

Study on the Construction Logic of Municipal-Level Industry-Education Consortia in Vocational Education from the Perspective of Stakeholder Theory

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Abstract: As a new exploration in the integration of industry and education for vocational education, the development of municipal-level industry-education consortia is directly influenced by the willingness, enthusiasm, and initiative of various stakeholders to participate. By applying the stakeholder theory, stakeholders in municipal-level industry-education consortia are categorized into three types: core stakeholders, close stakeholders, and authoritative stakeholders. Research shows that among these three types of stakeholders, there exist cooperation divergences such as difficulty in unifying cognition caused by misaligned demands, difficulty in sustaining cooperation caused by misaligned costs, and difficulty in achieving collaboration caused by misaligned rights and responsibilities. By fostering a cooperative environment, clarifying cooperative value, coordinating cooperative methods, and incentivizing cooperative outcomes, a sound and long-term cooperation mechanism for stakeholders can be established, thereby promoting the municipal-level industry-education consortia in vocational education to pursue a path of connotative development.

Keywords: Stakeholder Theory, Municipal-Level Industry-Education Consortium, Construction, Logic

1. Introduction

The development of municipal-level industry-education consortia is one of the key initiatives in the reform of China's modern vocational education system.^[1] As a new-type carrier for practical and hands-on teaching, the development of such consortia undertakes the important task of innovating vocational education models and deepening the integration of industry and education. Therefore, promoting cooperation and coordination among stakeholders of municipal-level industry-education consortia, and safeguarding the rights and interests of these stakeholders, directly affects the sustainability of the development of municipal-level industry-education consortia.

2. Actual Logic: Municipal-Level Industry-Education Consortia Are an Inevitable Stage in the Development of Industry-Education Integration

The essence of vocational education lies in the integration of industry and education, which means that educational supply adapts to industrial demand, talent cultivation aligns with industrial development, and curriculum systems match industrial resources. Therefore, the collaborative education model featuring school-enterprise cooperation and the integration of work and study has always been regarded as the mainstream trend in the integration of industry and education for vocational education.

Since the 1990s, "Vocational Education Groups" formed by six types of entities—government agencies, industry organizations, enterprises and public institutions, vocational colleges, research institutes, and social organizations—have been fully promoted. These groups have played a pioneering and exploratory role in the development of municipal-level industry-education consortia. However, their influence is mainly confined to the field of vocational education, and their impact on industry, society, and people's lives is negligible. The organizations themselves lack sustainability, with their survival depending on the degree of government intervention.^[2] The emergence of these problems is mainly due to the fact that the rights and responsibilities of various stakeholders have not been clearly delineated, resulting in insufficient stability of the organizational structure and clarity of the

governance structure. This makes it difficult to achieve genuine multi-stakeholder collaboration and synergy, as well as in-depth integration of industry and education.

3. Action Logic: Stakeholder Theory Aligns with the Construction of Municipal-Level Industry-Education Consortiums

Based on the logical analysis that "concepts determine actions",^[3] applying Stakeholder Theory to clarify the responsibilities and rights of stakeholders is of great significance for the construction of municipal-level industry-education consortiums.

Stakeholder Theory was first proposed at Stanford University in the 1960s. The theory holds that the development of any organization is inseparable from the input or participation of various stakeholders. R. Edward Freeman defines a stakeholder as "any group or individual that can affect the achievement of an organization's goals or is affected by those goals."^[4] To prevent the overgeneralization of the concept of stakeholders, which may hinder the normal operation of the organization, scholars after R. Edward Freeman have suggested that stakeholders can be further subdivided based on three dimensions—legitimacy, power, and urgency—as well as the roles and functions they perform in the organization.^[5]

The municipal-level industry-education consortium is an industry-education integration platform jointly participated in, with interests shared and responsibilities undertaken by various stakeholders, and it is highly aligned with Stakeholder Theory. Using Stakeholder Theory as an analytical framework for problem-solving, stakeholders in municipal-level industry-education consortiums can be divided into three categories: core stakeholders, closely related stakeholders, and authoritative stakeholders.^[6]

Table1: Classification of Stakeholders in Municipal-Level Industry-Education Consortiums

