

Collaboration and Integration of Traditional Culture Education in the Greater Bay Area: A Perspective of Triadic Reciprocal Determinism and Cultural Cognition



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Abstract: This study examines the collaborative development of traditional culture education in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA). Drawing on Triadic Reciprocal Determinism (TRD) and the Cultural Knowings Framework (CKF), it employs a descriptive comparative analysis to systematically review policy documents, curriculum standards, teaching guidelines, and educational reports released between 2016 and 2024 by education authorities in Guangdong, Hong Kong, and Macao. The findings reveal marked regional distinctions in structural orientation and pedagogical focus. The nine mainland GBA cities emphasize systematic curriculum alignment and school-based cultural experiences, while Hong Kong and Macao highlight multicultural integration, project-based learning, and technology-enabled engagement. Despite these distinctive strengths, all three regions face persistent structural “embedding” challenges and a lack of robust cross-regional coordination mechanisms. To address these challenges, the study proposes a coordination framework centered on person–behavior–environment interactions, articulating a four-stage progression—cognition, participation, reflection, and identification—to integrate regional resources, reinforce shared cultural foundations, and promote sustainable collaboration while respecting local diversity. The study advances theoretical integration, model construction, and practical implications by linking the TRD and the CKF for the first time to develop an operational model for regional cultural collaboration. This framework offers both analytical and practical value, providing new pathways for curriculum design, policy coordination, and cultural governance across the GBA.

Keywords: Greater Bay Area (GBA), traditional culture education, educational collaboration, Triadic Reciprocal Determinism, Cultural Knowings framework, cultural identity

1. Introduction

The Guangdong–Hong Kong–Macao Greater Bay Area (GBA) has been envisioned as an “international first-class bay area and a world-class city cluster” (Central Committee of the Communist Party of China, 2019). Achieving this goal fundamentally depends on high-quality educational collaboration and talent cultivation across the region. In this context, the collaborative integration of traditional culture education is crucial for cultivating

a new generation with both global perspectives and deep-rooted cultural confidence. This significance arises not only because Chinese traditional culture—an embodiment of shared values, customs, and emotional patterns (Li & Wei, 2022)—serves as a vital cultural bond uniting Guangdong, Hong Kong, and Macao, but also because it provides the deep cultural and spiritual foundation essential for achieving integrated regional education.

Existing studies have examined the necessity and feasible pathways of collaborative development

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in the GBA's basic education. Li and Guan (2022) constructed new frameworks and pathways from the perspective of adolescents' Chinese cultural identity formation. Liu (2021) proposed fostering Chinese cultural identity among the GBA youth through Lingnan sports culture, while Wang et al. (2020) emphasized multilingual harmony and coexistence in language education. Wang and Zhao (2021) examined "Chinese cultural identity" elements in national primary Chinese textbooks and proposed corresponding pedagogical strategies. Collectively, these studies demonstrate that traditional culture education plays an irreplaceable role in promoting coordinated educational development across the GBA. Meanwhile, international scholarship on traditional culture and heritage education has expanded from curricular content to the institutional structures of educational policy and cultural identity. For example, Immonen and Sivula (2024) compared curriculum guidelines in Estonia, Finland, and Sweden, revealing variations in value orientations and identity formation across policy contexts. Papadakis et al. (2023) demonstrated that integrating cloud technologies with augmented reality can enhance cross-regional learning collaboration, offering new insights for educational cooperation.

However, the heterogeneity of administrative systems, economic structures, social traditions, and cultural foundations within the GBA continues to pose major challenges to educational reform and innovation (Li & Wei, 2022). Problems such as unequal distribution of educational resources (Li & Zheng, 2023), the absence of basic education coordination mechanisms (Zhao et al., 2022), and insufficient cross-regional cultural identity (Tan, 2023) have collectively constrained the effective integration and collaboration of traditional culture education.

In light of these challenges, advancing educational collaboration amid institutional and cultural differences across the three regions has become an urgent and pressing research concern. The Triadic Reciprocal Determinism (TRD) and the Cultural Knowings Framework (CKF) together

provide the theoretical foundation for addressing these issues. The CKF explores how culture shapes individuals' cognitive structures and behavioral patterns, emphasizing the importance of cultural identity for achieving educational collaboration (Moran & Lu, 2001). The TRD, in turn, highlights the dynamic interaction among person, behavior, and environment, revealing education as a systemic process of multi-actor participation and reciprocal influence (Bandura, 1986). Integrating these two perspectives provides a new theoretical lens for analyzing and promoting the collaborative integration of traditional culture education in the GBA.

Based on this theoretical and practical foundation, this study seeks to address the following core questions:

RQ1. What differences exist in the cultural cognition structures and educational pathways of traditional culture education across the three regions of Guangdong, Hong Kong, and Macao?

RQ2. How do these differences influence regional educational collaboration and the construction of cultural identity?

RQ3. How can the collaborative integration and optimized development of traditional culture education be achieved through the combined application of TRD and CKF?

Accordingly, this study develops a regional comparative model of cultural education based on TRD and CKF. Focusing on the integrative needs of adolescents in K–12 education, it examines differentiated developmental trajectories, identifies barriers to collaboration, and explores mechanisms that foster educational synergy. The aim is to offer theoretical and practical insights into promoting the coordinated development of traditional culture education across the GBA.

