

SCHOOL-ENTERPRISE COOPERATION MANAGEMENT FOR VOCATIONAL EDUCATION IN GUANGXI PROVINCE

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ABSTRACT

Against the backdrop of China's ongoing reform of modern vocational education and the deepening integration of industry and education, school-enterprise cooperation (SEC) has become a critical governance mechanism for improving the quality of vocational education and cultivating highly qualified technical and skilled professionals. Guangxi Zhuang Autonomous Region, as China's strategic gateway to the Association of Southeast Asian Nations (ASEAN), has a dual mandate: to support regional industrial transformation by developing a highly skilled workforce and to advance cross-border vocational education cooperation with ASEAN countries. Accordingly, effective SEC management is increasingly important for enhancing educational quality, strengthening regional industrial competitiveness, and promoting sustainable China-ASEAN educational collaboration. This review synthesizes the literature on the conceptual foundations, theoretical perspectives, regional practices, international experiences, and persistent challenges of SEC management in vocational education, with particular attention to Guangxi. The analysis identifies four priorities for future research: (1) constructing a localized theoretical framework that reflects Guangxi's border location, multi-ethnic context, industrial structure, and ASEAN-oriented development strategy; (2) strengthening empirical inquiry through integrated quantitative and qualitative methods; (3) incorporating enterprise perspectives to clarify stakeholder interests, collaborative governance processes, and the conditions for partnership sustainability; and (4) exploring innovative SEC models that facilitate deeper vocational education cooperation between Guangxi and ASEAN countries. By consolidating the existing body of knowledge and identifying critical gaps, this review provides a theoretical basis for future empirical research, evidence-informed policy development, and the institutional optimization of SEC management in Guangxi's vocational education system.

Keywords: Vocational Education; School-Enterprise Cooperation Management; Industry-Education Integration; Collaborative Governance.

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INTRODUCTION

Vocational education is an indispensable component of modern education systems and a strategic instrument for facilitating industrial transformation, economic restructuring, and sustainable employment. As economies increasingly shift toward innovation-driven and knowledge-intensive development, vocational education plays a growing role in preparing highly skilled professionals who can respond to evolving labor-market requirements (Li & Zhang, 2025). Recognizing this strategic function, the Chinese government has strengthened the top-level design of vocational education through a series of national policy initiatives. The revised Vocational Education Law of the People's Republic of China (2022) emphasizes the deep integration of industry and education, identifies school-enterprise cooperation (SEC) as a fundamental approach to talent development, encourages enterprises to participate throughout the educational process, and promotes collaborative governance involving government agencies, educational institutions, enterprises, and industry associations (Shi & Wu, 2026). Moreover, national development planning for vocational education has identified the institutionalization, standardization, and sustainable operation of SEC as central priorities in the modernization of China's vocational education system (Wang, 2023).

Within this national policy environment, Guangxi Zhuang Autonomous Region occupies a distinctive strategic position because of its geographical location, industrial structure, and sociocultural characteristics. As China's only autonomous region connected to ASEAN member states by both land and sea, Guangxi functions as a major gateway for economic cooperation and educational exchange with Southeast Asia (Zeng, 2025). At the same time, the region is undergoing accelerated industrial transformation. Key sectors—including advanced manufacturing, modern agriculture, tourism, cross-border e-commerce, and port logistics—are generating increasing demand for technically competent and highly skilled personnel (Zhou, 2025). Guangxi's multi-ethnic social context and cultural diversity also require vocational education to contribute to ethnic regional development, rural revitalization, and social inclusion (Wei, 2021). These characteristics call for SEC management approaches that are responsive to local development priorities while also capable of supporting international cooperation.