Category	Role	Interests and Demands
Core Stakeholders	Vocational Colleges and Universities: Educational Resource Provider	Establish a mechanism for regulating talent supply and demand, optimize the training system for technical and skilled talents as well as innovative and entrepreneurial talents, and effectively improve the quality of talent training. By cooperating with enterprises, provide internships and employment opportunities for students, cultivate practical technical and skilled talents, alleviate the mismatch between educational supply and the needs of local industries, optimize program offerings and the structure of talent training, and enhance social recognition, public reputation, and the visibility of school-running.
	Enterprises (and Industries): Talent User and Beneficiary	Improve production efficiency, technical level, product quality, and innovation capacity, promote industrial development, upgrade production methods, enhance profitability, and foster employee development, so as to achieve the improvement of productivity and the enhancement of sustainable development capacity.
Closely Related Stakeholders	Teachers: Technical and Vocational Skills Instructor	Based on actual work tasks, processes, and scenarios, determine the curriculum system and talent training programs, formulate teaching standards and curriculum standards, develop textbooks and curriculum resources, and conduct assessment and evaluation of talent training. Achieve the mutual recognition of identities and role exchange among school, enterprise, and industry mentors, thereby gaining social status.

	Students: Industry-Education Integration Beneficiary	Carry out the "integration of courses and certificates" education, and strengthen vocational competence development. Establish a mutual conversion mechanism between courses and certificates, integrate vocational qualification certificates into the curriculum system, allow the obtained vocational qualification certificates to be converted into credits for corresponding academic education courses, and realize the organic integration of academic education and non-academic education.
Authoritative Stakeholders	Governments: Interest Coordination Leader	Serve talent training and industrial development, and explore diversified linkage mechanisms. Deepen industry-university-research-government integration, activate the effectiveness of high-quality resources, release the ecological value of the platform, inject stronger momentum into accelerating industrial development, promote industrial transformation, regional economic development, and industrial resource integration, and advance the fairness and equality of vocational education.
	Industrial Parks: Cooperative Resource Coordinator	Promote the close integration of the education chain, talent chain, industrial chain, and innovation chain, achieve the mutual integration and complementarity of education and industry, coordinate cooperative behaviors, and promote the cooperative training of technical and skilled talents between vocational colleges and enterprises; provide diversified high-quality education and training, and reflect its guiding value in collaborative talent training.

As a collaborative talent training platform featuring the integration of production, education, research, and application, as well as mutual interaction and win-win outcomes, the stakeholders involved in municipal-level industry-education consortiums are not limited to those listed in the above table¹. Social organizations, various media outlets, students' parents, and other parties can also be regarded as stakeholders. However, the impacts of these remote stakeholders are mainly manifested in an indirect form, and their exercised rights and capabilities are weaker than those of the stakeholders listed in the above table. Therefore, they are not within the scope of this paper.

4. Dislocation Logic: Manifestations of Differences Among Stakeholders in Municipal-Level Industry-Education Consortiums

The essence of disputes lies in the conflict between "public welfare attributes" and "market attributes" — governments and institutions have a public welfare orientation (regional development, talent cultivation), while enterprises and some research institutes have a market orientation (economic benefits, practical application of technology). Coupled with unclear division of powers and responsibilities and an imperfect interest distribution mechanism, it is difficult to coordinate contradictions.

4.1 The Dislocation of Demands among Relevant Stakeholders Leads to Difficulty in Unifying Cognition

Specifically, it manifests in the following aspects: (1) Disputes between governments and enterprises. As governments focus on the long-term upgrading of regional industries, employment stability, and the effectiveness of policy implementation, while enterprises pursue short-term economic benefits and are unwilling to invest excessive resources in long-cycle matters such as "talent cultivation and technological R&D", this leads to inconsistencies in goal cycles. (2) Disputes between governments and institutions. Governments require institutions to quickly adjust professional settings and update courses in response to regional industrial demands, but institutions are restricted by the inertia of discipline construction, faculty structure, and student status management rules, making it difficult to respond promptly, resulting in contradictions in demand docking efficiency; governments take "the number of talents delivered and the output value of industrial services" as core assessment criteria, while institutions pay more attention to teaching quality evaluation, scientific paper publication, and further education and employment rates, leading to conflicts in assessment indicators between the two

parties; (3) Disputes between enterprises and institutions. Enterprises require courses to focus on on-the-job practical skills (such as equipment operation and process execution), while institutions need to balance theoretical knowledge and comprehensive quality training, worrying that excessive "professionalization" will affect the attributes of academic education, leading to disputes over talent cultivation standards; enterprises hope that on-the-job internship students will undertake actual production tasks (to reduce labor costs), while institutions emphasize the "teaching attributes" of internships, fearing that students will become cheap labor and needing to ensure internship safety and quality, leading to disputes between learning and employment; (4) Disputes between industrial parks, enterprises, and institutions. Industrial parks focus on cutting-edge technological exploration and academic breakthroughs, while enterprises pay attention to the practicality of technology and market transformation value, making the two parties prone to disputes over "academic depth" and "application implementation" in cooperative R&D. It is difficult for the research achievements of industrial parks to be quickly transformed into teaching content of institutions; institutions hope that research institutes will provide training resources and faculty support, but research institutes are more focused on scientific research projects and lack motivation for teaching connection.

