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The Construction and Evaluation of an Integrated Model for the "1+X" Certificate System and Marketing Talent Cultivation in the GBA ——A Path to Synergistic Development

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Abstract: The accelerated integration and industrial upgrading in the Guangdong - Hong Kong - Macao Greater Bay Area (GBA) have created a high demand for skilled marketing workforce, revealing a structural misalignment between vocational education outputs and the regional economy's needs. The national "1+X" certificate policy is a key reform, but its implementation in the GBA context is under - explored. This study aims to build, operationalize, and evaluate an integration model that combines the "1+X" framework with marketing talent cultivation in vocational colleges.Using a mixed - methods design, the study analyzes the GBA's marketing talent situation through surveys of over 350 stakeholders and in - depth interviews. Based on the evidence and relevant theories, it proposes a multi - layered, tripartite integration model consisting of a Foundational Academic Core, a Dynamic Skill - Certificate Nexus, and an Applied Practice - Innovation Ecosystem, with support mechanisms.The study has a rigorous evaluation framework. The model was piloted at a GBA vocational college for two years. Quantitative and qualitative data show significant improvements in certificate attainment, job readiness, and career adaptability. The paper ends by suggesting implementation pathways, discussing policy implications for overcoming barriers under "one country, two systems", and proposing future research directions. This work advances national education policy theory and provides a practical plan for cultivating GBA's marketing professionals.

1. Introduction

1.1 Background and Significance

The promulgation of the Outline Development Plan for the Guangdong-Hong Kong-Macao

Greater Bay Area in 2019 marked a strategic pivot in China's regional development policy, envisioning a world-class city cluster and a global hub for technology, finance, and advanced manufacturing. This ambitious vision is predicated on the availability of a sophisticated human capital base capable of driving innovation, facilitating international commerce, and navigating the complexities of a tri-jurisdictional market encompassing Mainland China, Hong Kong SAR, and Macao SAR. Within this ecosystem, the marketing function transcends its traditional boundaries. Modern marketing professionals in the GBA are expected to be data-literate, culturally agile, strategically minded, and adept at leveraging digital platforms across diverse consumer landscapes. They must operate at the intersection of technology, creativity, and business strategy to build brands, drive sales, and foster customer relationships in one of the world's most competitive markets.[1]

Vocational education and training (VET) institutions bear a profound responsibility in supplying this talent pipeline. Yet, a discernible gap persists. Industry reports consistently highlight a shortage of marketing graduates who possess not only theoretical knowledge but also the practical, certified skills demanded by GBA enterprises, particularly in emerging areas like cross-border e-commerce,big data marketing, and brand internationalization. This gap points to systemic issues in curriculum design, pedagogical approaches, and the alignment of educational outcomes with industry certification standards.

The national "1+X" certificate system, initiated by the Ministry of Education, represents a paradigm shift aimed at bridging this very divide. By mandating the attainment of one academic diploma ("1") alongside multiple vocational skill level certificates ("X"), the policy seeks to enhance the employability, flexibility, and practical competence of graduates. However, the transition from policy directive to effective, localized practice is non-trivial. Implementation often risks becoming a superficial "add-on," where certificate training runs parallel to, rather than integrated with, the core curriculum. This problem is magnified in the GBA due to its unique characteristics: the coexistence of three distinct education systems, differing industry standards, and varying levels of recognition for vocational qualifications across the boundaries.[2,3]

1.2 Research Problem and Objectives

This study addresses the critical question: How can vocational colleges in the GBA construct and implement a deeply integrated, effective, and sustainable model that fuses the "1+X" certificate system with marketing talent cultivation programs, thereby directly serving the region's strategic industrial needs?

To answer this, the research pursues the following interconnected objectives:

1. To diagnose the specific competency requirements for marketing professionals within the key industries of the GBA and assess the current state of "1+X" integration in regional VET institutions.
2. To construct a theoretically grounded and empirically informed integration model that systematically links academic learning, skill certification, and practical application within the GBA context.
3. To design and apply a multi-dimensional evaluation framework to assess the efficacy, relevance, and transferability of the proposed model.
4. To derive practical pathways, policy recommendations, and institutional strategies for successful model implementation and scaling within the GBA's complex environment.

1.3 Structure of the Paper

Following this introduction, the paper presents a comprehensive literature review, establishing the theoretical and practical foundations. The research methodology section details the mixed-methods approach. The core of the paper elaborates on the construction of the integration

model, followed by a presentation of the pilot evaluation results and analysis. A discussion section interprets the findings, explores implications, and acknowledges limitations, leading to a conclusive summary.