2. Research Methodology

2.1. Research design

This study employs a qualitative, theory-driven comparative design, combining theoretical analysis with a systematic review of policy documents,

curriculum frameworks, teaching directives, and related educational materials from Guangdong, Hong Kong, and Macao. The aim is to identify cross-regional differences and potential coordination mechanisms in traditional culture education. Analytically, the study draws on TRD and CKF to construct two interwoven dimensions: person–behavior–environment and Knowing About – Knowing How – Knowing Why – Knowing Oneself. The former illuminates the dynamic interactions between policy and practice, while the latter highlights both divergence and integration in how individuals and groups construct cultural cognition. Together, these dimensions establish the logical foundation of the research.

2.2 Data sources

The data consist primarily of policy documents, curriculum guidelines, teaching directives, and planning reports issued between 2016 and 2024 by governments and education authorities in Guangdong, Hong Kong, and Macao, supplemented by academic studies and educational practice reports. All materials were obtained from official portals or published sources, ensuring authority and traceability. Document selection followed three criteria—relevance, timeliness, and representativeness. Priority was given to materials directly related to traditional culture education in K–12 settings, alongside higher-level policies and regional planning documents that define the overarching policy architecture. Materials unrelated to the topic or substantially duplicative were excluded.

The final data span multiple policy levels and document types, including national policy outlines, regional development plans, local education guidelines, curriculum standards, and innovative program dossiers, providing a structured basis for cross-regional comparison. To enhance systematic comparison and transparency, key documents were organized and analyzed by issuing body, governance level, main content, and implementation orientation (see Table 1). Table 1 summarizes representative policy and curriculum documents from the national

level, Guangdong’s nine GBA cities, Hong Kong, and Macao, illustrating layered differences and coordination mechanisms in policy positioning, curriculum structure, and implementation focus.

Table 1 Comparative Overview of Traditional Culture Education Policies and Curriculum Documents across Guangdong, Hong Kong, and Macao

Region	Document type	Issuing organization	Document name	Year	Main content orientation	Implementation orientation / Feature description
National level	Policy guideline	The General Office of the CPC Central Committee and the General Office of the State Council	Opinions on Implementing the Project for the Inheritance and Development of Excellent Chinese Traditional Culture	2017	Fully integrate traditional culture into the national education system; build a systematic curriculum structure	Top-level institutional design, emphasizing both inheritance and innovation
	Regional development strategy	The Central Committee of the Communist Party of China and the State Council	Outline Development Plan for the Guangdong–Hong Kong–Macao Greater Bay Area	2019	Proposes building a world-class bay area, emphasizing cultural identity and educational collaboration	Framework for regional collaboration that promotes educational integration
	Ministry of Education document	Ministry of Education of the People's Republic of China	Opinions on Strengthening Aesthetic Education in the New Era	2020	Promotes the integration of traditional culture and art education	Emphasis on aesthetic education, cultural experience, and core competencies
Guangdong	Regional policy document	Guangdong Provincial Department of Education / local education bureaus	Guiding Outline for Chinese Excellent Traditional Culture Education in Primary and Secondary Schools of Guangdong Province	2018	Clarifies course objectives, activity forms and assessment methods	Combination of administrative leadership and school-based innovation
	Educational practice project	Guangdong Provincial Department of Education / Guangdong Educational Research Institute	“Shi Jiao Zhongguo” Poetry Conference and Lingnan Culture Themed Education Project	2020–2023	Promotes traditional literature, arts and folk experiences	Characterized by project-driven initiatives and community collaboration

Region	Document type	Issuing organization	Document name	Year	Main content orientation	Implementation orientation / Feature description
Hong Kong	Curriculum guideline document	Education Bureau, Hong Kong	Chinese Language Education Key Learning Area Curriculum Guide, P1–S6	2017	Emphasizes language literacy and understanding of Chinese culture	Focus on multicultural integration and learner autonomy
	Policy review report	Curriculum Development Council (CDC)	Holistic Review Report of the Curriculum Development Council	2023	Emphasizes “absorbing the essence of Chinese culture and international understanding”	Advocacy of interdisciplinary and project-based learning
	Curriculum reform report	Education Bureau, Hong Kong	Liberal Studies Curriculum Reform Report	2021	Incorporates cultural understanding into the critical learning framework	Reflects Hong Kong’s trend toward cross-cultural educational adaptation
	Innovative teaching project	The Education University of Hong Kong and The Hong Kong Jockey Club Charities Trust	Jockey Club “Culture Fun Learning” Project	2023	Promotes cultural learning through digitalization and gamification	Technology-enabled cultural education
	Curriculum guideline document	Education and Youth Development Bureau (DSEDJ), Macao	Primary Chinese Curriculum Guide / Junior Secondary Chinese Curriculum Guide	2016	Emphasizes the inheritance of Chinese culture and multicultural integration	Balanced focus on classroom teaching and cultural life
Macao	Educational policy plan	DSEDJ, Macao	Outline of Macao Education Development Plan 2021–2030	2021	Clarifies objectives of cultural education and international exchange	Establishes long-term mechanisms and strengthens cultural identity education
	Moral education guideline document	DSEDJ, Macao	Moral Education Guideline for Macao Schools	2018	Promotes integration of moral education and cultural education	Emphasis on patriotism toward Macao and civic participation education

2.3 Analytical methods

The study conducts a descriptive comparative analysis in line with the principles of qualitative content analysis, using the above documentary data as the primary evidence base. Grounded in TRD and CKF, it develops a multidimensional analytical lens along two threads: person–behavior–environment and Knowing About – Knowing How – Knowing Why – Knowing Oneself.