This indicates that in the construction of municipal-level industry-education consortiums, due to the different demands of different interest subjects and their emphasis on their own interests, it is difficult to unify the interest objectives and long-term interest prospects expected by various interest subjects.

4.2 The Dislocation of Costs among Relevant Stakeholders Leads to Difficulty in Sustaining Cooperation

Different interest subjects bear significant differences in costs within municipal-level industry-education consortiums. Studies have shown that in the practice of school-enterprise cooperation, enterprises have insufficient willingness to participate, and there is a widespread phenomenon of "failure of school-enterprise cooperation".^[7] The main reason lies in concerns about costs. Governments hope that enterprises will bear more talent cultivation costs (such as jointly building training bases and dispatching lecturers), while enterprises require governments to provide immediate policy support such as tax reductions and subsidies, leading to mismatched expectations regarding input and return. Governments tend to tilt funds and projects toward cooperation led by leading enterprises, but institutions argue that equal attention should be paid to the upgrading of teaching infrastructure and faculty training to avoid excessive resource inclination toward enterprises. Enterprises are unwilling to invest funds and update equipment for training bases in the long term, believing that institutions should assume the main teaching responsibilities; institutions, however, perceive enterprises as "taking without giving", criticizing their insufficient depth and sustainability in participating in talent cultivation. High-quality enterprise resources and government subsidies may be more inclined to favor undergraduate universities, while vocational colleges argue that they play a key role in skill training but receive less resource support. From a cost perspective, such cooperation based on common interests and goals is a transaction. Transaction costs exist in different links of cooperation among various stakeholders, including the early, middle, and late stages.^[8] Specifically, the transaction costs that only enterprises need to bear include information search costs, negotiation and decision-making costs, contract costs, supervision costs, implementation costs, and switching costs,^[9] as well as fixed asset investment costs, human resource investment costs, costs for building cooperation guarantee mechanisms, school-enterprise contact and search costs, cooperation opportunity costs, talent cultivation costs, enterprise operation change costs, sunk costs from students dropping out midway, and costs for participating in scientific research projects.^[10] As core stakeholders, all behaviors and decisions of enterprises are based on profitability, aimed at maximizing profits with minimal input. Currently, the government's preferential policies and incentive measures mainly focus on tax and fee reductions. However, if the reduced taxes and fees cannot offset the cost investment or are insignificant relative to the input, such preferences and incentives will fail to stimulate enterprises' willingness for long-term cooperation, and the phenomenon of "failure of school-enterprise cooperation" is likely to recur.

4.3 The Dislocation of Power and Responsibility among Relevant Stakeholders Leads to Difficulty in Achieving Synergy

Cooperation environment is the guarantee for the sound development of municipal-level industry-education consortiums. Generally, the cooperation environment includes policies and regulations, industrial economy, science and technology culture, geographical transportation, etc.

Among these, relevant policies and regulations are the core, as they have the most direct impact on municipal-level industry-education consortiums. However, the current relevant policies for municipal-level industry-education consortiums still remain at the framework level, with most provisions being grand narratives. They lack clear definitions of the responsibilities and authorities of different stakeholders, and the relevant expressions are relatively vague and lack operability.^[11] The more the municipal-level industry-education consortium develops, the more diverse and complex the tasks it faces, and these tasks are in constant flux. It is difficult to reach a consensus on who should assume new responsibilities and rights that may arise, relying solely on signing "cooperation agreements". Out of the consideration of pursuing benefits and avoiding harms, different stakeholders on the one hand hope to have more rights, and on the other hand hope to avoid corresponding responsibilities. This leads to overlaps and "ambiguous areas" in power and responsibility among different stakeholders. The ambiguity in the cognition of rights and responsibilities cannot be relied on "instrumental relationships" to maintain. It is necessary to establish a complete set of sound management rules and regulations and risk prediction mechanisms to form a pattern of collaborative governance among different stakeholders.