2. Literature Review and Theoretical Framework

2.1 International Models of Vocational Education and Industry Certification

Globally, successful vocational systems offer valuable insights. The German Duales System is paradigmatic, institutionalizing a partnership where students split time between workplace training (regulated by chambers of commerce) and school-based education, leading to nationally recognized apprenticeships. This model ensures that skills are standardized, current, and directly relevant. The UK's employer-led standards, developed by Sector Skills Councils, define the competencies required for specific occupations, which are then translated into qualifications. Australia's Vocational Education and Training (VET) system features nationally consistent "training packages" developed by Industry Reference Committees, ensuring portable qualifications across states. A common thread is the deep, structural involvement of industry in defining, delivering, and assessing competencies—a principle central to the "1+X" philosophy but requiring robust mechanisms for execution.[4]

2.2 The "1+X" Certificate System: Evolution, Intentions, and Challenges

Domestically, the "1+X" system is a cornerstone of the National Implementation Plan for Vocational Education Reform (2019). Scholarly work has rapidly expanded around it. Researchers like Liu and Wang (2020) analyze its potential to break down the barriers between (academic education) and (vocational training). Chen (2021) explores the governance challenges in managing the multitude of "X" certificate-issuing entities (often industry associations or leading enterprises).[5,6] A key debate centers on (the integration of certificates and diplomas)—whether it should be a simple substitution, a complementary addition, or a deep, curricular restructuring (Zhang, 2022). Most studies agree that successful integration requires a re-engineering of talent cultivation schemes, teacher capabilities, and assessment methods. However, few delve into the regional economic integration context of the GBA, where must also contend with (qualification mutual recognition).

2.3 Marketing Talent in the GBA: A Demand-Side Analysis

The GBA's industrial profile is diverse, spanning advanced manufacturing in the Pearl River Delta, international finance in Hong Kong, tourism and leisure in Macao, and burgeoning tech hubs in Shenzhen and Guangzhou. Marketing roles accordingly diversify. Studies by the GBA Talent Development Research Institute (2021) identify acute demand for talents skilled in: digital marketing analytics for manufacturing B2B firms; luxury brand management and experiential marketing for the tourism sector; fintech product marketing; and cross-cultural communication for export-oriented businesses. This demands a (compound-type) talent profile: T-shaped professionals with deep disciplinary knowledge (the vertical stem) and broad interdisciplinary, digital, and soft skills (the horizontal bar). The "1+X" system is ideally suited to cultivate this profile, with the "1" providing the depth and the "X" certificates offering breadth and specialization.

2.4 Theoretical Synthesis: An Integrated Framework

This study draws upon and integrates three theoretical strands:

Competency-Based Education (CBE):CBE shifts focus from time-based learning to

demonstrated mastery of defined, observable competencies. The "X" certificates are quintessential CBE instruments. The integration model must ensure these competencies are embedded within, not appended to, the learning journey.

Human Capital Theory: Investment in education and training yields returns for individuals and society. The model aims to maximize this return by ensuring the skills acquired ("X" certificates) have high market value within the GBA, thereby improving graduate productivity and wages.

Regional Innovation Systems (RIS) Theory: The GBA can be viewed as an RIS where the flow of knowledge and skilled labor between firms, universities, and VET institutions is crucial for innovation. The proposed model positions VET colleges as active nodes in this system, co-creating knowledge (through curriculum design) and supplying tailored human capital, thus strengthening the region's innovative capacity.[7]

2.5 Identified Research Gap

While existing literature addresses "1+X" in generic terms and analyzes GBA talent needs separately, there is a conspicuous lack of research that: (a) specifically focuses on the marketing discipline within the GBA context; (b) proposes a detailed, operational integration model backed by empirical data from the region; and (c) develops a robust evaluation mechanism to measure the model's impact. This study aims to fill this multidimensional gap.

3. Research Methodology

3.1 Philosophical Stance and Design

This research adopts a pragmatic paradigm, prioritizing research questions and practical outcomes over strict adherence to a single philosophical tradition. A sequential exploratory mixed-methods design (Creswell & Plano Clark, 2018) was employed. The initial qualitative phase (interviews, document analysis) informed the development of the quantitative survey instrument and the model's conceptual structure. The subsequent quantitative phase provided broad, generalizable data on perceptions and outcomes. A final qualitative phase (post-pilot interviews) helped explain and contextualize the quantitative results.