Despite the continued expansion of Guangxi's vocational education system, substantial challenges remain in the implementation and management of SEC. The region has developed a relatively comprehensive system encompassing secondary and higher vocational institutions, accompanied by growth in institutional capacity, student enrollment, and program provision. However, the quality and depth of the SEC have not advanced at the same pace (Zhou, 2025). Existing partnerships are often characterized by formal agreements without substantive integration, limited enterprise participation, fragmented governance arrangements, weak alignment between curricula and workforce needs, and insufficient long-term institutional support (Wei, 2021). These structural and managerial constraints reduce the capacity of vocational education to respond effectively to regional industrial upgrading and socioeconomic development.

Given the strategic importance of vocational education in China's development agenda and Guangxi's distinctive regional context, a critical review of the literature on SEC management is necessary. Such a review can consolidate existing theoretical perspectives, identify unresolved issues, clarify research gaps, and establish a coherent knowledge base for improving SEC management in vocational education. It can also contribute to the development of context-sensitive management theory and provide evidence-informed implications for policy design, institutional innovation, and the sustainable development of vocational education in Guangxi.

CORE CONCEPTS AND THEORETICAL FOUNDATIONS

To ensure conceptual clarity, the principal concepts used in this review are defined as follows. Vocational education refers to secondary- and higher-level education and training designed to

prepare technical, skilled, and application-oriented professionals who meet the competency requirements of contemporary industries. It integrates theoretical knowledge with practical skills and seeks to enhance employability, occupational competence, and lifelong career development (Shi & Wu, 2026).

School–Enterprise Cooperation (SEC) refers to a structured partnership between vocational education institutions and enterprises for the joint provision of talent development and related educational activities. Such cooperation may include curriculum development, practical training, internships, teacher professional development, order-based training, technology transfer, applied research, and resource sharing. Its central purpose is to improve the alignment between educational provision and industrial demand (Wang & Liu, 2024).

School–Enterprise Cooperation Management refers to the systematic planning, coordination, implementation, monitoring, and evaluation of collaborative activities between educational institutions and enterprises. It encompasses policy formulation, organizational coordination, institutional design, resource allocation, quality assurance, performance evaluation, and continuous improvement. The ultimate objective is to ensure that SEC is effective, mutually beneficial, and sustainable over the long term (Li & Zhang, 2025).

Industry–Education Integration represents a more advanced and systemic form of SEC. It involves the coordinated integration of education, talent, industrial, innovation, and value chains. The concept emphasizes collaborative governance, resource integration, and coordinated development among governments, educational institutions, enterprises, and other stakeholders, thereby creating an ecosystem that supports talent development, technological innovation, and regional economic growth (Ansell & Gash, 2008).

2.1 Stakeholder Theory

Stakeholder Theory, originally advanced by Freeman (1984), is one of the most influential perspectives in contemporary organizational and management research. It challenges a narrowly shareholder-centered view by arguing that organizational sustainability and long-term effectiveness depend on the ability to recognize and balance the interests, expectations, and contributions of multiple stakeholders. Rather than emphasizing economic performance alone, the theory highlights mutual value creation through participation, collaboration, and coordinated governance.

In vocational education, the SEC is inherently a multi-stakeholder governance process involving government agencies, vocational institutions, enterprises, industry associations, students, and local communities (Chen et al., 2022). These actors possess different responsibilities, resources, and strategic interests. Government agencies formulate policy, provide financial support, exercise regulatory oversight, and coordinate institutions. Vocational institutions assume primary responsibility for talent development, curriculum design, and educational resource allocation. Enterprises contribute industrial expertise, internship opportunities, technological resources, and employment pathways. Students are not only beneficiaries but also active participants in work-integrated learning and skills development. Industry associations and local communities can further facilitate communication, resource coordination, and alignment with regional economic and social development (Wang & Liu, 2024).

Recent research has increasingly applied Stakeholder Theory to analyze the governance mechanisms, interest coordination, and inter-organizational relationships that underpin SEC. Many persistent problems—including superficial collaboration, limited enterprise engagement, fragmented governance, and unstable partnerships—may be traced to misaligned interests, unequal resource distribution, and inconsistent institutional incentives (Li & Zhang, 2025). Effective SEC management therefore requires more than the formal participation of multiple actors; it also requires mechanisms that balance competing interests, establish mutual trust, and sustain long-term cooperation.