Operationally, the analysis proceeds in three stages. In the first stage, themes and key concepts are identified and refined in accordance with the theoretical framework, focusing on the extraction of core ideas, value orientations, and educational goals from the policy and curriculum texts. The second stage involves a horizontal and structural comparison, examining policy content, curriculum structures, and pathways for constructing cultural identity across the three regions, while tracing both similarities and divergences in institutional arrangements, educational philosophies, and implementation strategies. In the third stage, a theoretical synthesis and coordination interpretation is undertaken, integrating the comparative findings with the logics of TRD and CKF to uncover the tensions and potential mechanisms underlying collaborative development. Throughout the process, the analysis maintains systematic coherence and a traceable chain of evidence, combining tabular comparison with thematic synthesis to ensure explanatory consistency and theoretical depth.

3. Regional Differentiation in Traditional Culture Education

3.1 Differentiated development of traditional culture education under CKF

Guided by the research questions outlined above, this section examines the differentiated development of traditional culture education in the GBA through the lens of the CKF. Considering the region's complex multicultural background, the framework serves as an analytical tool for comparing how cultural learning is conceptualized and enacted across Guangdong, Hong Kong, and Macao.

According to Moran and Lu (2001, pp. 34–47), cultural learning is an experiential process in which learners continuously engage in cycles of experience, reflection, and interpretation, thereby reconstructing their understanding of culture. Within the CKF, cultural learning operates on two interrelated dimensions. The cultural elements dimension comprises five components—Persons, Perspectives, Products, Practices, and Communities—representing the multifaceted forms through which culture is manifested. The cultural knowings dimension, in turn, consists of four progressive stages of learning: Knowing About, Knowing How, Knowing Why, and Knowing Oneself. Together, these dimensions highlight the dynamic interplay among cognition, action, reflection, and self-awareness that drives the deep generation of cultural understanding.

To enhance comparability between classroom practice and policy orientation, this study operationalizes the four “Knowings” by aligning them with four corresponding types of classroom learning activities: Description, Participation, Interpretation, and Response. This alignment forms an integrative model that links cultural cognition with pedagogical practice (see Figure 1). It provides a framework for observing how the three regions differ in their approaches to knowledge presentation, skill formation, meaning interpretation, and identity reflection.



Figure 1 Integrated Model of Cultural Cognition and Activities

This model also resonates with Kolb's (2014) Experiential Learning Cycle, which progresses through Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. Both frameworks emphasize that learning is a continuous and context-dependent process, in which understanding is constantly generated and transferred across situations. Accordingly, CKF offers a practical and theoretically grounded framework for analyzing regional variations in curriculum goals, instructional design, and cultural identity construction.

Drawing from this theoretical foundation, the subsequent comparative analysis is organized around the tripartite correspondence of elements, knowings, and activities. It first explores how policy and curriculum texts organize cultural elements, revealing whether the focus lies primarily on Products and Practices or instead centers on Perspectives and Communities. This examination highlights how each region conceptualizes the core components of culture and embeds them within its educational frameworks. Furthermore, the analysis investigates how instructional design supports the progressive development of the four Knowings, illustrating how teachers and curriculum planners translate cultural cognition into pedagogical practice. Attention is also given to whether classroom activities form a coherent and context-sensitive sequence of

Description–Participation–Interpretation–Response, demonstrating how experiential learning processes are adapted to regional educational realities. Through this multidimensional analysis, the study elucidates the differentiated logic and potential synergies that shape traditional culture education across the GBA—particularly in terms of content orientation, pedagogical approach, and identity formation.

3.1.1 The pearl river delta: curriculum-centered development emphasizing cultural experience and reflection

The traditional culture education system in mainland China is characterized by its comprehensive and systematic structure, closely

integrating curriculum content, cultural experience activities, and community-based environments to cultivate both students' cultural knowledge and practical competence. This development has been driven by two key factors: strong policy support and abundant cultural heritage resources, both of which provide a solid foundation for cultural education.

The Guideline for the Inheritance and Development of Excellent Traditional Chinese Culture (2017) explicitly states that “traditional Chinese culture should be integrated throughout national education and embedded in moral, cultural, artistic, physical, and social practice education.” This policy framework ensures the central role of traditional culture education in schools, while China's rich cultural heritage—ranging from classical poetry and folk arts to traditional festivals—offers an extensive reservoir of learning materials. In the economically advanced Pearl River Delta, ongoing innovation in educational philosophy and technology has further enhanced the relevance and effectiveness of traditional culture education.

Three distinctive features define the region's approach. First, there is a strong focus on the development of both knowledge and skills. The curriculum systematically incorporates literature, history, philosophy, and moral education, aiming to deepen students' understanding and identification with traditional culture. Teaching methods often rely on structured approaches such as lectures, recitation, and textual interpretation. In recent years, schools have also introduced cultural literacy programs that integrate experiential activities including paper cutting, embroidery, opera performance, calligraphy, and classical chanting. This dual emphasis on classroom and extracurricular learning not only reflects the poetic spirit embedded in Chinese literary tradition (Zhang, 2022) but also cultivates critical thinking and creative expression, enabling students to engage with and transmit traditional culture in contemporary contexts.

Second, cultural practice occupies a central position within this educational system. Such activities extend classroom learning and cultivate a

dynamic cultural ecosystem that connects students, families, schools, and communities. Learners are not passive recipients but active participants in the transmission of culture. Events such as the Guangdong “Poetry Education China” competition, traditional culture festivals, and ethnic celebrations (Wu, 2023) encourage students to move beyond the classroom, engage in authentic cultural practices, and internalize cultural values through direct experience. This multi-level and multidimensional system of cultural education fosters students’ cultural awareness and reshapes their value orientations through active participation and experiential engagement.