3.2 Data Collection

Phase 1 (Qualitative - Scoping):35 semi-structured interviews were conducted with: VET marketing department heads (n=10), "X" certificate training instructors (n=10), and HR/managers from GBA marketing firms (n=15). Policy documents from the three jurisdictions and college curricula were analyzed.

Phase 2 (Quantitative - Survey): A structured questionnaire was developed, validated through expert review and pilot testing. It measured: perceived importance of various marketing competencies, awareness and perceived value of "X" certificates, barriers to integration, and desired learning formats. It was distributed electronically to a stratified random sample of VET marketing students (n=1200, response rate 42%, valid n=504), teachers (n=200, response rate 65%, valid n=130), and industry professionals (n=500, response rate 32%, valid n=160) across the GBA.

Phase 3 (Mixed-Methods - Pilot & Evaluation): The model was implemented in a two-year pilot at ZhongShan Polytechnic. Pre and post-intervention data were collected from the experimental student cohort (n=85) and a comparison cohort (n=80). Data included: grades, certificate pass rates, internship supervisor evaluations, graduate employment data (6 months post-graduation), and focus group discussions with students and teachers.

3.3 Data Analysis

Qualitative data from interviews and open-ended responses were analyzed using thematic analysis (Braun & Clarke, 2006) via NVivo software to identify key themes, challenges, and success factors.

Quantitative survey data were analyzed using SPSS 27.0. Techniques included descriptive statistics, factor analysis to identify latent constructs (e.g., "Integration Readiness"), independent samples t-tests, and multiple regression analysis to identify predictors of positive outcomes.

Pilot evaluation data employed paired-sample t-tests (for within-group changes) and analysis of covariance (ANCOVA, for between-group comparisons while controlling for pre-existing differences).

4. The GBA-"1+X" Marketing Talent Integration Model: A Constructed Framework**

Based on the empirical findings and theoretical grounding, a three-layer, feedback-driven integration model is proposed. The model is visualized as an interconnected system where each layer informs and reinforces the others, underpinned by critical support pillars.

4.1 The Foundational Academic Core (The "1")

This layer represents the diploma-granting, credit-based curriculum. Its redesign is the first step toward integration.

Competency-Mapped Curriculum: Traditional marketing courses (Principles, Consumer Behavior, etc.) are not discarded but are explicitly mapped against the competency units of selected "X" certificates. For instance, a module in a Digital Marketing course directly aligns with and prepares students for specific units of the "Digital Marketing Analyst " certificate.[8]

Infusion of GBA Context: Core courses incorporate GBA-specific case studies, market data, and regulatory environments. A course on International Marketing would include dedicated modules on Hong Kong's role as a gateway, Macao's tourism market dynamics, and cross-border e-commerce regulations between Zhuhai and Macao.

Flexible Module Design: The curriculum is modularized, allowing "X" certificate training content to be inserted as specialized modules within existing courses or as standalone micro-credentials that accrue towards the diploma.[9]

4.2 The Dynamic Skill-Certificate Nexus (The "X")

This is the engine of skill specialization and industry validation.

Strategic Certificate Portfolio: Colleges, guided by an Industry Advisory Board comprising GBA employers, select a portfolio of "X" certificates that align with regional cluster strengths (e.g., "E-commerce Live-Streaming Operations," "Brand Content Strategy," "CRM Data Analytics"). The portfolio is reviewed and updated annually.

Embedded, Not Bolted-On: Certificate training is not an extracurricular weekend activity. Its theoretical components are woven into the Foundational Core. The hands-on, assessment-focused training is delivered in intensive boot camps, project sprints, or integrated into dedicated lab sessions, often co-taught by college instructors and industry-certified trainers.

Tiered Progression: Certificates are structured along a progression path, allowing students to build expertise throughout their study, culminating in an advanced certificate that signals readiness for specialized roles.

4.3 The Applied Practice-Innovation Ecosystem

This layer ensures the transition from learning to doing and creating.

Enterprise-Embedded Projects: Instead of generic internships, students undertake real-world projects defined by partner enterprises. A student team might be tasked with developing a social media entry strategy for a Zhongshan manufacturer targeting the Hong Kong market. Completion of such a project could serve as the practical assessment for a relevant "X" certificate.

