential activities within enterprises, become familiar with the history, culture, and philosophy of the enterprises, and be guided in planning their post-graduation career paths. Such efforts can help students recognize the advantages of studying in an industrial college and gradually embrace their dual identity as both students and industrial employees.

Second, for teachers and enterprise employees, schools and enterprises should break institutional barriers and establish flexible personnel exchange mechanisms. Schools should provide greater policy support and incentives for teachers to gain practical experience in enterprises, linking such experience with professional title evaluation and performance assessments. Teachers should also receive reasonable remuneration for their enterprise-based work to enhance their enthusiasm and sense of professional identity. Enterprises, in turn, should provide guarantees and rewards for employees engaged in teaching within industrial colleges, including teaching subsidies and promotion opportunities. Through these measures, the identity recognition of all stakeholders can be strengthened, thereby promoting the integrated development of industrial colleges.

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