Finally, traditional culture education in the region fully leverages cultural products and community environments as immersive learning resources. Beyond family settings, community activities and digital media platforms offer multidimensional access to traditional culture. Local communities frequently organize calligraphy exhibitions, traditional music concerts, and theatrical performances, allowing young people to encounter cultural practices firsthand. Public media also plays an essential educational role: programs such as National Treasure and Chinese Poetry Conference explore China’s cultural heritage and history in depth (Wu, 2023). Moreover, online platforms have extended the reach of cultural learning, thereby transcending spatial and temporal boundaries and enabling youth to engage with traditional culture anytime and anywhere. Through these multilayered interactions, cultural agents, perspectives, practices, products, and communities become deeply integrated, forming a vibrant and sustainable ecosystem of cultural learning and inheritance.

3.1.2 Hong Kong and Macao: technology-driven approaches emphasizing multicultural interaction

Compared with the Pearl River Delta, Hong Kong and Macao have developed distinctive systems of traditional culture education characterized by multicultural integration, innovative activity design, and technological application. These differentiated strategies provide new perspectives and pathways for

transmitting and revitalizing traditional culture. Supported by favorable educational policies and multi-sectoral collaboration, both regions have created strong momentum for cultural education. Policy frameworks in both regions exemplify their commitment to integrating traditional and multicultural education. The Hong Kong Curriculum Development Council (2023) underscores that students should understand and appreciate Chinese culture in depth, reflect on its values, internalize its essence, and cultivate identification with it while maintaining an inclusive and international perspective. The Chinese Language Education Key Learning Area Curriculum Guide (P1–S6) (2017) introduces the concepts of “language literacy” and “classical reading,” thereby elevating the role of classical Chinese learning in the curriculum. Similarly, the Macao Chinese Language Curriculum Guides for Primary and Secondary Schools (2016) emphasize fostering students’ love for the Chinese language and culture while cultivating respect for cultural diversity and developing a sense of local and national identity. Together, these policy initiatives highlight the region’s dual commitment to preserving traditional cultural heritage and embracing global inclusiveness.

Three defining characteristics distinguish the approaches adopted in Hong Kong and Macao. First, the curriculum structure combines Chinese cultural heritage with global perspectives, forming a bilingual and intercultural learning environment. Curriculum design and teaching materials reflect the regions’ historical cosmopolitanism and colonial legacies, integrating both Chinese traditions and diverse world cultures. Pedagogical practices emphasize flexibility and interaction through project-based learning, group collaboration, and critical inquiry. This multicultural approach broadens students’ global outlook while sustaining appreciation for local culture. Although it may reduce the depth of traditional cultural instruction, it offers a broader cognitive platform for comparative cultural understanding.

Second, cultural education in these regions prioritizes innovative activities and diversified

assessment methods. Drawing on international IB education principles, schools implement thematic projects, intercultural exchanges, and creative performance activities. Assessment methods—such as oral presentations, exhibitions, and project showcases—enable students to demonstrate cultural understanding through multiple forms of expression. These practices make cultural education more dynamic, experiential, and globally oriented. In parallel, collaboration among schools, educational institutions, NGOs, and the private sector has established a cooperative cultural network that promotes resource sharing and pedagogical innovation.

Third, technology plays an increasingly central role in cultural learning. Government agencies and higher education institutions have invested in digital platforms and interactive applications to promote cultural education, leveraging AR and VR technologies to recreate historical and cultural scenes. Such integration enhances the interactivity and immersion of learning experiences, making traditional culture more accessible to students. A notable example is the Jockey Club “Culture Fun Learning” Project launched by The Education University of Hong Kong (2023), which employs locally designed animations, gamified learning modules, and scaffolded materials to teach traditional culture. The project effectively reduces instructional barriers while combining entertainment and education, thereby revitalizing traditional culture through contemporary digital engagement.

3.2 Explaining the differentiated development of traditional culture education

The differentiated development of traditional culture education in the GBA reflects the reciprocal relationship between cultural evolution and human development (Yang, 2014, p. 664). The contrasting trajectories of the Pearl River Delta and the Hong Kong–Macao reveal profound differences in educational philosophy, sociocultural context, technological application, and degrees of internationalization, while simultaneously mirroring broader trends in youth development. On the

mainland, the education system is deeply rooted in Chinese cultural traditions and places sustained emphasis on fostering national identity. Ongoing curriculum reforms have made the system more systematic and mature, while national policy guidance has stimulated the emergence of diverse cultural products—such as television programs celebrating classical heritage, guofeng music, and creative cultural industries. These initiatives, in turn, fostered a more institutionalized pattern of cultural practice and community participation.

By contrast, Hong Kong and Macao stand at a historical crossroads. Their education systems must balance the preservation of cultural inheritance with the cultivation of students’ intercultural competence and creativity in a globalized environment. Accordingly, Policy designs in these regions are therefore more flexible, emphasizing the development of internationally competent individuals who are grounded in Chinese culture yet capable of autonomous and innovative thinking. As traditional Chinese culture permeates everyday life in both societies, local governments have increasingly leveraged technological innovation to provide digital and experiential learning tools that connect traditional culture with young people’s daily experiences, thereby strengthening their interest in—and participation in—cultural learning.

Furthermore, the differentiated trajectories of cultural education arise from the interaction between socioeconomic demands and cultural self-awareness. On the mainland, strategy seeks to anchor future development in deep cultural resources by combining heritage transmission with innovation; however, classroom practice can tilt toward convention, leaving limited opportunities for sustained, comparative engagement with multiple cultures. Consequently, some students may feel less prepared to respond to cultural plurality with confidence.