Innovation Workshops and Labs:Colleges establish Marketing Innovation Labs, equipped with tools for social media analytics, content creation, and CRM simulation. These labs host hackathons and innovation challenges sponsored by GBA companies, blurring the lines between classroom, certification lab, and innovation incubator.[10]

Cross-Border Mobility Programs: Short-term exchange programs with VET institutions in Hong Kong and Macao allow students to understand different market nuances and business practices, further enhancing their GBA-relevant competencies.

4.4 The Support and Enabling Pillars

The three layers are held together and made functional by four critical pillars:

1. The GBA Credit Bank and Qualification Framework: A regional digital platform that allows credits from academic courses and "X" certificates to be deposited, recognized, and converted across participating institutions in Guangdong, Hong Kong, and Macao. This is the technical solution to the "one country, two systems" credentialing challenge.

2. The Dual-Qualified Teacher Development System: A mandatory program for marketing teachers involving: (a) periodic industry secondments to maintain practical skills; (b) training to become certified assessors for "X" certificates; and (c) incentives for obtaining high-level industry certifications themselves.

3. The Co-Governance Industry Advisory Board: A formal body with decision-making power in curriculum review, certificate selection, and resource allocation, ensuring continuous industry feedback and ownership.

4. The Digital Infrastructure: A unified learning management system that hosts the mapped curriculum, certificate training materials, project collaboration spaces, and links to the Credit Bank, creating a seamless digital learning journey for students.

5. Model Evaluation: Pilot Implementation and Results

The model was piloted over four semesters with a cohort of 85 marketing majors at Zhongshan Polytechnic.

5.1 Evaluation Metrics:A balanced scorecard approach was used, measuring:

Learning & Growth: Student pass rates for "X" certificates; pre/post scores on a marketing competency assessment.

Internal Process: Teacher readiness scores (via survey); integration depth of curriculum (document analysis).

Stakeholder Perspective:Student satisfaction (surveys); employer satisfaction with intern/graduate performance (structured evaluations).

Outcome:Graduate employment rate at 6 months; starting salary compared to control group; job-education relevance (graduate self-report).

5.2 Key Findings:

Certificate Attainment: The pilot cohort achieved an average of 2.4 "X" certificates per student, significantly higher than the control group's 0.8 ($p < .001$). Pass rates for (intermediate) level certificates were 78%, compared to 35% in the non-integrated approach.

Competency Development: ANCOVA results, controlling for pre-test scores, showed the pilot group scored significantly higher on a applied marketing case-study exam ($F(1, 162) = 24.73$, $p < .001$, $\eta^2 = .13$) and on employer-rated competencies during internships (e.g., digital tool usage, project execution).

Employment Outcomes: At the 6-month mark, 94% of the pilot cohort was employed, versus 87% of the control group. More notably, 76% reported their job was "closely related" to their studies and certificates, compared to 52% in the control group. The average starting salary for the pilot group was 18% higher.

Qualitative Insights: Focus groups revealed students felt more "confident" and "job-ready." Industry partners reported interns were "able to contribute meaningfully from day one." Teachers noted initial workload increases but greater professional fulfillment and stronger connections with industry.

5.3 Challenges Identified in the Pilot:

Teacher Workload and Resistance: The initial time investment for curriculum redesign and certification training was substantial.

Coordination Costs: Managing the Industry Advisory Board and synchronizing academic calendars with enterprise project cycles required dedicated administrative support.

Leveraging the Credit Bank: The full vision of cross-border credit transfer was limited in the pilot due to pending inter-jurisdictional agreements.

6. Discussion

6.1 Interpretation of Findings

The positive results strongly support the core hypothesis: a deep, systematic integration of the "1+X" system within a GBA-contextualized curriculum enhances the quality and market relevance of marketing talent cultivation. The model's success stems from its systemic nature—it does not treat "X" as an isolated component but re-engineers the entire educational process around demonstrable, industry-valued competencies. The significant improvement in intermediate certificate attainment suggests that integration fosters deeper mastery, not just superficial credential collection.[11]

6.2 Theoretical and Practical Implications

Theoretically, this study demonstrates the effective application of CBE and RIS theories in a unique Chinese regional context. It provides a testable model for that can be adapted to other fields and regions.

Practically, it offers a roadmap:

For Colleges: Begin with a competency-mapping exercise of existing curricula against high-value "X" certificates; establish a formal Industry Advisory Board; invest in teacher "dual-qualification" programs.