5. Synergy Logic: Cooperation Strategies of Stakeholders in Municipal-Level Industry-Education Consortiums

Municipal-level industry-education consortiums involve the extension of the vocational education training chain and the integration of the education system and the industrial system. Therefore, they require interest games and balanced power and responsibility among multiple departments, subjects, and levels.^[12] Applying stakeholder theory helps various stakeholders in municipal-level industry-education consortiums clarify their own behavioral boundaries, nature of property rights, and rights, responsibilities and obligations, and promote the connotative development of the consortiums. It also gives full play to the enthusiasm of stakeholders such as governments, enterprises, vocational colleges, industrial parks, teachers, and students. Centering on cooperation environment, cooperation value, cooperation methods, and cooperation achievements, a cooperation mechanism featuring ecological co-construction, resource sharing, achievement co-creation, and problem co-governance should be built. By adapting to market demand, keeping pace with industrial development, and being oriented towards the cultivation of high-skill and high-tech talents, we can improve the scientific research and teaching level as well as social service capabilities of municipal-level industry-education consortiums through improving relevant policies, laws and regulations, promote sound cooperation among stakeholders, and drive the healthy operation and sustainable development of municipal-level industry-education consortiums.

5.1 Cooperation Environment: Policy Guarantee and Safeguarding the Responsibilities and Rights of Stakeholders

The most important macro variable of the cooperation environment is relevant policies. Studies have found that the more stable the relevant policies are and the more they produce a symbiotic incentive effect on the stakeholders involved, the higher the environmental maturity of municipal-level industry-education consortiums will be.^[18]

First of all, policy refinement ensures the stability of the cooperation environment. Most of these policies issued at the macro and meso levels are principled documents. Although the path design takes into account the industrial and economic development status of different regions and the development level of industry-education integration, due to the different interest demands of various stakeholders in municipal-level industry-education consortiums, these policies need to be further refined and improved. It is necessary to strengthen the expression and operability of the existing policy framework at the micro level, further clarify the rights of various stakeholders, define their responsibilities, enhance the role of policies in macroeconomic regulation, resource allocation, market supervision and other aspects, and promote positive interaction among various stakeholders in a sound cooperation environment.

Second, policy matching ensures the reliability of the cooperation environment. Supporting policies include: (1) Policies to protect investment entities, financial subsidy and tax incentive policies, etc. Provide tax incentives to enterprises participating in cooperation to safeguard their interests and stimulate their enthusiasm and initiative in participation. Further introduce corresponding incentive policies and supporting implementation rules for land, credit, taxation and other aspects at the municipal level, and formulate enterprise compensation mechanisms through direct funding, entrusted

school-running, targeted bidding and other methods; (2) Regional industrial policies, skilled talent training policies, etc. Governments at all levels can make good use of policy tools by purchasing students' internship and practical positions, teachers' observation and exchange positions, talent skill training positions, etc., formulate corresponding supporting mandatory provisions at the micro level, and allocate relevant resources through public power.

5.2 Cooperation Value: Mutual Benefit and Win-Win, Clarifying the Common Objectives of Stakeholders

In the process of building municipal-level industry-education consortiums, establishing common cooperation value among stakeholders is the core of achieving common objectives such as mutual benefit and win-win, talent training, innovation and entrepreneurship, industrial transformation, and high-quality economic development.

First, clarify value objectives and establish an information linkage platform. To form a coordinated, efficient, positive, and healthy cooperative value, it is necessary to establish an information linkage platform and create an "information symmetry and sharing model" among various stakeholders. Under this model, the information of all stakeholders complements each other and achieves a high degree of coupling, making information transmission and exchange reach an ideal state.^[13] The information linkage platform not only helps address the issues of interaction and mutual assistance, unification and connection, and alignment of needs and expectations among various stakeholders regarding rights and responsibilities, tasks and demands, and policies and markets but also reduces additional costs incurred by wrangling, buck-passing, and conflicts arising from differences in value perception. Meanwhile, through dynamic tracking of various educational, industrial, and scientific research resources and data via the information linkage platform, relevant policies and plans can be adjusted in a timely manner, quality standards and assessment rules can be updated, joint promotion of scientific research project development and technological achievement transformation can be realized, and innovation and entrepreneurship incubation platforms can be provided.