In contrast, Hong Kong and Macao treat intercultural communication as a strategic advantage and maintain a more open and innovative orientation. Their distinctive historical contexts have shaped multilingual learning environments—“biliterate and

trilingual” in Hong Kong and “trilingual and quadriliterate” in Macao—where diverse student groups study together, including cross-border learners, recent arrivals, non-Chinese-speaking students, and local peers who often progress at different paces. These conditions tend to produce traditional culture education that is broad in coverage yet relatively shallow in depth, emphasizing popularization and access over sustained engagement with classical texts or historical contexts. As a result, adolescents may struggle to develop a deep attachment to any single cultural framework and, in some cases, may experience ambiguity or even fragmentation in their cultural identity formation.

4. Practical Barriers and Active Explorations in the Collaborative Development of Traditional Cultural Education

Based on the differentiated developmental trajectories identified across the three regions, this study applies the TRD to explore how cultural–cognitive differences create barriers to educational collaboration. The theory emphasizes the reciprocal and dynamic interactions among Person, Behavior, and Environment (see Figure 2), which together constitute an integrated system of mutual influence and continuous adjustment.

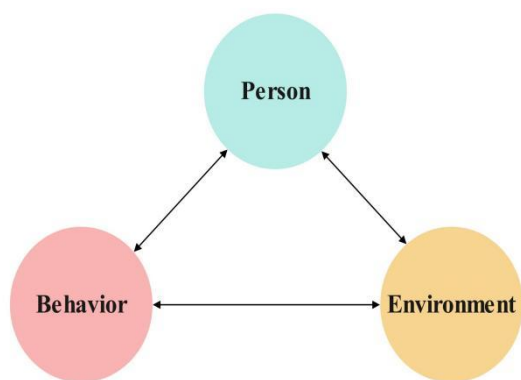


Figure 2 Triadic Reciprocal Determinism Model

In educational contexts, Person refers to teachers’ and students’ cultural cognition, attitudes, and pedagogical beliefs; Behavior pertains to the design of cultural curricula, teaching activities, and

assessment practices; and Environment encompasses regional education systems, policy orientations, and cultural climates. These three dimensions interact in a cyclical and adaptive system, forming an ongoing process of feedback and regulation.

Institutional and cultural heterogeneity functions not only as an external environmental constraint but also as a structural force shaping the cognitive frameworks of teachers and students, thereby influencing their approaches to teaching and learning. This perspective illuminates the institution–cognition–behavior nexus, revealing the underlying tensions and structural roots of integration difficulties across the GBA. At the same time, this theoretical lens provides a firm analytical basis for examining both the practical barriers and the active explorations that characterize efforts to advance collaborative development in traditional culture education.

4.1 Cultural cognitive differences as practical barriers to collaborative development

At the theoretical level, the TRD provides a coherent analytical framework for understanding the tensions between cultural–cognitive divergence and the pursuit of educational collaboration (see Figure 2). From the personal perspective, teachers’ and students’ cultural backgrounds shape their attitudes and behaviors toward traditional culture, resulting in varying levels of understanding of instructional goals and uneven engagement in classroom practices. From the behavioral perspective, cultural cognition influences educators’ instructional styles and curriculum choices as well as students’ participation in cultural activities—such as traditional festivals or courses on intangible cultural heritage. From the environmental perspective, disparities in education systems, linguistic environments, and cultural policies have produced asymmetric social support structures. Unequal resource distribution, inconsistent policy mechanisms, and fragmented governance further complicate efforts toward coordinated educational development.

Cultural cognition serves as the conceptual bridge linking individual experience, behavioral

choice, and value orientation, forming the cognitive foundation for collaborative development in traditional culture education across the GBA. Within this cognitive system, value orientations and linguistic structures are key factors that shape how individuals perceive and respond to traditional culture (Greenfield & Bruner, 1966). Decades of relatively independent regional development have produced systemic differences in cultural cognition—not only in terms of knowledge and preferences, but also in language, educational traditions, and lived experience. This heterogeneity has become a major obstacle to regional collaboration.

A prominent manifestation of this divergence lies in the differing value identifications among the GBA youth, revealing structural fissures in cultural cognition. Zhong et al. (2022) found that, while young people across the GBA express high agreement with mainstream values such as national identity, social harmony, and family well-being, substantial variation persists: youth in Guangdong score highest in national identity and ambition, whereas those in Hong Kong and Macao show stronger preferences for social harmony and life enjoyment. These divergent value orientations reflect distinct cultural learning pathways shaped by different social contexts, which hinder the formation of shared understandings of curricular goals, cultural meaning, and pedagogical purpose. As a result, curriculum alignment and instructional coherence are often weakened, creating internal frictions within regional collaboration.

Differences also emerge in the cultural schemata held by educators. Drawing on Bourdieu's (1997, pp. 192–201) theory of cultural capital, individuals' acquisition of culture is shaped by institutional structures and accumulated experience, ultimately forming stable yet differentiated habitus. Mainland educators tend to emphasize systematic study of Chinese culture, while educators in Hong Kong and Macao prioritize balance within multilingual and multicultural contexts. These cognitive differences extend from educational philosophy to curriculum

objectives, pedagogical strategies, and cultural orientations. As a result, shared expectations and unified cultural positioning are difficult to achieve, limiting operational feasibility and mutual consensus. Over time, such structural differences reinforce path dependencies in teachers' cognition and practice, widening the gap between cognition and behavior in cross-regional collaboration and forming deep-seated structural barriers to joint cultural education.