For Policymakers (GBA-wide): Accelerate the development of a unified regional qualifications

framework and digital credit bank; provide grants for curriculum co-development projects between colleges and enterprises; create incentives for teachers to engage in industry upskilling.

For Industry: Move beyond being passive consumers of graduates to active co-creators of the curriculum and assessment; provide more structured project-based learning opportunities.

6.3 Limitations and Future Research

This study has limitations. The pilot was conducted at a single college in Guangdong. Replication across more institutions, including in Hong Kong and Macao, is needed. The study's timeframe tracks early career outcomes; longitudinal research is required to assess long-term career progression. Future research should also focus on the economic rate of return of this model and delve deeper into the technological and policy architectures required for a fully functional GBA-wide Credit Bank.

7. Conclusion

In the crucible of the Guangdong-Hong Kong-Macao Greater Bay Area's development, the imperative to forge a new generation of marketing talent is clear. This research has moved beyond diagnosing the problem to constructing and empirically validating a solution. The proposed GBA-"1+X" Marketing Talent Integration Model offers a comprehensive, layered framework that transforms vocational marketing education from a supply-driven activity into a demand-responsive, collaborative ecosystem. By deeply fusing academic rigor with industry certification and immersive practice, and by building the necessary support pillars for cross-border recognition and teacher development, the model provides a viable pathway to close the skills gap.

The pilot results are promising, indicating tangible benefits for students, educators, and employers alike. While implementation challenges exist, they are surmountable with strategic commitment. As the GBA strives to solidify its position as a global economic and innovation leader, investing in such synergistic education-industry models is not merely an educational reform but a strategic necessity. This study contributes a foundational blueprint for that endeavor, with implications resonating beyond marketing, towards the broader landscape of vocational education in an era of regional integration and rapid technological change.[12]

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References

[1] *State Council. (2019). Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area. Beijing: People's Publishing House.*

[2] *Ministry of Education and Three Other Departments. (2019). Pilot Program for Implementing the System of "Academic Certificates Plus Several Vocational Skill Level Certificates" in*

Educational Institutions. Document No. 6 of the Ministry of Education on Vocational Education and Adult Education in 2019.

[3] *Chen Ziji. (2020). The "1+X" Certificate System: An Important Manifestation of the Typological Characteristics of Vocational Education. China Vocational and Technical Education, (7), 5-8.*

[4] *Shi Weiping, Hao Tiancong. (2021). The Implementation Logic and Promotion Strategies of the "1+X" Certificate System in Vocational Education from the Perspective of Industry-Education Integration. Educational Research, 42(4), 120-128.*

[5] *Guangdong-Hong Kong-Macao Greater Bay Area Vocational Education Industry-Education Alliance. (2021). Report on the Development of Vocational Education in the Guangdong-Hong Kong-Macao Greater Bay Area (2020). Guangzhou: Sun Yat-sen University Press.*

[6] *Li Haidong, Huang Wenwei. (2020). Discussion on the Path of Curriculum System Reconstruction in Vocational Education under the "1+X" Certificate System. Vocational and Technical Education, 41(11), 26-30.*

[7] *Wang Xiaohong, Liu Yufeng. (2022). Practical Exploration and Institutional Innovation of Qualifications Framework Alignment in the Guangdong-Hong Kong-Macao Greater Bay Area. Higher Engineering Education Research, (3), 145-150.*

[8] *Zhang Meng, Zhao Zhiqun. (2021). The Practical Dilemmas and Solution Paths of the Implementation of the "1+X" Certificate System in Vocational Education: A Survey Analysis Based on National Pilot Institutions. Higher Education Research of China, (5), 98-103.*

[9] *Luo Ruzhen, Ma Shuchao. (2020). Research on the Reform of Talent Cultivation Mode for Marketing Majors under the Background of the Development of Vocational Education Types. China Vocational Education, (23), 70-75.*

[10] *Huang, B., & Li, M. (2022). Vocational education and training in the Guangdong-Hong Kong-Macao Greater Bay Area: Challenges and opportunities for regional integration. Journal of Vocational Education & Training, 74(3), 456-475.*

[11] *European Centre for the Development of Vocational Training (Cedefop).(2020). The future of vocational education and training in Europe. Luxembourg: Publications Office.*

[12] *Liu Chunsheng, Xu Han. (2018). Guide to the Development of Work-Study Integrated Curriculum in Vocational Education. Beijing: Higher Education Press.*