Second, reach value consensus and respond to industrial development demands. In the construction of municipal-level industry-education consortiums, value consensus includes three aspects: the public utility of various stakeholders; the public expression of various stakeholders; and the standardized public welfare orientation of various stakeholders. On the basis of clarifying the value consensus, stakeholders need to jointly formulate a relatively complete set of value standards. Due to the different core interests of different stakeholders, there will be certain differences in their understanding and content of value standards. For this reason, focusing on development demands, stakeholders can coordinate and interact on the basis of equal consultation through participation, consultation, cooperation, and information exchange to reach consistent goals and action plans. By real-time tracking and timely feedback of industrial demands, we can adjust practical training curriculum standards, technical skill standards, talent training programs, and professional settings in a timely manner, providing a scientific basis for optimizing the curriculum system, eliminating practical training content and projects that are incompatible with technological development and industrial progress, and promoting the innovation of training methods and means.

5.3 Cooperation Methods: Supply-Demand Matching, Strengthening the Connection and Coordination of Stakeholders

Designing supply-demand matching cooperation methods and strengthening the connection and coordination of various stakeholders are the key to building municipal-level industry-education consortiums.

First, align with regional demands to realize the coordinated development of majors and industries. The construction of municipal-level industry-education consortiums cannot do without reliance on industrial parks. Industrial parks gather a large number of high-tech enterprises, innovative enterprises, and high-precision, specialized, and new enterprises. Besides a number of large enterprises, there are more various types of small and medium-sized enterprises (SMEs). Through investigations into industrial parks and listening to the opinions and voices of representatives from industrial parks, forward-looking predictions can be made for emerging industries and pillar industries, which accurately aligns with industrial development demands and provides guidance for improving the training system and model for high-skilled talents. Meanwhile, since institutions participating in the construction of municipal-level industry-education consortiums have professional talents and advantages in

technological research and development, they can penetrate into all links such as production, research and development, and technological development by establishing joint laboratories in industrial parks, participating in technical guidance, and conducting scientific research tackling key problems in the form of projects. This truly achieves "promoting industry through education and education through industry", breaks down the boundaries of industry-education cooperation, and promotes the mutual compatibility and mutual promotion of majors and industries.

Second, carry out project-based teaching to realize collaborative linkage in talent cultivation. Various enterprises are effective platforms and carriers for developing teaching projects. Taking technical difficulties arising in enterprises and various problems occurring in work practice as the sources of project-based teaching not only mobilizes students' learning enthusiasm but also enables the development of relevant courses around projects and flexible adjustment of teaching plans. This allows students to switch between learning and production, classrooms and workshops, complete the training and improvement of professional skills through "learning by doing and doing by learning", exercise their innovative and scientific research capabilities, make up for the shortage of professional training in technical talent cultivation, help enterprises achieve technological transformation, industrial upgrading and transformation, and realize high-quality development of regional economy.

Third, standardize assessment and evaluation to realize collaborative monitoring of effectiveness and efficiency. To evaluate the cooperation effectiveness, talent cultivation achievements, and innovation breakthroughs of municipal-level industry-education consortiums, it is necessary to establish an effective assessment mechanism. Given the complex and diverse elements of the municipal-level industry-education consortium system, no single evaluation method can fully reflect the actual situation of effectiveness and efficiency. Currently, some municipal-level industry-education consortiums have attempted to adopt the multi-dimensional assessment method. Multi-dimensional assessment is a comprehensive, whole-process evaluation system that combines qualitative and quantitative methods and covers all stakeholders of municipal-level industry-education consortiums. Assessment methods include Management by Objectives (MBO), Key Performance Indicators (KPI), and non-standardized evaluation methods. By scientifically developing evaluation indicators and combining quarterly assessment with annual assessment, as well as phased assessment with result-oriented assessment, it realizes the tracking and quantitative benchmarking management of the completion process, objectives, effectiveness, and efficiency of various stakeholders. From the perspective of application, it provides a scientific basis for analyzing stakeholders' willingness, degree, and motivation for cooperation, as well as for monitoring the coordination of municipal-level industry-education consortiums. The purpose of monitoring is to establish a reasonable interest distribution mechanism, stimulate the motivation of various stakeholders to participate in the construction of municipal-level industry-education consortiums through effective distribution, and promote deeper integration and interaction among various stakeholders. To standardize assessment and evaluation, it is necessary to establish a special working group composed of various stakeholders. Through regularly holding joint meetings, informing the progress of cooperation, coordinating and solving major problems in the cooperation process for supervision, the completion of the annual work tasks of the special working group shall be included in the evaluation of the performance of educational responsibilities by governments at all county and urban levels and the government's target management performance assessment.