Cultural–cognitive differences further shape the affective foundation of education, particularly cultural identity and belonging. As cognitive anthropology suggests, cognition is never isolated but embedded in specific cultural systems. Culture operates both as a system of meaning and as a lived framework that guides knowledge acquisition, expectation formation, and the internalization of norms. In this sense, mainland students often regard traditional culture as something to learn, whereas students in Hong Kong and Macao may approach it as something to interrogate. Such contrasting orientations affect both learning engagement and the depth of identity transformation.

Language diversity further intensifies cognitive divergence. Language systems determine how cultural content is structured and interpreted. The coexistence of Cantonese, Mandarin, English, and Portuguese in the GBA generates distinct pathways of comprehension and emotional resonance. In traditional cultural education—where classical texts are tightly intertwined with historical and linguistic contexts—these differences produce disparities in comprehension and weaken shared affective experiences.

When learners engage with traditional culture without adequate contextual or experiential grounding, they often develop formal cognition rather than contextual identification. Knowledge transmission without immersive cultural experiences or community resonance can produce feelings of detachment or even resistance. The formation of cultural identity is not merely the accumulation of knowledge but a process of emotional and value-based integration; genuine identification arises

only when cognitive engagement, affective experience, and authentic cultural practice are aligned.

In sum, cultural–cognitive divergence across the GBA constitutes both explicit barriers and implicit tensions in the collaborative development of traditional culture education. From cultural schemata and value orientations to linguistic pathways and institutional contexts, multiple layers of heterogeneity erode the foundations for effective collaboration. Sustainable cooperation, therefore, depends not on erasing differences but on understanding, respecting, and negotiating them to construct an inclusive and enduring framework for regional integration.

4.2 A comparative model of regional cultural education: exploring collaborative pathways

To address these collaborative challenges, this study proposes a comparative model of regional cultural education that seeks common ground through contrast and pathways through diversity. Integrating the TRD and the CKF, the model forms a

multi-layered interactive framework linking cultural cognition, cultural activity, and educational context (see Figure 3). At its core, the model is built upon the Person–Behavior–Environment framework, integrating the five cultural elements into a dynamic system of interaction. Learners (Person) continuously construct and adjust their cultural understanding through teacher–student interaction (Behavior) and the broader family–school–community environment (Environment). The left and right sides of the model respectively present the progressive pathway of Cultural Knowings and corresponding Cultural Activities, reflecting the transformation from cognitive generation to pedagogical practice. The model further demonstrates how cultural cognition migrates and interacts across multiple educational contexts, offering a structured analytical lens for comparing similarities and differences in cultural construction, classroom design, and identity formation among Guangdong, Hong Kong, and Macao.

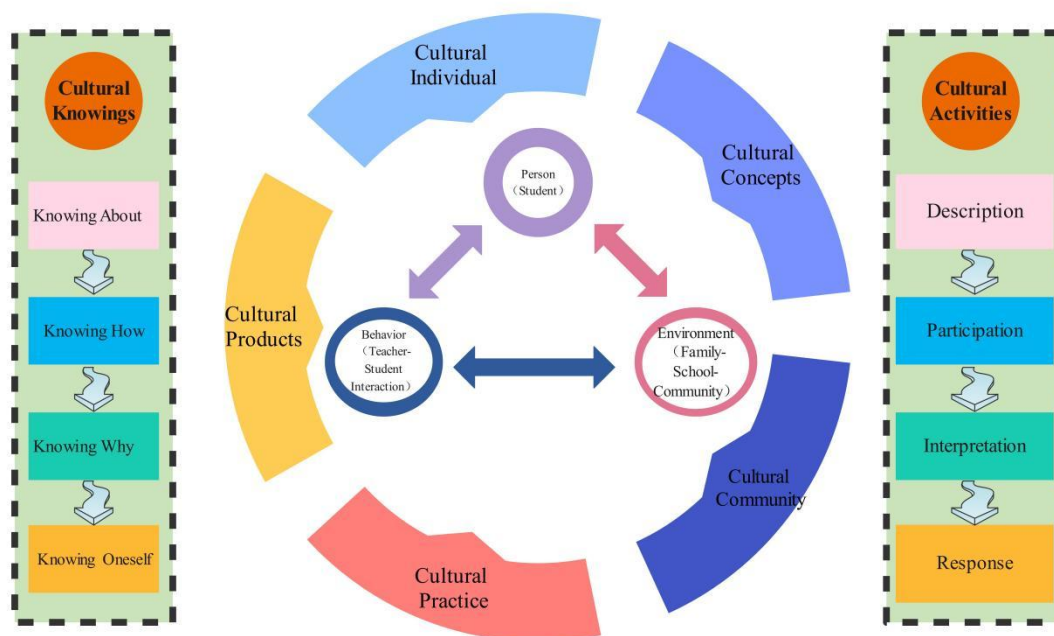


Figure 3 Comparative Model of Regional Cultural Education

At the personal level, cultural identity among youth in the three regions does not arise spontaneously but develops through continuous interaction between cognitive systems and cultural

experiences. Exposure to diverse public cultures activates specific cognitive schemata, linking abstract cultural concepts to personal growth experiences. Research indicates that cultural identity formation is

a multi-actor, progressive, and context-embedded process, requiring emotional support from families, systematic guidance from schools, and practical engagement from the wider community.

At the behavioral level, cultural cognition is not merely a process of knowledge accumulation but one of situated practice and symbolic interpretation. Moran's framework—Knowing About, Knowing How, Knowing Why, and Knowing Oneself—maps onto four ascending stages of knowledge acquisition, skill application, meaning interpretation, and identity reflection. Education should therefore move beyond content transmission by integrating cultural practice into learning design—activating cognition through practice and deepening identity through reflection.