Stakeholder Theory is particularly relevant to Guangxi. Compared with more economically developed regions of China, Guangxi has a relatively weaker industrial base and a high proportion of small- and medium-sized enterprises (SMEs). The participation of these enterprises in vocational education may be constrained by limited resources, uncertain returns on investment, and insufficient policy incentives. Meanwhile, vocational institutions are often evaluated through indicators such as enrollment, graduate employment, and institutional performance, which do not always correspond to enterprise priorities. This divergence in organizational objectives and expectations can lead to inadequate enterprise participation and weak partnership continuity (Wei, 2021).

From a stakeholder perspective, these difficulties reflect deficiencies in interest alignment and governance design rather than operational shortcomings alone. Improving SEC management in Guangxi therefore requires a collaborative framework that supports equitable benefit sharing, clarifies stakeholder roles, institutionalizes communication and coordination, and strengthens trust among participating actors. Stakeholder Theory thus provides an important basis for analyzing and improving the effectiveness, legitimacy, and sustainability of SEC.

2.2 Institutional Theory

Institutional Theory provides a fundamental framework for explaining how organizational behavior is shaped by the institutional environment. Scott (2014) argues that organizational structures, decision-making processes, and behavioral patterns are influenced by formal institutions—such as laws, regulations, policies, and administrative systems—and by informal institutions, including social norms, cultural values, shared beliefs, and organizational cognition. Together, these elements form the regulative, normative, and cultural-cognitive foundations that shape organizational legitimacy and behavior.

In vocational education, Institutional Theory explains how formal and informal arrangements influence the development and effectiveness of SEC. Formal institutions establish the legal and policy framework for cooperation through legislation, regulation, funding, and administrative supervision. Informal institutions shape stakeholder perceptions, values, expectations, and willingness to participate in sustained collaboration (Shi & Wu, 2026). Consequently, SEC effectiveness depends not only on the existence of supportive policies but also on the extent to which participating organizations share compatible norms, expectations, and understandings of cooperation.

Over the past decade, China has developed an increasingly comprehensive top-down institutional framework for SEC and industry–education integration. National policies have strengthened the legal foundations, governance arrangements, and policy support for collaborative talent development. Nevertheless, notable gaps remain between national policy design and local implementation, particularly in less-developed regions such as Guangxi (Wang, 2023). These gaps indicate that institutional effectiveness depends not merely on policy formulation but also on implementation capacity, local adaptation, and coordination among responsible actors.

Several institutional constraints continue to limit the SEC in Guangxi. Local supporting policies and implementation mechanisms remain insufficiently developed, while financial incentives and long-term safeguards for SME participation are limited. In addition, enduring academic-oriented traditions and social preferences for general higher education may reduce the perceived status and value of vocational education. Such institutional and cultural biases can weaken the willingness of enterprises and other stakeholders to establish durable collaborative relationships (Zhou, 2025). From the perspective of Institutional Theory, these challenges cannot be explained solely by weaknesses in organizational management. They arise from the interaction of policy environments, governance systems, implementation capacity, and sociocultural norms. The optimization of SEC management in Guangxi therefore requires coherent institutional design, stronger incentive and accountability mechanisms, effective local implementation, and a supportive culture that enhances the legitimacy and social recognition of vocational education.

Institutional Theory provides a robust foundation for examining policy implementation, institutional coordination, governance effectiveness, and partnership sustainability.

2.3 Collaborative Governance Theory

Collaborative Governance Theory, as conceptualized by Ansell and Gash (2008), offers a comprehensive framework for addressing complex public issues through collective action among multiple stakeholders. In contrast to governance models based primarily on hierarchical control or market mechanisms, collaborative governance emphasizes shared decision-making, mutual trust, consensus building, resource integration, and joint responsibility among public institutions, private organizations, and civil society. Sustainable outcomes are more likely when diverse stakeholders participate meaningfully in policy formulation, implementation, and evaluation through institutionalized collaborative processes.