5.4 Cooperation Achievements: Service Optimization, Innovating the Incentive Models of Stakeholders

In the process of participating in the construction of municipal-level industry-education consortiums, stakeholders have considerations of economic and social benefits in their expectations for cooperation achievements. When economic benefits conflict with social benefits, balancing the relationship between talent cultivation, social services, and production efficiency, production and operation requires accurately grasping the interest demands and sources of motivation of governments, higher vocational colleges, enterprises, industries, and other social forces. It is necessary to fully mobilize their initiative and enthusiasm and strengthen the incentive model of "government promotion, industry guidance, and the dual-subject of schools and enterprises".^[14] Therefore, optimizing services and effectively incentivizing the generation of innovative achievements are the driving forces for various stakeholders to build municipal-level industry-education consortiums.

First, innovate support methods, control construction costs, and mobilize enterprises' enthusiasm. Studies have found that in municipal-level industry-education consortiums, the overall cost and return of enterprises' investment are in a state of "low cost and low return".^[15] For enterprises, although

cooperation costs are inevitable in the construction of municipal-level industry-education consortiums, exceeding a certain limit will adversely affect their enthusiasm for participation. Currently, local governments at all levels mainly adopt financial subsidies, developmental subsidies, and policy-based subsidies to support enterprises participating in the construction of municipal-level industry-education consortiums. These subsidies have limited scope of application and high thresholds, so we can learn from Australia's TAFE project. Australia's TAFE (Technical And Further Education) project is a vocational and technical education model widely recognized across Oceania, Europe, and Southeast Asia, and is also regarded by China's vocational education sector as one of the world's advanced vocational education models. To ensure the success of TAFE, the Australian government has designed different special subsidies for different enterprises in different industries through legal provisions.^[16] Developing new special subsidies adapted to municipal-level industry-education consortiums can largely offset part of the costs for enterprises to participate in the construction, and mobilize their motivation and willingness to participate. Changshu City, Jiangsu Province, issued the Operational Assessment Rules for Modern Vocational Education Training Bases, which provides rewards and subsidies for municipal-level industry-education consortium construction projects to help enterprises control construction costs. The specific practice is that within the training cycle (three years), qualified municipal-level industry-education consortiums after assessment will receive rewards and subsidies based on 60% of the actual investment amount of enterprises (with a maximum limit).^[17] From the perspective of international successful experience, reducing the proportion of costs borne by enterprises and having public finance assume the main costs^[18] are the main practices and development direction to incentivize enterprises to participate in the construction of municipal-level industry-education consortiums.

Second, innovate platform models, deepen the talent cultivation system, and enhance cooperation coordination. As a government-led public organization, the construction of municipal-level industry-education consortiums is directly affected by the government's governance model, value orientation, and policy trends. To attract a broader range of stakeholders to participate in the construction through government guidance, it is necessary to innovate the existing platform models of municipal-level industry-education consortiums, improve the efficiency of resource allocation, and fully stimulate the enthusiasm of stakeholders. (1) Establish industry-education alliances and industrial colleges, adopt order-based training methods, build an industry-education integration organizational structure and communication and collaboration platform, form a seamless connection between enrollment, training, and employment, develop full-chain integration of recruitment, enrollment, and investment promotion, and realize high-quality industrial development; (2) Deepen talent cultivation cooperation. Create a new talent cultivation model of "academic education + vocational education", promote the joint development and integration of academic education and vocational education, and build municipal-level industry-education consortiums into a new talent cultivation platform integrating industry, education, competitions, application, and services; (3) Build high-level teaching teams. Implement two-way assessment, and promote the two-way flow of college teachers and high-tech, high-skilled talents from enterprises through the two-way appointment, part-time employment and dual-salary system. Through two-way evaluation, select a group of scientific and technological innovation talents and high-skilled talents to serve as external teachers or industrial professors for key majors.

6. Conclusion

Municipal-level industry-education consortiums are upgraded carriers of industry-education integration, as well as new explorations and practices for in-depth industry-education integration. Currently, municipal-level industry-education consortiums maintain a strong development momentum, with a considerable number under construction across various regions. In the future, with the development of municipal-level industry-education consortiums, issues such as enhancing the sustainability of cooperation among various stakeholders, increasing policy and financial support, and further improving organizational structures and governance mechanisms will attract greater attention. As the theoretical basis for the construction of municipal-level industry-education consortiums, stakeholder theory holds special significance and important value for promoting the participation enthusiasm, willingness, and initiative of various stakeholders, and constructing a long-term mutually beneficial and symbiotic mechanism for stakeholders in municipal-level industry-education consortiums.

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