At the environmental level, collaboration depends on the joint support of institutional structures, resources, and cultural ecosystems. While the three regions have each developed distinctive systems for traditional culture education, their institutional mechanisms differ considerably: the mainland emphasizes curriculum standards, teacher preparation, and administrative promotion, whereas Hong Kong and Macao rely more on project-based initiatives, community partnerships, and cultural immersion. Promoting resource sharing and curriculum alignment, while preserving local characteristics, could gradually foster a cross-regional cultural education community. Concrete measures may include aligning the traditional culture modules of language curricula across regions, developing shared online teaching platforms, and organizing joint cultural immersion activities—thereby reducing environmental fragmentation and enhancing the sustainability of educational collaboration.

In addition, a dynamic cultural adaptation perspective provides practical strategies for promoting cross-regional educational collaboration. Related constructivist and cultural-adaptation studies indicate that cultural cognition is not fixed but evolves through ongoing schema switching and contextual adjustment (e.g., Chiao et al., 2009; Molinsky, 2007). Bicultural individuals can navigate

multiple cultural frameworks by activating the relevant schemata. This insight offers practical guidance for the GBA: educators can design cultural-switching activities that enhance students' cognitive flexibility and intercultural sensitivity—for instance, juxtaposing classical poetry with modern urban themes, or comparing Mid-Autumn traditions with Christmas celebrations—to build cognitive elasticity and foster multicultural understanding.

From this foundation, the study develops a three-level pathway for regional educational collaboration—shared knowledge, collaborative practice, and deep identity formation.

At the shared-knowledge level, the three jurisdictions co-develop a minimal consensus platform by assembling common curricular resources and teaching cases. At the collaborative-practice level, cross-regional festivals, teacher–student exchanges, and co-designed cultural projects provide situated contexts that translate curricular intentions into pedagogical action. At the deep-identity level, reflective activities, narrative practices, and cultural expression transform cultural knowledge into value commitments, consolidating a sustainable sense of belonging.

As illustrated in Figure 3, the collaborative development of traditional culture education is not about erasing differences but about constructing integrative pathways through them. Leveraging the dynamic interplay among Person, Behavior, and Environment, together with cultural–cognitive frameworks, this model provides both a theoretically robust and practically actionable approach to fostering cultural collaboration across the GBA. Such a framework not only offers essential cultural support for regional educational integration but also establishes a new paradigm for cultural identity education in multicultural contexts.

5. Integrated Pathways for the Collaborative Development of Traditional Cultural Education

Grounded in the regional comparative model of cultural education, this study finds that the differentiated trajectories and reciprocal influences

between the mainland and Hong Kong–Macao have fostered fertile conditions and diverse practices for advancing collaborative traditional culture education across the GBA. While the region’s multilingual and multicultural environment inevitably presents challenges, it also offers valuable opportunities for innovation and integration.

As Morris (2020) notes, education is inherently a process of continuity and interaction rooted in experience. Drawing on these insights and grounded in the theoretical foundations of the TRD and the CKF, this study develops an integrated framework for regional collaboration in cultural education (see Figure 4).



Figure 4 Collaborative Framework for Traditional Cultural Education in the GBA

This framework centers on the Person–Behavior–Environment triad and identifies cultural awareness as the key mediating force linking individual learning with regional collaboration. Adolescents serve as the primary agents of cultural learning, embodying both cultural inheritance and creative transformation. Behavior refers to the externalized actions of cultural practice and classroom engagement, while Environment encompasses the family, school, and community contexts that sustain cultural experience and exchange. Through continuous feedback among these three dimensions, a dynamic equilibrium emerges—one that drives the cyclical progression of

cultural learning through four interrelated stages: cognition, participation, reflection, and identification. This cyclical mechanism connects cognitive understanding with experiential engagement, enabling the simultaneous advancement of individual growth and regional collaboration.

Accordingly, the central goal of GBA cultural education collaboration is to establish a sustainable interactive network that links cultural cognition, classroom practice, and sociocultural environments. Such a network fosters ongoing interaction among knowledge transmission, capacity building, meaning construction, and identity formation, thereby deepening students’ understanding and experience of

traditional culture. It also promotes the joint development and sharing of cultural products, cultural practices, and cultural communities—ultimately achieving multilayered integration and enduring cultural symbiosis.

Extending this framework, the study proposes a three-tier operational pathway—shared knowledge, collaborative practice, and deep identity formation—as a structured approach to regional educational integration. At the shared-knowledge level, the three jurisdictions can co-develop common curricular resources and teaching cases, establishing a minimal consensus platform for traditional culture education. At the collaborative-practice level, joint festival events, teacher–student exchanges and co-created cultural projects can transform curricular intentions into meaningful pedagogical action. At the deep-identity level, reflective activities, identity narratives, and creative cultural expressions can internalize cultural knowledge as value commitments, consolidating a durable sense of belonging and cultural confidence.

As illustrated in Figure 4, collaborative development in traditional culture education is not about eliminating differences but about constructing integrative pathways through diversity—a process that connects micro-level learning mechanisms with the broader logic of regional cultural integration.

The first level focuses on cultivating cultural knowledge and shared competencies. At this stage, cultural products serve as both media for knowledge transmission and tools for skill development. Carefully designed curricula and teaching materials emphasize linguistic and cultural continuity, enabling students to acquire the core elements of Chinese culture in a structured and progressive way. Incorporating comparative cultural perspectives at appropriate points fosters critical thinking and helps students appreciate the distinctive meanings and values of Chinese culture in relation to other traditions. Experiential learning activities—such as poetry recitation, calligraphy, and painting—further deepen cultural engagement and enhance students’ comprehensive competencies. Resource

complementarity and cultural sharing across regions help reduce communication costs and promote co-construction and mutual enrichment in traditional culture education.