SEC represents a typical form of collaborative governance because it requires coordinated participation by government agencies, vocational institutions, enterprises, industry associations, and other social actors. Its governance therefore extends beyond bilateral school-enterprise arrangements and depends on an integrated system in which stakeholders contribute complementary resources, share responsibilities, and pursue common development objectives (Wang, 2023). From this perspective, SEC effectiveness is determined not only by administrative coordination but also by the quality of inter-organizational relationships, stakeholder engagement, institutional trust, and deliberative processes.

Within a collaborative governance framework, optimizing SEC management requires a system characterized by government guidance, institutional leadership, substantive enterprise participation, industry-association coordination, and broader stakeholder collaboration (Li & Zhang, 2025). Such a system can facilitate policy coordination, resource sharing, information exchange, and joint decision-making, thereby improving the efficiency, effectiveness, and sustainability of cooperation. It can also align educational objectives more closely with industrial development and labor-market change.

Collaborative Governance Theory is especially relevant to Guangxi, where vocational education is expected to support both regional industrial transformation and China-ASEAN cooperation. As a border region with distinctive economic and cultural conditions, Guangxi requires governance arrangements capable of coordinating actors across administrative sectors, industries, and national boundaries. Institutionalized collaborative mechanisms are therefore essential for reducing fragmentation, managing stakeholder conflict, and strengthening long-term partnerships among governments, vocational institutions, enterprises, and industry associations (Zeng, 2025). Accordingly, improving SEC management in Guangxi requires more than administrative coordination. It necessitates formal mechanisms for stakeholder participation, inter-organizational communication, resource integration, joint decision-making, and shared evaluation. These mechanisms can strengthen trust, improve governance capacity, facilitate the integration of educational and industrial resources, and support both the sustainable development of vocational education and deeper vocational education cooperation between Guangxi and ASEAN countries.

GUANGXI LOCAL RESEARCH STATUS

Since 2020, research specifically addressing SEC management in Guangxi's vocational education system has increased. The literature is concentrated in three broad areas: local policy implementation, institutional case studies, and practical models, and region-specific constraints and countermeasures.

First, studies of local policy implementation have examined Guangxi's vocational education development plans and supporting policies for industry–education integration. They identify several recurring limitations, including broad or insufficiently operational policy provisions, a lack of detailed implementation guidelines, inadequate earmarked funding, and limited incentives

for SMEs (Wei, 2021). The weak alignment between national policy requirements and local implementation conditions has reduced the practical effectiveness of SEC.

Second, institutional case studies have investigated practical models developed by higher vocational colleges in Guangxi, including order-based training, campus–enterprise collaboration, and the joint education of students from ASEAN countries. Although these initiatives demonstrate incremental progress, many institutions still face a narrow range of enterprise partners, limited depth of cooperation, and unstable long-term arrangements (Zhou, 2025). The evidence therefore suggests that local innovation has not yet been translated into consistently institutionalized and scalable management models.

Third, research on regional constraints identifies several challenges that are particularly salient in Guangxi: a relatively weak industrial base; the limited scale and capacity of many local enterprises; low willingness among SMEs to invest in vocational education; linguistic and cultural barriers to cross-border cooperation; insufficient numbers of dual-qualified teachers; and the absence of localized performance-evaluation standards (Zeng, 2025). Although the literature proposes various policy recommendations, many remain at the level of general strategic guidance and lack detailed institutional design or empirical validation.

INTERNATIONAL COMPARATIVE RESEARCH STATUS

International and comparative studies primarily draw lessons from mature vocational education systems in developed countries and from emerging cooperation practices in ASEAN countries. Research on Germany’s dual system, Australia’s Technical and Further Education (TAFE) system, and Singapore’s technical education system identifies several common enabling conditions: a robust legal and regulatory framework, substantial enterprise participation throughout the talent-development process, standardized occupational certification, and stable public investment (Li & Zhang, 2025). These experiences provide useful reference points for strengthening the institutional foundations of SEC management in Guangxi, although their transferability must be assessed in relation to local economic, institutional, and cultural conditions.