The second level addresses the interaction between cultural provision and community integration. At this stage, adolescents act not only as participants but also observers and cultural comparators. A unified network connecting families, schools, and communities provides diverse platforms for experiential cultural learning. Joint cross-regional initiatives—such as heritage conservation workshops, traditional craft programs, and cross-cultural exchange projects—enhance students’ understanding of both local and global cultures, while strengthening their sense of participation and belonging. Innovation plays a pivotal role at this stage: digital media, social platforms, and virtual communities facilitate two-way online and offline cultural interaction, while immersive technologies such as virtual and augmented reality revitalize cultural communication. Through the reinforcement of community networks and shared resources, the GBA can foster a cultural community centered on Chinese traditions yet open to multicultural enrichment. Governments should strengthen cultural education integration in the GBA by establishing dedicated cultural education funds, formulating curriculum standards, and co-developing educational resources.

The third level centers on the cultivation of cultural awareness and identity. Building on the accumulation of knowledge and experiential learning from the previous stages, reflection becomes the core activity at this stage. Pedagogically, teachers should guide students in project-based cultural inquiries that enable them to grasp the deeper meanings and contemporary relevance of Chinese culture, situate it within the global cultural landscape, and cultivate openness to other traditions. In the realm of public discourse, media outlets should promote a positive atmosphere for cultural dialogue through in-depth reporting and thematic discussions that enhance public appreciation of Chinese cultural values. Equally essential is policy and institutional support.

Governments should strengthen cultural education integration in the GBA by establishing dedicated cultural education funds, formulating curriculum standards, and co-developing educational resources. Collaboration between governments and educational institutions—through textbooks, online platforms, and other media—can provide comprehensive support for schools across the region. This top-down institutional backing, coupled with deep cultural reflection, facilitates the formation of cultural identity and the cultivation of citizens who are both globally minded and culturally confident.

As Fei Xiaotong (1999, pp. 12–13) notes, cultural self-awareness refers to an individual's clear understanding of their own culture—its origins, features, and developmental trajectory—which empowers them to adapt creatively and innovate in response to new contexts. Through the coordinated advancement of these three levels, this study outlines a comprehensive framework for traditional culture education that places cultural self-awareness at its core. Its successful realization requires the concerted efforts of the education, culture, and social sectors. Ultimately, this integrated system constitutes a dynamic and cyclical ecosystem that encourages students to think critically, engage comparatively, and reflect deeply. Through this process, the system strengthens students' cultural foundations and prepares them to become culturally confident citizens with an international outlook.

6. Conclusion

This study makes three principal contributions. First, at the level of theoretical integration, it combines the TRD with the CKF to construct an analytical framework that illuminates the interaction among cultural cognition, behavioral practice, and educational environments. Second, at the level of model building, it proposes a cyclical process of cultural Learning — cognition — participation — reflection — identification — and integrates it with the Person — Behavior — Environment framework, thereby developing an operational model for regional collaboration in cultural education. Third, at the level

of practice-oriented analysis, through a systematic comparison of policy and curriculum documents and related scholarship from Guangdong, Hong Kong, and Macao, the study identifies both differences and complementarities in structural arrangements, curricular orientations, and identity formation. Together, these contributions deepen understanding of collaborative mechanisms in traditional culture education and provide sustainable theoretical support and actionable pathways for coordinated development across the GBA.

Despite these contributions, the study has several limitations. First, although the TRD and the CKF offer a robust lens on the interplay among cognition, behavior, and environment, they do not fully capture variations in policy implementation or the complexity of local cultural contexts across jurisdictions. Second, the comparative analysis emphasizes macro-level structures and pathways and has yet to be corroborated by large-scale empirical data or longitudinal evidence. Third, while regional collaboration is foregrounded, intra-GBA differences among cities and communities are not examined systematically, which may limit the completeness of local-level interpretations.

Future research can advance in several directions. First, multi-site case studies, longitudinal tracking, and analyses of teacher–student interaction could further strengthen the empirical foundation for understanding how cultural cognition develops through collaborative educational practice. Second, cross-disciplinary approaches that integrate education, cultural studies, and digital technology may enrich the analytical framework and generate more actionable strategies for regional policy design. Finally, greater attention should be paid to localized practices and community-level variations across different sociocultural contexts, in order to clarify the mechanisms that connect educational collaboration with cultural identity formation.

Overall, the development of traditional culture education in the GBA is a continuous, adaptive, and co-evolutionary endeavor. Its success depends not only on the refinement of theoretical frameworks but

also on sustained policy commitment, the active engagement of schools and communities, and the creative participation of young learners. By deepening regional collaboration and co-building cultural resources, the GBA can foster an open and resilient educational ecosystem that consolidates cultural confidence, sustains cultural vitality, and nurtures a new generation with both global vision and deep cultural grounding.

Endnotes

The Basic Law of the Hong Kong Special Administrative Region designates Chinese and English as Hong Kong's official languages. Following the 1997 handover, Chief Executive Tung Chee-hwa introduced the "biliterate and trilingual" policy—promoting two written languages (Chinese and English) and three spoken languages (Mandarin, Cantonese, and English). After Macao's return to China in 1999, the Basic Law of the Macao Special Administrative Region similarly established a "trilingual and quadrilingual" framework, recognizing Chinese, English, and Portuguese as written languages, and Mandarin, Cantonese, English, and Portuguese as spoken languages.

Conflict of Interest

The authors declare that they have no conflicts of interest to this work.

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