Research on vocational education cooperation with ASEAN countries has gained increasing attention since 2023. Studies of systems and SEC models in Thailand, Malaysia, and Vietnam indicate that Guangxi has geographical and cultural advantages in developing cross-border cooperation. However, major barriers remain, including inconsistent occupational standards, non-equivalent skills-certification systems, differences in institutional arrangements, and linguistic and cultural diversity (Zeng, 2025). Existing research is still largely descriptive and qualitative, with limited analysis of the mechanisms, governance structures, and measurable outcomes of cross-border cooperation.

4.1 Theoretical Challenges and Debates

First, the literature lacks a sufficiently localized theoretical framework. Many studies apply Western-derived Stakeholder Theory and Institutional Theory without systematically incorporating Guangxi’s border location, multi-ethnic context, industrial structure, and strategic orientation toward ASEAN (Zeng, 2025). As a result, existing frameworks have limited explanatory power for the distinctive mechanisms and management challenges of SEC in Guangxi.

Second, theoretical perspectives remain fragmented. Much of the literature is confined to macro-level interpretation and does not adequately integrate insights from education, management, economics, public policy, and regional development. This limits the capacity of existing studies to explain the relationships among institutional arrangements, stakeholder interest alignment, governance processes, resource exchange, and cooperation performance (Wang, 2023). A more integrated analytical framework is therefore needed.

4.2 Practical and Empirical Research Gaps

First, regional comparative research remains limited. Few studies systematically compare Guangxi with eastern coastal provinces or other border regions. Without such comparisons, it is difficult to identify the relative strengths and weaknesses of Guangxi's SEC management arrangements or to determine which external practices are contextually transferable (Chen et al., 2022).

Second, research on digital transformation and cross-border cooperation is insufficient. As digital vocational education and China–ASEAN educational exchange continue to expand, digital SEC platforms, virtual training environments, data-enabled governance, and cross-border joint programs have become increasingly important. Nevertheless, these emerging areas remain underexplored in the existing literature (Li & Zhang, 2025).

Third, the performance-evaluation framework remains underdeveloped. Guangxi currently lacks a widely accepted SEC management performance index system that reflects its regional characteristics. Existing evaluation approaches frequently reproduce national-level indicators without adequately accounting for variations in industrial capacity, institutional resources, partnership maturity, cross-border engagement, and local development conditions (Zhou, 2025). Future research should therefore develop and validate a context-sensitive, multi-dimensional evaluation framework.

CONCLUSION

The literature published between 2020 and 2026 has established a substantial conceptual and practical foundation for the study of SEC management in vocational education. At the national level, researchers have applied Stakeholder Theory, Institutional Theory, and Collaborative Governance Theory; examined policy development; summarized prevalent cooperation models; identified common constraints; and begun to develop performance-evaluation approaches (Li & Zhang, 2025; Shi & Wu, 2026). Within Guangxi, studies have described the current state of SEC, analyzed weaknesses in local policy implementation, documented institutional practices, and identified region-specific challenges, including a comparatively weak industrial base, limited enterprise incentives, insufficient governance capacity, and barriers to cross-border cooperation (Zhou, 2025; Wei, 2021). International and comparative research has further highlighted lessons from mature vocational education systems and has outlined both the potential and the constraints of China–ASEAN cooperation (Zeng, 2025). Nevertheless, the field remains characterized by fragmented theoretical application, limited empirical evidence, insufficient enterprise-centered analysis, weak regional comparison, and a lack of validated management and performance-evaluation frameworks. Future research should therefore construct a localized and integrative theoretical model, adopt mixed-method and comparative designs, incorporate the perspectives of enterprises and other stakeholders, develop context-sensitive evaluation instruments, and examine digital and cross-border SEC governance. These directions are essential for moving the field from descriptive diagnosis toward empirically grounded explanation and actionable institutional design.

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